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**From:** Spranza, John [John.Spranza@hdrinc.com]  
**Sent:** 11/5/2019 9:35:10 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up

Do we want to provide an update yet or wait a bit longer?

John Spranza

D 916.679.8858 M 818.640.2487

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**From:** Alicia Forsythe [mailto:aforsythe@sitesproject.org]  
**Sent:** Monday, October 14, 2019 7:47 AM  
**To:** Obegi, Doug <dobegi@nrdc.org>; jon@baykeeper.org; Barry Nelson (barry@westernwaterstrategies.com) <barry@westernwaterstrategies.com>; greg@bayecotarium.org; Chris Shutes <blancapaloma@msn.com>; Kim Delfino <KDelfino@defenders.org>; Zwillinger, Rachel (Mail Contact) <rzwillinger@defenders.org>  
**Cc:** Monique Briard (Monique.Briard@icf.com) <Monique.Briard@icf.com>; Jim Watson <jwatson@sitesproject.org>; Jim Lecky (jim.Lecky@icf.com) <jim.Lecky@icf.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>; Kevin Spesert <kspesert@sitesproject.org>; Spranza, John <John.Spranza@hdrinc.com>; Grimaldo, Lenny <Lenny.Grimaldo@icf.com>  
**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up

Thank you Doug and Chris for the refinements to the Action Items. Below is an updated list – text of items 3 and 4 have been updated and items 5 and 6 were added.

I've also attached a PDF of the presentation. Note that the PDF file changes templates and page numbers part way thru. We actually used 2 presentations that day and I combined them both into one PDF file. The actual PPT files are too large to send via email.

And thanks Doug for the four papers!

Revised Action Items:

1. Schedule a terrestrial focused meeting to focus on (among other topics): (1) terrestrial species and habitat impacts; (2) impacts to refuge and refuge easements; (3) impacts to giant garter snake; and (4) mitigation strategy for terrestrial species.
2. Look at possibility of releasing the Daily Model. (Note, I talked with the team on this late last week. We are scheduling an internal Sites discussion on the possibility of releasing the model along with the timing and what documentation should accompany a release. I should have more info on this in about 2 weeks.)
3. Can Sites add the Yolo Bypass to the floodplain modeling effort? (Note, we are already planning on adding the Sutter Bypass to the floodplain modeling effort, but had not planned on including Yolo. So this action item is focused on Yolo as we had not originally planned on including the Yolo Bypass in the floodplain modeling effort. Sutter will be included.)
4. Continue discussion on effects to salmonid survival throughout the Sacramento River and Delta. – Doug sent over papers on 10/9.
5. Email copy of PPT presentation from meeting. – Completed with this email.
6. Provide deliveries and current demands in the Glenn-Colusa and Tehama-Colusa canals downstream of a prospective Sites Reservoir -- what volume of water annually could Sites serve to current water users on the Glenn-Colusa and Tehama-Colusa canals?



We are working on the action items and I'll provide an update on status next week.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Obegi, Doug <[dobegi@nrdc.org](mailto:dobegi@nrdc.org)>  
**Sent:** Wednesday, October 9, 2019 5:25 PM  
**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; [jon@baykeeper.org](mailto:jon@baykeeper.org); Barry Nelson ([barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)) <[barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)>; [greg@bayecotarium.org](mailto:greg@bayecotarium.org); Chris Shutes <[blancapaloma@msn.com](mailto:blancapaloma@msn.com)>; Kim Delfino <[KDelfino@defenders.org](mailto:KDelfino@defenders.org)>; Zwillinger, Rachel (Mail Contact) <[rzwillinger@defenders.org](mailto:rzwillinger@defenders.org)>  
**Cc:** Monique Briard ([Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)) <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>; Jim Watson <[jwatson@sitesproject.org](mailto:jwatson@sitesproject.org)>; Jim Lecky ([jim.Lecky@icf.com](mailto:jim.Lecky@icf.com)) <[jim.Lecky@icf.com](mailto:jim.Lecky@icf.com)>; Tull, Robert/SAC <[Robert.Tull@jacobs.com](mailto:Robert.Tull@jacobs.com)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; John Spranza ([john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)) <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Grimaldo, Lenny <[Lenny.Grimaldo@icf.com](mailto:Lenny.Grimaldo@icf.com)>  
**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up

Hi Ali,

Thank you for following up on our prior meeting, and I agree that it makes sense to hold off on scheduling another meeting at this point.

Attached are 3 papers from 2018 and 2019 regarding Sacramento River flows and salmon survival, including the Friedman et al 2019 paper I mentioned in the meeting, as well as the Zeug et al 2014 paper showing a very strong correlation between Stanislaus River flows and juvenile salmon survival.

In terms of the action items from the meeting, I thought that item #4 was not limited to impacts downstream of Freeport (see Perry et al 2018), but instead was regarding impacts in the Sacramento River below the intakes as well as further downstream. I believe item #3 was broader floodplain inundation modeling, not limited to Yolo Bypass (?). In addition, would you please email us a copy of the PPT presentation that was shared at the meeting with us? That was on my list of action items from the meeting.

Thanks,  
-d

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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, October 9, 2019 4:16 PM  
**To:** [jon@baykeeper.org](mailto:jon@baykeeper.org); Barry Nelson ([barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)) <[barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)>; [greg@bayecotarium.org](mailto:greg@bayecotarium.org); Obegi, Doug <[dobegi@nrdc.org](mailto:dobegi@nrdc.org)>; Chris Shutes <[blancapaloma@msn.com](mailto:blancapaloma@msn.com)>; Kim Delfino <[KDelfino@defenders.org](mailto:KDelfino@defenders.org)>; Zwillinger, Rachel (Mail Contact) <[rzwillinger@defenders.org](mailto:rzwillinger@defenders.org)>  
**Cc:** Monique Briard ([Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)) <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>; Jim Watson <[jwatson@sitesproject.org](mailto:jwatson@sitesproject.org)>; Jim Lecky ([jim.Lecky@icf.com](mailto:jim.Lecky@icf.com)) <[jim.Lecky@icf.com](mailto:jim.Lecky@icf.com)>; Tull, Robert/SAC <[Robert.Tull@jacobs.com](mailto:Robert.Tull@jacobs.com)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; John Spranza ([john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)) <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Grimaldo, Lenny <[Lenny.Grimaldo@icf.com](mailto:Lenny.Grimaldo@icf.com)>  
**Subject:** Sites Meeting with NRDC, et al. - Follow-up

All –

I sincerely apologize for the long delay in circling back to you all after our meeting. I know how important it is to follow up on our commitments and time just got away from me on this. My apologies.

I wanted to say thank you very much for taking the time to chat with us. Below are the action items that I recorded. Please let me know if I missed any or have mischaracterized any.

I also wanted to share that we continue with our discussions with CDFW on operating criteria (diversion criteria). We have also had an initial re-engagement meeting with NMFS and plan to meet with them and CDFW together in the coming weeks. NMFS is agreeable to us entering into a contract with them to run their winter-run life-cycle model for the Project. We are starting to work on the contracting effort and are hopeful that this wraps up about the time we have revised operational criteria for NMFS to run – likely late this calendar year.

We have also continued to work on refinements to the Project to right-size it for the current participants. We continue to consider a number of right-sizing actions, such as reducing the size of the reservoir along with no Delevan intake. Once the Authority identifies a preferred project, we will assess the changes and how best to move forward with the CEQA / NEPA compliance effort.

There is a lot in flux right now, so I'd like to hold off on meeting again. As we narrow down on a preferred project and new operations criteria, I would like to circle back and get your input on these. I am always happy to chat if you have questions or suggestions in the meantime.

Action Items:

1. Schedule a terrestrial focused meeting to focus on (among other topics): (1) terrestrial species and habitat impacts; (2) impacts to refuge and refuge easements; (3) impacts to giant garter snake; and (4) mitigation strategy for terrestrial species.
2. Look at possibility of releasing the Daily Model. (Note, I talked with the team on this late last week. We are scheduling an internal Sites discussion on the possibility of releasing the model along with the timing and what documentation should accompany a release. I should have more info on this in about 2 weeks.)
3. Can Sites add the Yolo Bypass to the floodplain modeling effort?
4. Continue discussion on effects to salmonid survival downstream of Freeport. Check Freedman (spelling?) 2019 paper and a recent paper from the Stanislaus River (Doug, I didn't catch the title of this one. Can you send it over or send the title?)

We will follow up on these action items in the coming weeks.

Please don't hesitate to contact me if you have any questions, thoughts or concerns on the Sites Project.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 | [aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Thomson [rthomson@sitesproject.org]  
**Sent:** 11/6/2019 9:54:16 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** Re: Sites Operations Work Group - Wed, Nov 6 1:30 pm to 3:00 pm Conference Call - No RSVP Needed

I'm not sure why Rob 'delegated' this item to you. I may be closer to that action.

Rob Thomson  
805-689-5854

On Nov 5, 2019, at 3:30 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Hi Rob and Rob – I checked in with Thad on the agenda item assigned to me (Reclamation exchanges). He is on vacation this week and won't be attending the call.

I don't know much about this. Is this something either of you can report on in the work group call?

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Rob Kunde <rkunde@wrmwsd.com>  
**Sent:** Monday, November 4, 2019 5:35 PM  
**To:** Dirk Marks <dmarks@scvwa.org>; Eric Leitterman <Eleiterman@valleywater.org>; jsutton@tccanal.com; cchilmakuri@mwdh2o.com; ccwd2@frontiernet.net; Cindy Kao <ckao@valleywater.org>; cwang@mwdh2o.com; Flores, Amparo <aflores@zone7water.com>; Ivory Reyburn <ireyburn@cvwd.org>; Randall Neudeck <rneudeck@mwdh2o.com>; rcheng@cvwd.org; robert.tull@jacobs.com; wvanderwaal@rd108.org; tbettner@gcid.net; Alicia Forsythe <aforsythe@sitesproject.org>; wmercado@zone7water.com; DRuiz@westsidewd.com; Rob Thomson <rthomson@sitesproject.org>  
**Cc:** Jim Watson <jwatson@sitesproject.org>  
**Subject:** Sites Operations Work Group - Wed, Nov 6 1:30 pm to 3:00 pm Conference Call - No RSVP Needed

Ladies and Gentlemen:

**The next Sites Project Reservoir Operations Work Group Conference Call** is as follows:

**Date/Time:** Wed, Nov 6, 1:30 pm to 3:00 pm

Call-In Phone: 310-372-7549 (tentative - if it changes, a followup email will be sent)

Call-In Passcode: 661517

**No RSVP is required** - I have your availability from the prior polling email.

The Call will primarily be status reports. At this time, there is no written material.

**Agenda:**

1. Rob Leaf (Jacobs) will provide a summary of the new BiOps for Reclamation and DWR, their anticipated effect on Reclamation and DWR operations, and their potential effects on Sites future operations (to the extent this can be qualitatively estimated at this early stage).
2. Sites staff are working on a new "chainsaw" affordability analysis for the November 15 Workshop and Nov 21 Reservoir Project Committee. Rob Tull will report on what Operations assumptions are included/not included in this analysis to date.
3. Ali Forsythe (?) will report on the status of discussions with Reclamation regarding operational exchanges between Shasta and Sites. Such exchanges will be critical to lowering the Project Cost through the Value Planning alternatives.
4. Rob Tull will provide a status report on updating the CALSIM code to allow analyses of Sites/Shasta exchanges.
5. Rob Tull will provide a status report on 2D water quality modeling for Shasta and Sites.
6. Rob Tull will provide a status report on preparation of an updated Operations Plan that includes written description of Modeling assumptions and (b) how Sites/Shasta exchanges may be implemented.

Apologies to Ivory and Shelly - Wednesday worked better for the majority and Rob Leaf was only available from 1-2pm.

**Robert J. Kunde, P.E.**

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

cell: 661-345-3719

[rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

# Sites Project: Increasing Dry Year Supplies

**Zone 7 Water Agency**

November 5, 2019



# Why named Sites?

- Settled in 1850's by John Sites  
Post office founded in 1887
- Reservoir proposed by DWR in 1957



Town of Sites, Colusa County, circa 1910.



# Who are our Partners:

## Sacramento Valley

<u>Authority Board (11 agencies)</u>	<u>Acre-ft.</u>
Colusa County	10,000.
Colusa County Water District	11,975.
Glenn County	
Glenn-Colusa Irrigation District	5,000.
Placer County WA & City of Roseville	
Reclamation District 108	4,000.
Sacramento Co WA & City of Sacramento	
Tehama-Colusa Canal Authority	
Westside Water District	15,000.
<u>Associate Members (5 non-voting)</u>	
Western Canal Water District	
Tehama-Colusa Four	
Cortina Water District	450.
Davis Water District	2,000.
Dunnigan Water District	2,717.
LaGrande Water District	1,000.
<u>Reservoir Committee</u>	
American Canyon, City of	4,000.
Carter MWC	300.

## Beyond the Sacramento Valley

<u>Reservoir Committee</u>	<u>Acre-ft.</u>
Antelope Valley-East Kern WA	500.
Coachella Valley Water District	10,000.
Desert Water Agency	6,500.
Metropolitan Water District	50,000.
San Bernardino Valley Muni WD	21,400.
San Gorgonio Pass Water Agency	14,000.
Santa Clara Valley Water District	16,000.
Santa Clarita Valley Water Agency	5,000.
Wheeler Ridge-Maricopa WSD	3,050.
Zone 7 Water Agency	10,000.

**Total acre-ft: 192,892.**

### Other (2 non-voting)

California Department of Water Resources  
(Ex Officio)

US Bureau of Reclamation (Cost-share)

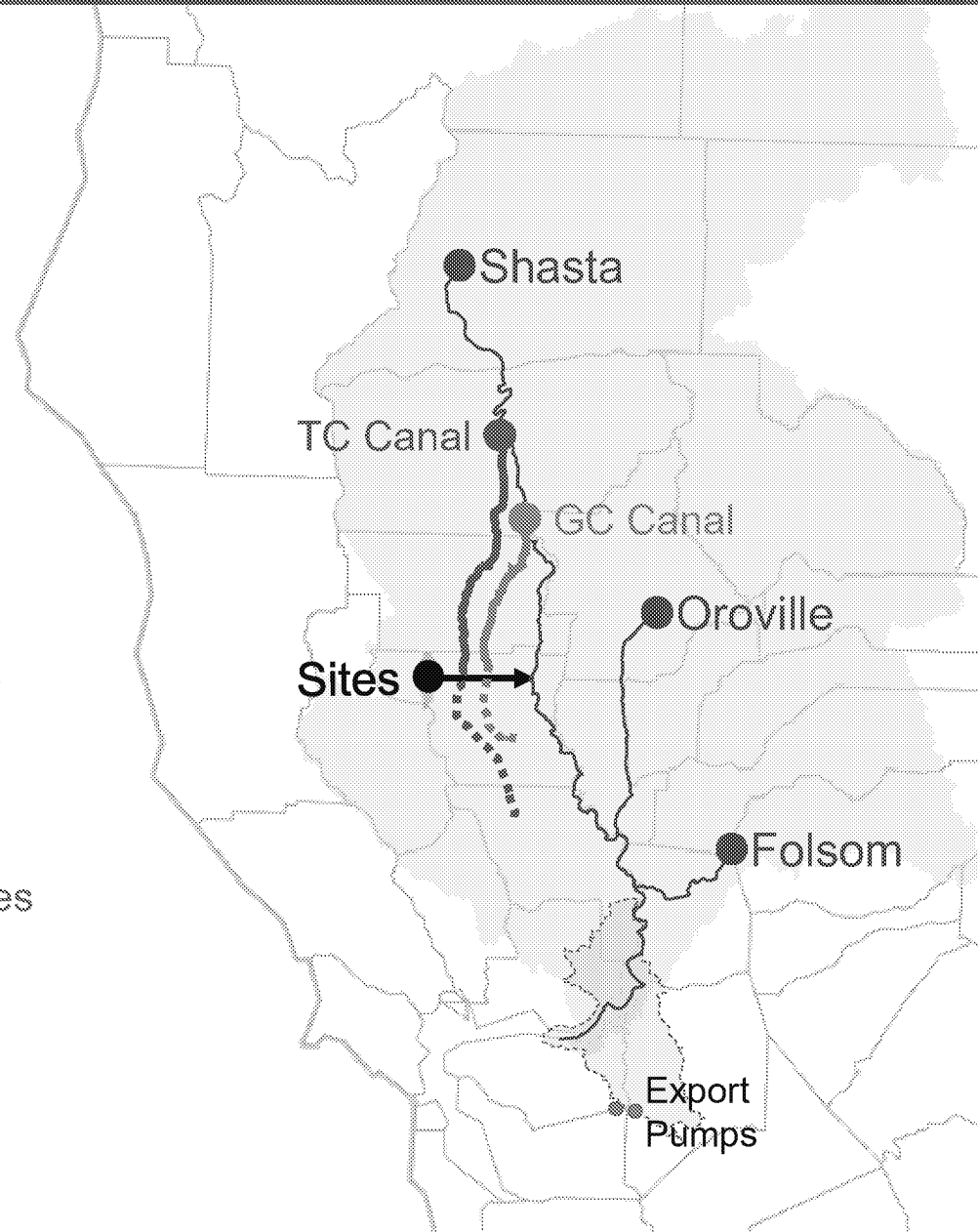
## Local Water Agencies:

**Reservoir Comm: 21 Agencies**

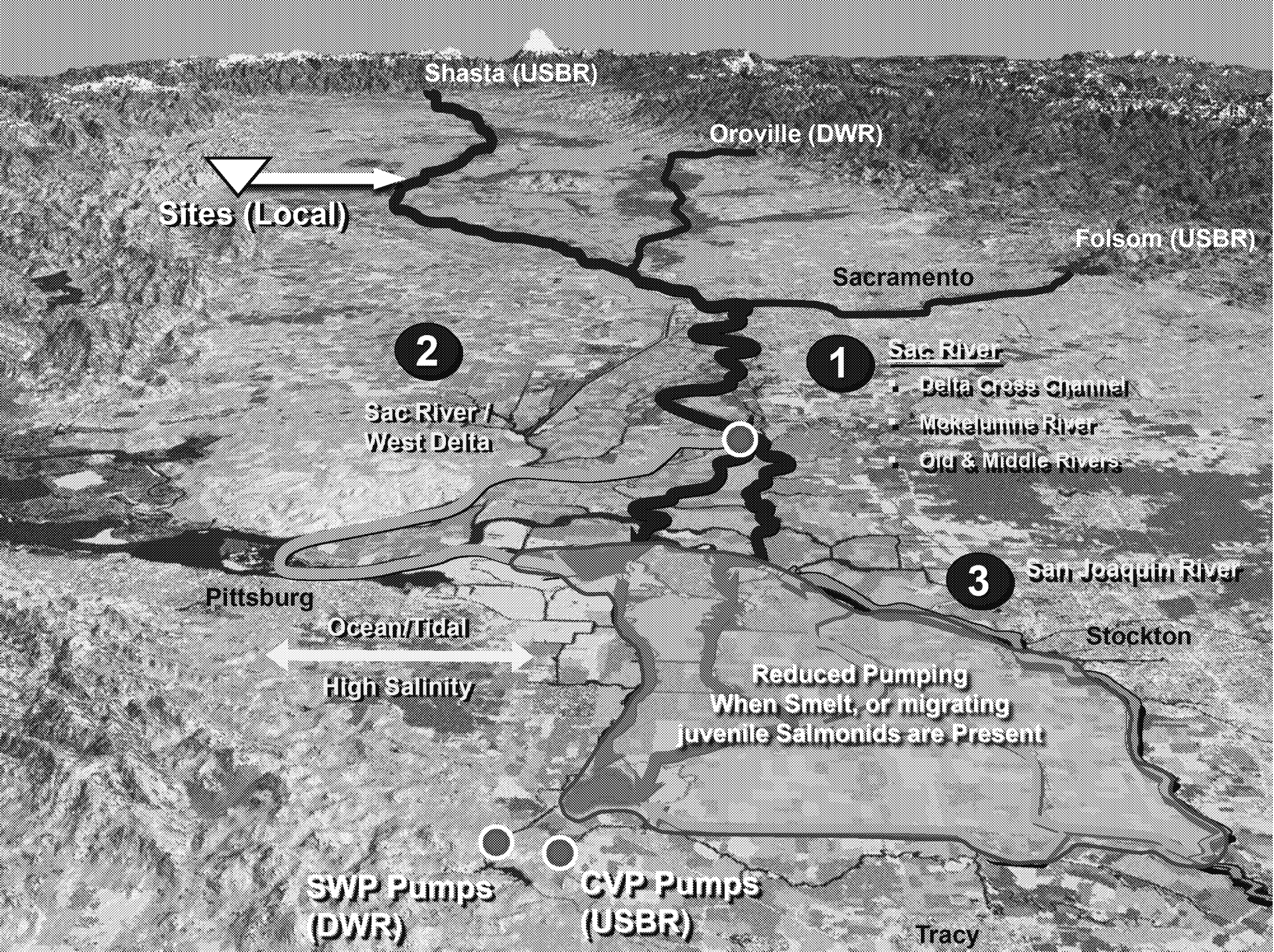
**Combined: 28 Agencies**

# What is Sites?

- Locally led
- Operated as a local, state, and federal partnership
- Costs based on beneficiary pays
- Utilizes existing infrastructure
- Off-stream surface water storage
  - ✓ Dry-year water for agriculture and communities
  - ✓ Dry-year water for endangered species and wildlife refuges
  - ✓ Is more effective with climate change
  - ✓ Reduces local flood risk
  - ✓ Help to diversify rural economies







Shasta (USBR)

Oroville (DWR)

Folsom (USBR)

Sites (Local)

Sacramento

2

Sac River /  
West Delta

1

- Sac River
- Delta Cross Channel
- Mokelumne River
- Old & Middle Rivers

3

San Joaquin River

Pittsburg

Ocean/Tidal

Stockton

High Salinity

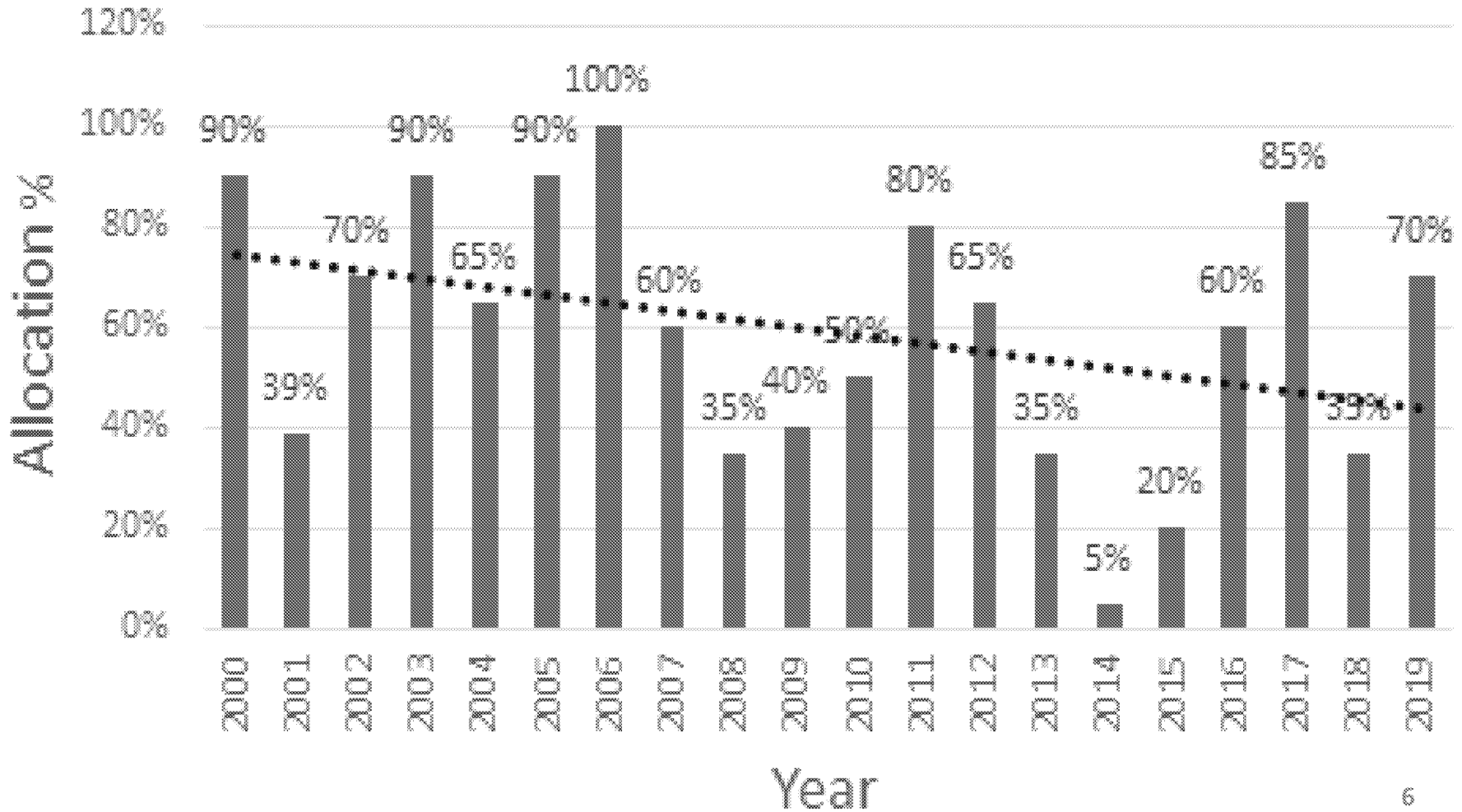
Reduced Pumping  
When Smelt, or migrating  
juvenile Salmonids are Present

SWP Pumps  
(DWR)

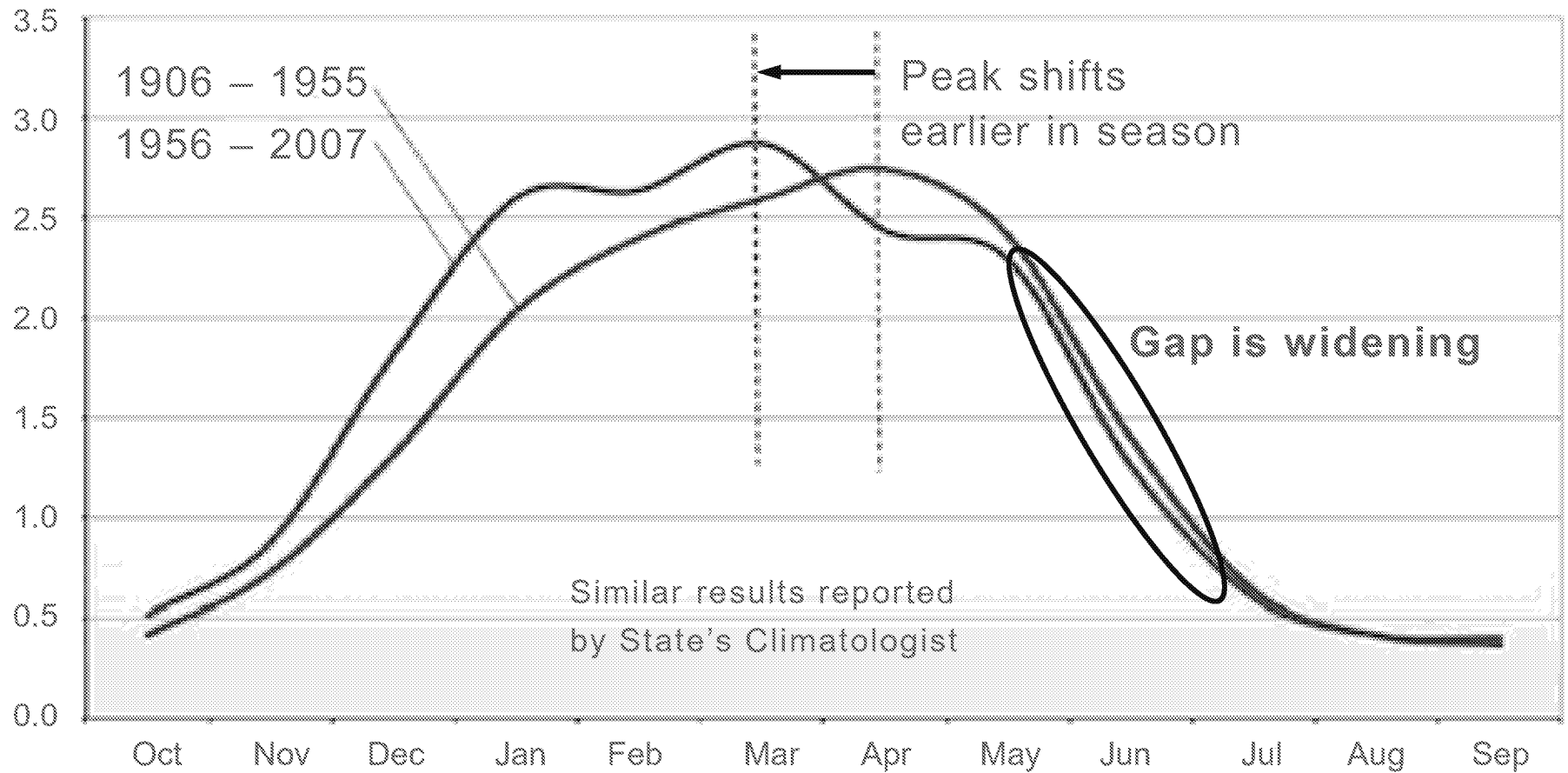
CVP Pumps  
(USBR)

Tracy

State Water Project's Allocations: Year 2000 through 2019  
(as % of contract deliveries):

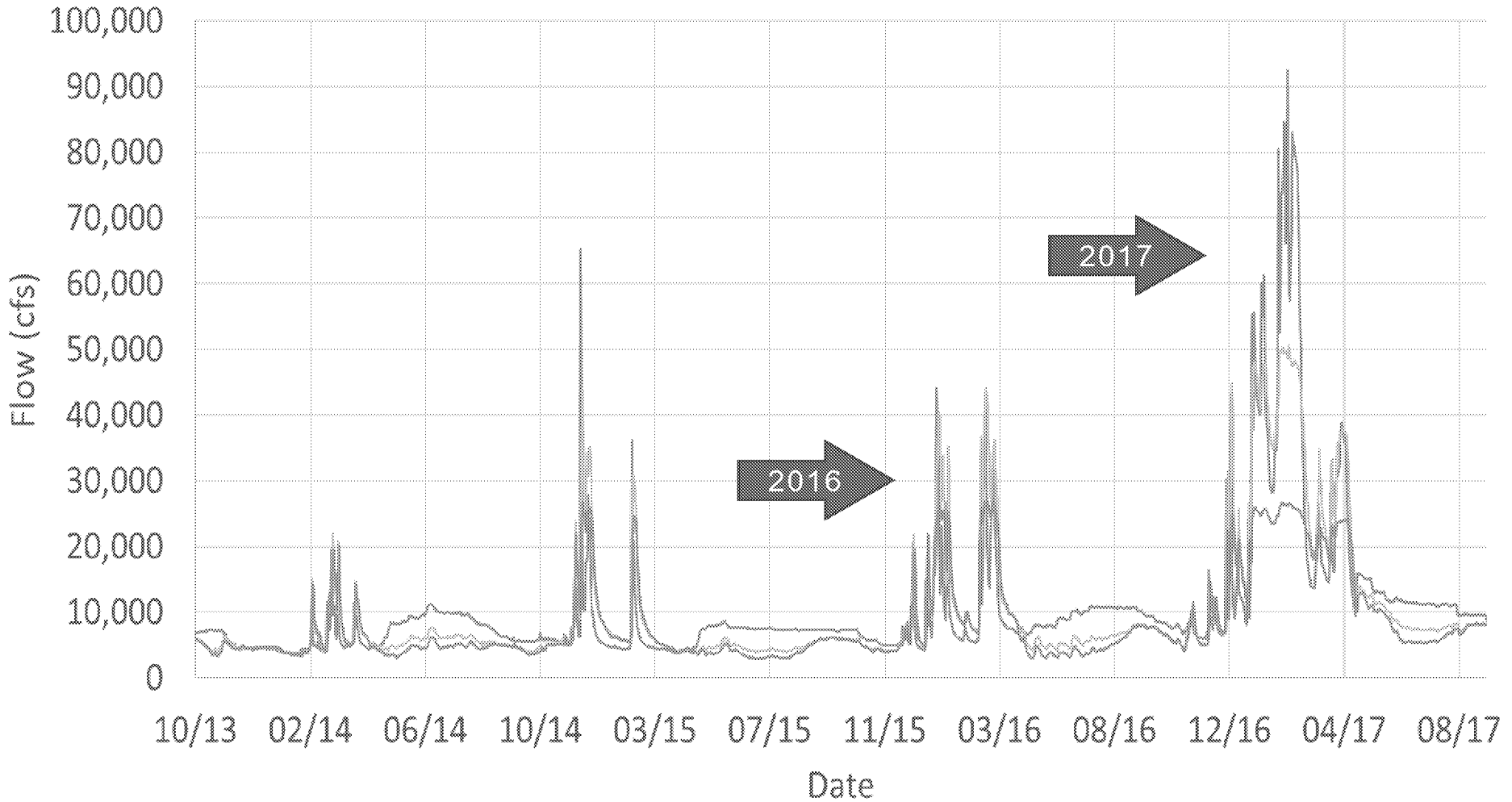


Runoff (million acre-feet)

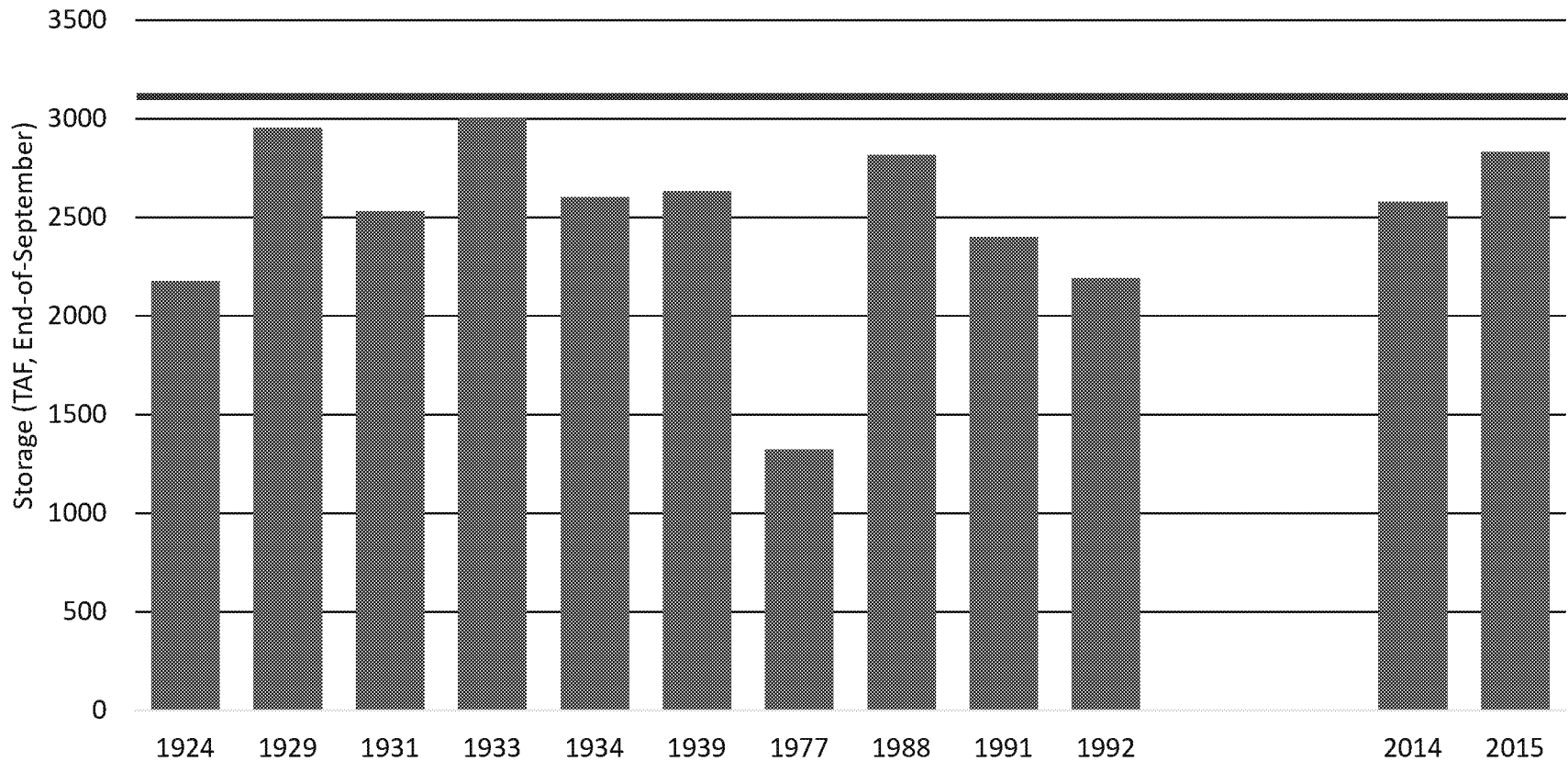


## Daily Sacramento River Flows: 2013 through 2017

— Sac R Abv Bend Bridge    — Sac R at Colusa    — Sac R Below Wilkins Slough



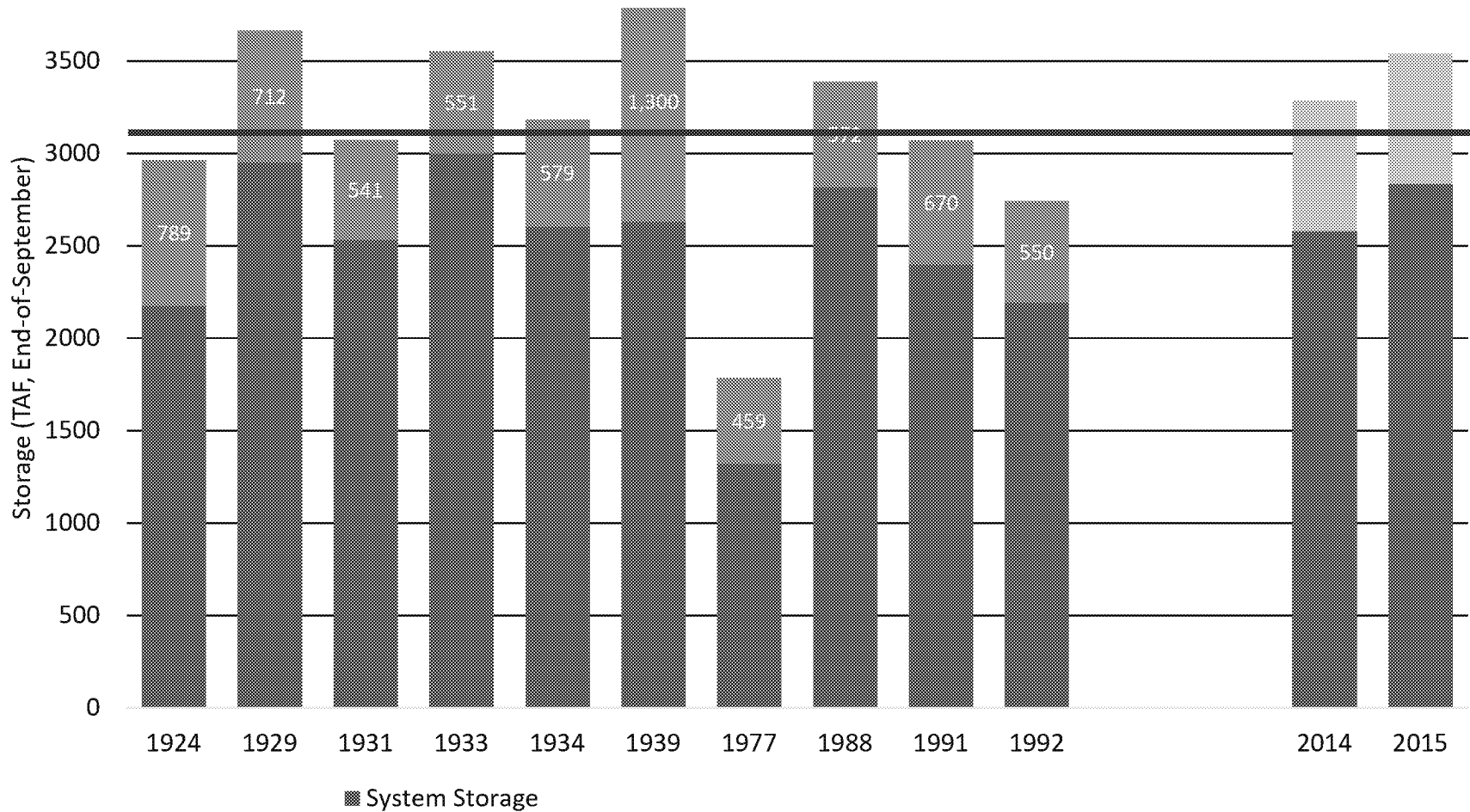
## Combined Storage During Extremely Dry Conditions (Shasta, Oroville, Folsom)



— Level at which DWR and Reclamation submitted a Temporary Urgency Change Petition on January 29, 2014



## Combined Storage During Extremely Dry Conditions (Shasta, Oroville, Folsom, & Sites)



— Level at which DWR and Reclamation submitted a Temporary Urgency Change Petition on January 29, 2014

## Lessons Learned from 2012-2016 Drought



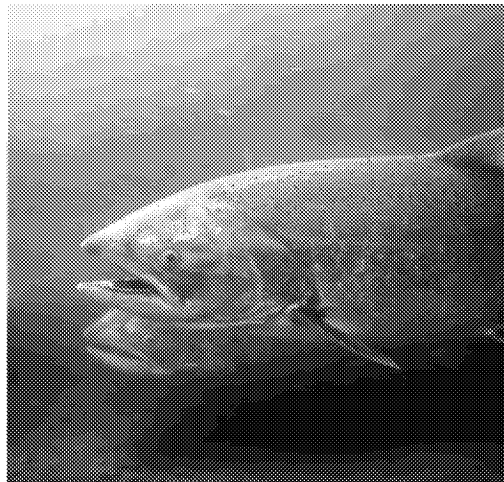
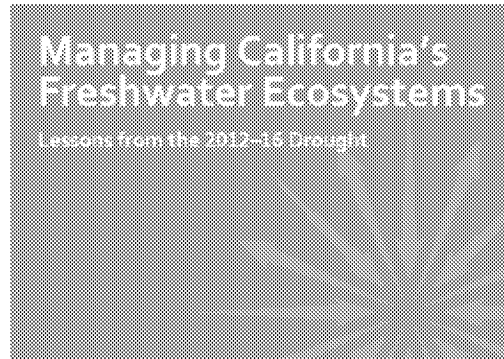
PPIC

PUBLIC POLICY  
INSTITUTE OF CALIFORNIA

NOVEMBER 2017

Jeffrey Mount,  
Brian Gray,  
Caitrin Chappella,  
Greg Gartrall,  
Yad Grantham,  
Peter Moyle,  
Nathaniel Seary,  
Leon Szepetycki,  
Barton "Buzz"  
Thompson  
with research support from  
Juliana Kuzminovic

*Supported with funding  
from the Doh and  
Charles Lubbenell  
Foundations, the S. D.  
Bechtel Jr. Foundation,  
the US Environmental  
Protection Agency, and  
the Water Foundation*



1. Better accounting of water for the environment
2. Develop environmental drought management plans
3. Create flexibly managed ecosystem water budgets
  - “rigid environmental flow rules and complex approval systems inhibited adaptation.”
  - “management functioned best where there were well defined water allocations for ecosystems”





# How Will Sites Work?

- Diverts stormwater when:
  - ✓ All regulatory measures are met
  - ✓ All water rights are protected
  - ✓ Key ecologic services are completed
- Cooperatively operates with existing reservoirs
- Releases water when and where it can provide the greatest ecologic values *and water supply benefits*



# Sacramento River – Flood Flow



# How Sites Works?

# Through Partnerships

## Authority and:

- Operators of the State's water systems (SWP & CVP)
- Water agencies
- CA Water Commission
- Bureau of Reclamation
- Public Resource Agencies
- Environmental interests
- Communities
- Bankers
- Business & Labor

## Benefits:

- Maximizing yield & restores flexibility
- Industry support & improved water supply reliability
- Create environmental benefits
- Create environmental benefits & improve operational flexibility
- Active protection & conservation of fish and wildlife
- Oversight of taxpayer-funded ecosystem water budget
- Local acceptance & support
- Low-cost financing improves affordability
- Cost-effective & accelerated delivery

# Local Job Creation

## Construction:

- 7 years of construction
- Over 500 middle-class jobs/year of construction
- Working with labor to develop local apprenticeship programs

## Post-construction:

- Tackle our backlog of aging infrastructure
- Operate and maintain Project's facilities & Recreation facilities

## Indirect jobs:

- Support local businesses & economy



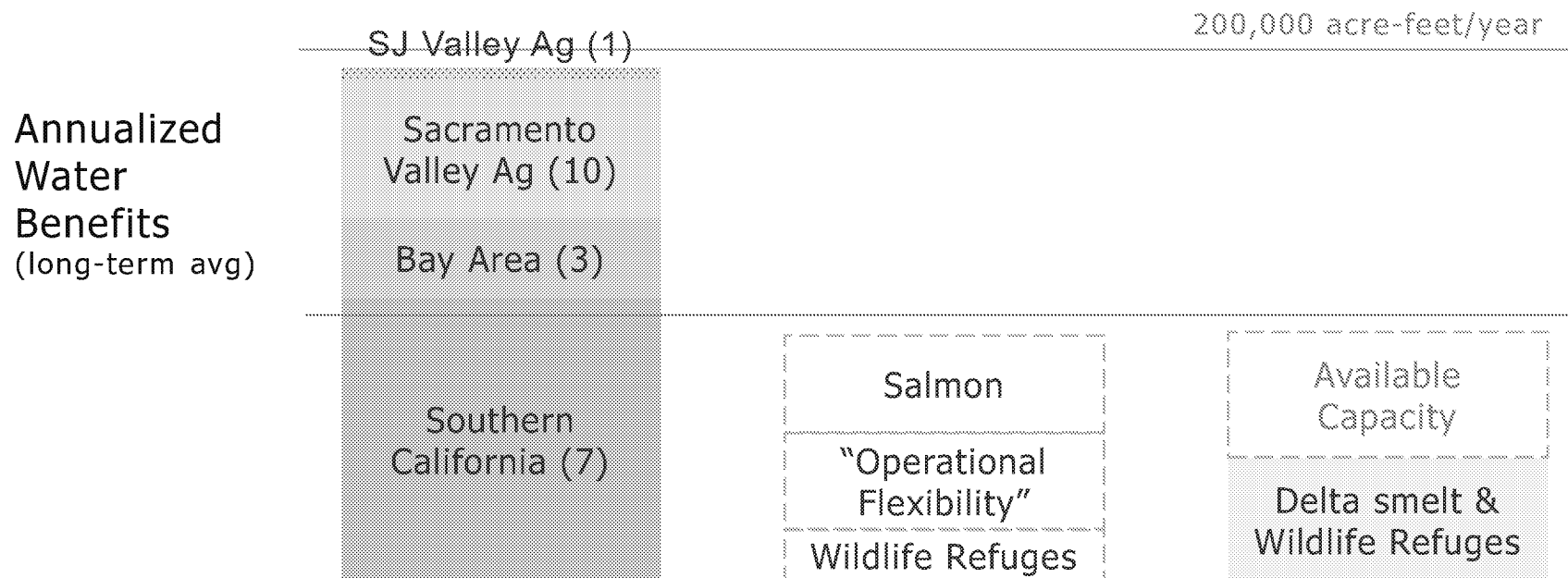


# Local Flood Risk Reduction:

- Detains stormwater runoff in Stone Corral & Funks Creeks
- Reduces peak inflows into Colusa Basin Drain
- Reduced lost agricultural productivity due to flooded lands
- Significant local flood reduction
  - ✓ Maxwell
  - ✓ Williams
  - ✓ Adjacent areas
  - ✓ I-5
  - ✓ County roads
  - ✓ Railroad



# Summary of Available Benefits



Water:	Local (21)	Federal	California
Flood Reduction:	✓	✓	✓
Recreation:	✓	✓	✓
SGMA compliance:	✓		
Economic production:	✓	Rural Development	
Renewable Power:		✓	

# Accomplishments:

1. Authority became the CEQA Lead agency
2. State authorization to use alternative delivery
3. State's Investment: \$ 816.3 m. (\$ 40.8 m for early)
4. \$ 449.2 m USDA conditional construction loan
5. Federal funding (WIIN Act)
6. Strong support
  - Water industry
  - Bipartisan - 43 CA Congressional Reps
  - Business and labor

# Questions?





---

Locations: **HDR's Natomas Office**  
2379 Gateway Oaks Drive #200, Sacramento, CA 95833

**Colusa County Public Works Department**  
1215 Market Street, Colusa, CA 95932

Board Chair: Fritz Durst (Reclamation District 108)  
Board Vice-Chair: Gray Allen (Placer County Water Agency/City of Roseville)  
ResComm Chair: Doug Headrick (San Bernardino Valley Municipal Water District)  
ResComm Vice-Chair: Thad Bettner (Glenn-Colusa Irrigation District)  
Treasurer: Jamie Traynham (Davis Water District)

## **Workshop AGENDA**

**NO ACTION WILL BE TAKEN**

### **CALL TO ORDER:**

**1. General:**

- Introductions.
- Introductory remarks.

**2. Status:**

- 2.1 Operations Considerations Status.
- 2.2 Value Planning Status.
- 2.3 Operations and Repayment Status.
  - Simplified Repayment Tool.
- 2.4 Near-term Implementation.

**3. Near-term Implementation.**

**4. Recap & Adjourn:**

- 4.1 Next Steps.

### **ADJOURN**

PERIOD OF PUBLIC COMMENT: Any person may speak about any subject of concern, provided it is within the jurisdiction of the Directors and Reservoir Committee and is not already on today's agenda. The total amount of time allotted for receiving such public communication shall be limited to a total of 10 minutes per issue and each individual or group will be limited to no more than 5 minutes each within the 15 minutes allocated per issue. **Note:** No action shall be taken on comments made under this comment period.

ADA COMPLIANCE: Upon request, Agendas will be made available in alternative formats to accommodate persons with disabilities. In addition, any person with a disability who requires a modification or accommodation to participate or attend this meeting may request necessary accommodation. Please make your request to the Board Clerk, specifying your disability, the format in which you would like to receive this Agenda and any other accommodation required no later than 24 hours prior to the start of the meeting.

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**From:** Alicia Forsythe [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A6CDF06A7E904B65BAA21702A82AD329-AFORSYTHE]  
**Sent:** 11/12/2019 10:37:43 AM  
**To:** John Spranza (john.spranza@hdrinc.com) [john.spranza@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]  
**Subject:** Sites - Catch up on Outstanding Action Items  
**Attachments:** 20191030\_Env Work Group\_Action Item Tracker.docx; 20191030\_Joint\_Aquatics\_Work Group\_Action Item Tracker.docx  
**Location:** HDR  
**Start:** 11/13/2019 11:00:00 AM  
**End:** 11/13/2019 12:00:00 PM  
**Show Time As:** Tentative

**Required Attendees:** John Spranza (john.spranza@hdrinc.com); Laurie Warner Herson

Let's catch up on the outstanding action items in the attached and the ones below from the NRDC meeting.

Revised Action Items:

1. Schedule a terrestrial focused meeting to focus on (among other topics): (1) terrestrial species and habitat impacts; (2) impacts to refuge and refuge easements; (3) impacts to giant garter snake; and (4) mitigation strategy for terrestrial species.
2. Look at possibility of releasing the Daily Model. (Note, I talked with the team on this late last week. We are scheduling an internal Sites discussion on the possibility of releasing the model along with the timing and what documentation should accompany a release. I should have more info on this in about 2 weeks.)
3. Can Sites add the Yolo Bypass to the floodplain modeling effort? (Note, we are already planning on adding the Sutter Bypass to the floodplain modeling effort, but had not planned on including Yolo. So this action item is focused on Yolo as we had not originally planned on including the Yolo Bypass in the floodplain modeling effort. Sutter will be included.)
4. Continue discussion on effects to salmonid survival throughout the Sacramento River and Delta. – Doug sent over papers on 10/9.
5. Email copy of PPT presentation from meeting. – Completed with this email.
6. Provide deliveries and current demands in the Glenn-Colusa and Tehama-Colusa canals downstream of a prospective Sites Reservoir -- what volume of water annually could Sites serve to current water users on the Glenn-Colusa and Tehama-Colusa canals?

# Environmental Feasibility Summary Report Outline

1. Introduction
  - a. Purpose of the Report
  - b. Background (inc. brief CALFED discussion)
2. CEQA/NEPA process to date
  - a. Scoping
  - b. Draft EIR/EIS Circulation
3. Reclamation Feasibility Report
  - a. NODOS Draft Feasibility Report Process
  - b. Identification of NED and Locally Preferred Project
4. Project as Addressed in the EIR/EIS and Feasibility Report
  - a. Brief Discussion and Table of Alternatives
  - b. Impacts and Mitigation
5. Summary of Comments Received on the Draft EIR/EIS and Approach to Respond to Comments
6. Changed Conditions
  - a. Right-sizing the Project – Phased Implementation
  - b. Response to Regulatory Concerns (CDFW, etc.)
  - c. Changes in Facilities
  - d. Qualitative Discussion of Impacts and Mitigation Relative to Prior Analysis
7. Environmental Feasibility
  - a. Authority Environmental Feasibility Criteria
  - b. Federal Feasibility
8. Conclusions

Topic: **Sites Reservoir Project, Phase 2**

Subject: **Monthly Status Report**

Report Period: **2019 October**

---

**Monthly Status Summary:**

The development of the Sites Project continues to make progress in the critical areas associated with the reprioritized Phase 2 (2019) budget and work plan, including the following activities:

- Continued detailed consultations with CDFW on pre-application permit consultation.
- Continued supporting Reclamation on completion of their Feasibility Report, including the coordination of permit applications and access with Reclamation for the NODOS Feasibility Geotechnical Investigations.
- Held a Joint Reservoir Committee and Authority Board work shop on September 12, 2019 to discuss the Phase 2 (2020-2021) Work Plan, Operations and Repayment that are related to the project's Affordability.

The following highlights the status of activities conducted during the month:

**Coordination with Reclamation:**

- Continued coordination of Project activities funded by Reclamation and those funded by the Authority.
- Continued coordination and support for feasibility geotechnical investigation.

**Permitting and Environmental Planning:**

- Continued development of the federal Biological Assessment, response to comments on the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and development of the Final EIR/EIS. Reinitiated meetings with the National Marine Fisheries Service.
- Continued pre-construction permit discussions with CDFW on both construction and operational effects of the project to state-listed and state fully-protected species.
- Completed the environmental analyses and permit applications and successfully obtained permits and approvals to undertake additional geotechnical testing and sampling work that will advance the design and the Reclamation Feasibility Report's cost estimate. The National Historic Preservation Act consultation was completed on September 26, 2019. The Geotechnical Biological Opinion was completed on September 30, 2019. Began implementing the environmental commitments and monitoring activities for drilling which initiated on October 2, 2019.
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects.
- Completed AB 52 coordination with the Cachil Dehe Band of Wintun Indians and the Yoche Dehe Wintun Nation for geotechnical investigations including tribal cultural sensitivity training and began field monitoring.

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Status:	Issued for Use	Prepared:	RDT, JAT, KMS	Phase:	2	Version:	A
Purpose:	Informational	QA/QC:	Watson	Date:	2019 November 21		
Caveat:	Subject to change	Authority Agent:	Watson	Ref/File #:	10211-016.000		
Notes:				Page:	1	of	2

- Initiated a water rights coordination meeting with Sites staff, Integration Leads and water rights contractors.

**Engineering:**

- Continued to advance the near-term geotechnical exploration program to support the federal Feasibility Report's cost estimate.
- Continue to advance the affordability analysis and to document the process and key assumptions.
- Initiated development of a draft Principles and Requirements to guide the development of Feasibility Studies.

**Real Estate, Stakeholder Engagement & Public Outreach:**

Continued ongoing coordination efforts with landowners, local community members, state and federal elected officials, government agencies and coalitions of regional and statewide organizations including the following activities:

- Responded to landowner requests for project information, facilitated coordination activities with local government agencies and organizations and planned for future landowner, stakeholders and general public outreach activities and events.
- Coordinated Temporary Right of Entry (TROE) activities in support of the 2019 focused Geotechnical field studies scheduled for October 2019.
- Conducted project site tours/presentations with project participants including Metropolitan Water District and the Ag Leadership DC Exchange Program.
- Facilitated a Washington DC trip to meet and discuss the project with key elected officials and legislative staff, Department of Interior and Reclamation leadership and Office of Management and Budget staff.

**Program Management & Administration:**

- Submitted Invoice Number 1 and associated Progress Report to the California Water Commission.
- Presented results from analysis of operations and repayment (affordability) scenarios including operations, engineering and finance input for presentation at September workshop for Reservoir Committee and Authority Board.
- Developed standard operating procedures related to invoice approval, consultant change management, consultant staff approval and continued development of additional controls processes and procedures.
- Presented a draft Phase 2 (2020-2021) work plan at workshop for both Reservoir Committee and Authority Board.
- Coordinated review of key draft documents including a successor Participation Agreement to the Phase 2 (2019) agreement, Bank Line of Credit RFP and Plan of Finance with respective work groups.

---

**From:** Kevin Spesert [kspesert@sitesproject.org]  
**Sent:** 11/13/2019 10:25:49 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**Subject:** RE: Sites, ecosystem water budgets....

No worries...lets plan on next week...maybe Wednesday...

This weekend is my Mom's 70<sup>th</sup> birthday and my wife's birthday...we will be going up to Lake Almanor Sunday thru Tuesday to celebrate...

Kevin

## Kevin Spesert

Real Estate & Public Affairs Manager  
Sites Project Authority  
Phone: 530.632.4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)  
Web: [www.SitesProject.org](http://www.SitesProject.org)  
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122 Old Hwy 99W  
Maxwell, CA 95955

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**From:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Sent:** Wednesday, November 13, 2019 9:53 AM  
**To:** Kevin Spesert <kspesert@sitesproject.org>  
**Subject:** RE: Sites, ecosystem water budgets....

I was actually planning to work from home tomorrow as I have a dentist appointment. I could come in from 8 to about 9:45 AM. Would that work for you? I can actually be here around 7 AM but I realize that's pretty early.

I would say that Monday would work too, but we have a CDFW meeting on Monday so I suspect I will be a little preoccupied.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Kevin Spesert <kspesert@sitesproject.org>  
**Sent:** Wednesday, November 13, 2019 9:18 AM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>  
**Subject:** RE: Sites, ecosystem water budgets....

That's a great idea...I am going to be in Natomas tomorrow...do you have some time to meet up and start to develop a rough draft that we can get over to the graphics folks to layout?

Thanks!

Kevin

## Kevin Spesert

Real Estate & Public Affairs Manager  
Sites Project Authority  
Phone: 530.632.4071  
Email: [kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)  
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**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Sent:** Wednesday, November 13, 2019 9:07 AM  
**To:** Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>  
**Subject:** FW: Sites, ecosystem water budgets....

FYI. Can we work together to draft something up?

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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---

**From:** David Guy <[dguy@norcalwater.org](mailto:dguy@norcalwater.org)>  
**Sent:** Wednesday, November 13, 2019 8:42 AM  
**To:** Fritz Durst ([fritz.durst@gmail.com](mailto:fritz.durst@gmail.com)) <[fritz.durst@gmail.com](mailto:fritz.durst@gmail.com)>; Jim Watson <[jwatson@sitesproject.org](mailto:jwatson@sitesproject.org)>; Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>  
**Subject:** Sites, ecosystem water budgets....

Thanks all for a good discussion on Sites Reservoir last evening....to follow this discussion, you have excellent documents on both the dry years and environmental water that are attached, which as you know we use a lot in various settings. Have you done anything that articulates more specifically your thoughts on supporting an ecosystem water budget as you articulated last evening? It seems like a blending of these two documents to me and an opportunity to cast the project as an asset than an impact or mitigation.....With the PPIC folks rolling out its new report and Ali serving on the PPIC panel, I think a document like this would be very helpful to have available for their rollout in early December.....it would also support our larger articulation of freshwater ecosystem budgets (see attached), which we will have more specific descriptions for each elements (i.e., Sites). We are happy to help in any way you think valuable. Thanks again for making a compelling case for Sites....





**David J. Guy**  
President  
Northern California Water Association  
(916) 442-8333

---

**From:** Rob Thomson [rthomson@sitesproject.org]  
**Sent:** 11/13/2018 9:51:49 PM  
**To:** Evan Sawyer [Evan.Sawyer@noaa.gov]  
**Subject:** Fwd: Sites Project Meeting on 11/14  
**Attachments:** Draft Sites Modeling 11\_14\_18.pptx; ATT00001.htm

Draft slides for our discussion

Rob Thomson  
805-689-5854

Begin forwarded message:

**From:** "Tull, Robert/SAC" <Robert.Tull@jacobs.com>  
**To:** "Rob Thomson" <rthomson@sitesproject.org>  
**Subject:** RE: Sites Project Meeting on 11/14

Rob,  
See attached draft slides.  
We can revise in the morning as needed.  
Thanks,  
Rob

---

**From:** Rob Thomson <rthomson@sitesproject.org>  
**Sent:** Tuesday, November 13, 2018 12:34 PM  
**To:** 'Evan Sawyer (Evan.Sawyer@noaa.gov)' <Evan.Sawyer@noaa.gov>  
**Cc:** 'Mike Dietl (mdietl@usbr.gov)' <mdietl@usbr.gov>; 'Johns, Jerry (jjohnswater@gmail.com)' <jjohnswater@gmail.com>; 'Jim Lecky - (jim.lecky@icf.com)' <jim.lecky@icf.com>; RTull@ch2m.com  
**Subject:** [EXTERNAL] Sites Project Meeting on 11/14

Evan – thanks for the call.

Attached is our current draft of taking points and thoughts regarding baseline and affected area. I will forward the Jacobs briefing when I get it this afternoon. I have also attached a draft work order that is being reviewed for funding to get ICF to start working on the BA

I've also mocked up an agenda for us.

See you tomorrow.

Rob Thomson  
805-689-5854

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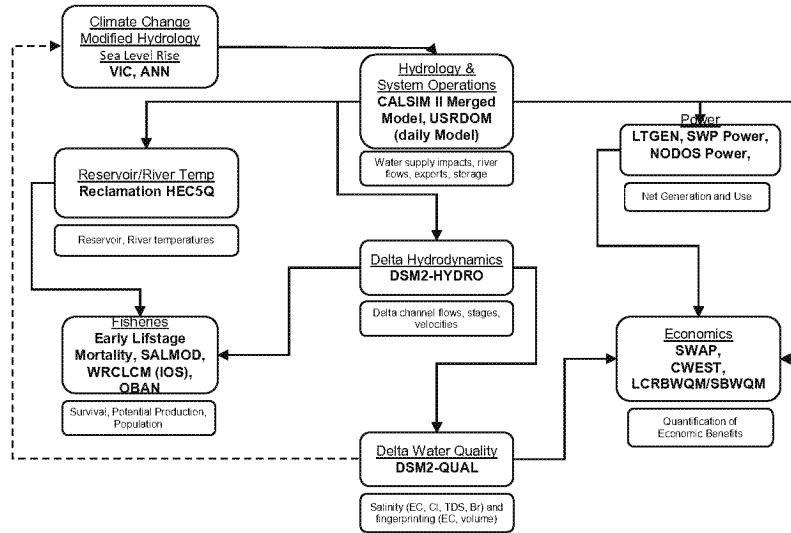
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Draft, Subject to Change

# Sites Project Analytical Modeling Framework



## CalSim II SWP and CVP Hydrology and Operations

- Simulates monthly operations of the SWP, CVP, and other facilities in the Central Valley and approximates changes in storage reservoirs, river flows, and exports from the Delta.
- Inputs describe assumptions of hydrology at projected levels of land and water use, existing and proposed facilities, and riverine and Delta regulatory conditions.
- SWP and CVP operations are consistent with the Biological Opinions on the Continued Long-term Operations of the Central Valley Project and the State Water Project

## USRDOM Upper Sacramento River Daily Operations Model

- Simulates daily reservoir operations and daily river flows for the upper Sacramento River from Shasta Dam to Knights Landing
- Includes facilities and tributaries within this region
  - Trinity River section of the Central Valley Project
  - Sutter Bypass region (and other bypasses)
  - Conveyance and storage facilities of the proposed Project.
- Applied with use of CALSIM II model
- Significant recent enhancements to extend daily operations through 2018



## Reclamation HEC5Q Reservoir/River Temperature Model

- Reclamation) developed applications of the US Army Corps of Engineers HEC5Q model for evaluation of water temperatures on the Sacramento River and American Rivers
- Substantial revisions to these models for use in the evaluation of Coordinated Long-Term Operations of the Central Valley Project and State Water Project.
- The HEC5Q model was designed to work with the model results of the CalSim-II model and was calibrated for historical meteorological conditions.
- Procedures established to incorporate operational assumptions related to selective withdrawal with Shasta Lake temperature control device.

## Early Life stage Mortality Model

- The Reclamation Salmon Mortality Model uses temperature results from the Reclamation HEC5Q Temperature Model
- The model estimates potential impacts on the temperature-related mortality of the early life-stages of salmon due to the expected changes in operations
- The model computes percentages of salmon spawning losses based on the simulated water temperature data, temperature-exposure mortality criteria for three salmon life stages (pre-spawned eggs, fertilized eggs, and pre-emergent fry) and spawning distribution data.

## SALMOD

### Salmon Model of the Sacramento River

- SALMOD simulates the population dynamics of the freshwater life stages of anadromous Chinook salmon.
- Model processes include spawning (egg deposition), egg and alevin development and growth, mortality, and movement (due to habitat limitation, freshets, and seasonal stimuli).
- Pre-smolts do not graduate to the smolt stage within the model. Instead, they exit the study area and the population is reinitialized with survey estimates of spawning adults each biological year.
- Spatially explicit model in which habitat quality and carrying capacity are characterized by the hydraulic and thermal properties of individual mesohabitats, which serve as spatial computational units in the model.
- Input variables (e.g., streamflow, water temperature, number and distribution of adult spawners) are represented by their weekly average values.

## DSM2 HYDRO Delta Simulation Model 2

- Simulates one-dimensional hydrodynamics of the Sacramento–San Joaquin Delta
- Provides Delta channel flows, stages, and cross-section average velocities under tidal conditions.
- DSM2 is simulated on a 15-minute time step to address the changing tidal dynamics of the Delta system
- One-dimensional and simplified boundary conditions limit use of results to monthly statistics.
- Use CalSim II output.

## DSM2 - QUAL Delta Salinity Model

- Simulates salinity based on Electrical Conductivity (EC) calibration
- One-dimensional and simplified boundary conditions limit use of results to monthly statistics.
- Uses outputs from DSM2 HYDRO.

## Daily Modeling for Sites Reservoir Project

- Objective:
  - Provide information and help develop further understanding of the interaction of the proposed Sites Reservoir Project over a wide range of potential flow conditions in the Sacramento River.
- Step 1:
  - Extension of the HindCast Upper Sacramento River Daily Operations Model (USRDOM) for WY 1964 – Spring 2018.
- Step 2:
  - Developing a spreadsheet tool to assess flow availability and apply various diversion criteria to determine the potential divertible quantity of flow for the Sites Project.
  - Assess potential ecosystem benefits of coordinated Sites operations



## **USRDOM HindCast Extension for WY 1964 – Spring 2018**

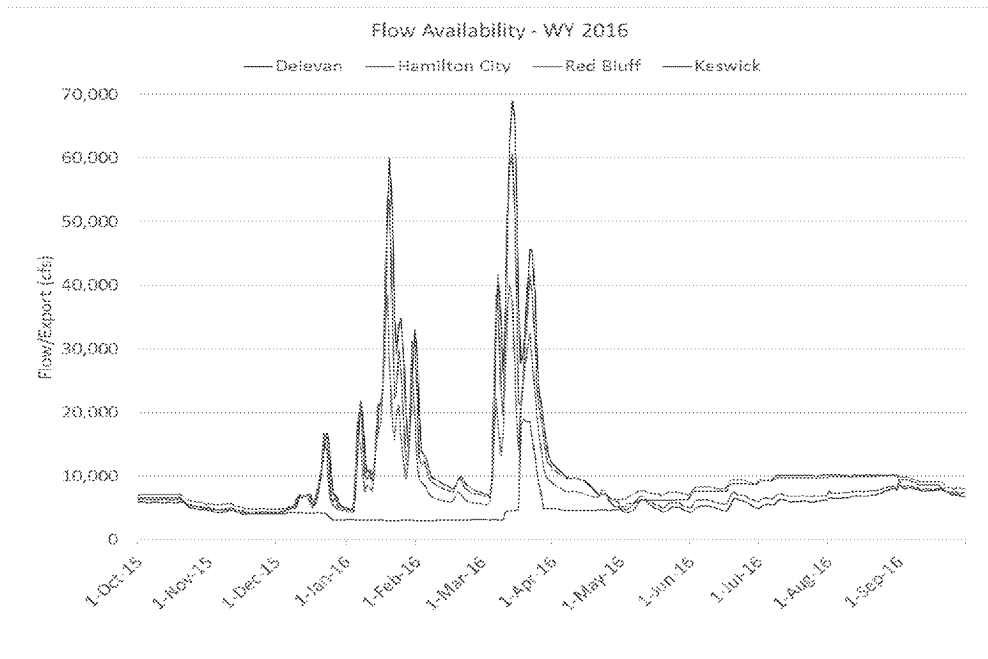
- HindCast Upper Sacramento River Daily Operations Model (USRDOM)
  - Simulates daily flow conditions in the Sacramento River.
  - Uses available historical gage records and reservoir operations records.
- The model has been extended to May 31<sup>st</sup>, 2018
- Hydrology datasets were updated using data from USGS and USBR
- Flow calibration methodology has been refined to account for ungaged flows and gage error



## Daily Flow Available/Divertible Spreadsheet

- Developing a spreadsheet tool to determine daily flow availability for Sites Reservoir diversions
  - Operations information linked to USRDOM daily flow hydrographs
- Flow availability computed using historical records and accounting for current flow requirements such as:
  - Delta balance conditions from COA reports
  - Term 91 conditions
  - Delta outflow criteria
  - X2 requirements, etc.
- Data compiled for WY 2008 – Spring 2018
- Tool to be used for calculating divertible quantities and assessing storage potentials with probability analysis

# Flow Hydrograph Example



---

**From:** Rob Thomson [rthomson@sitesproject.org]  
**Sent:** 10/21/2018 2:46:21 PM  
**To:** 'Evan Sawyer - NOAA Federal' [evan.sawyer@noaa.gov]  
**CC:** 'Mike Dietl (mdietl@usbr.gov)' [mdietl@usbr.gov]; 'Jim Lecky - (jim.lecky@icf.com)' [jim.lecky@icf.com]; 'Johns, Jerry (jjohnswater@gmail.com)' [jjohnswater@gmail.com]; 'Cathy Marcinkevage (cathy.marcinkevage@noaa.gov)' [cathy.marcinkevage@noaa.gov]  
**Subject:** RE: Agenda development [10/24]  
**Attachments:** Benefits-Detriments 100418.docx

Agenda Ideas –

- Introductions
- Overall goals of these pre formal consultation meetings
  - Develop a common understanding of the Sites Project facilities, potential operations, role of Reclamation, overall schedule (and drivers)
  - Develop a Sites Project Description, BA, and Biological Opinions that result in “No-Jeopardy” to ESA species.
- Topics for this meeting
  - Updates to organization, funding, schedule, facilities, operations
  - Points of contact (Sites, NMFS, Reclamation, other federal agencies)
  - Discussion of the tasks ahead and desired schedule
  - Benefits – detriments table
- Proposed overall schedule for completing the BA/BO Process
  - WSIP and WIIN requirements for completion of the BiOps by the end of 2021.
- NMFW participation in selecting the consultants that will develop the BA
- Begin discussion of tasks ahead and more detailed schedule
- Set topics, dates, times and locations for the next few meetings

I'll know a little more about the 'approved' schedule Monday afternoon.

**From:** Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>  
**Sent:** Thursday, October 18, 2018 3:40 PM  
**To:** Rob Thomson <rthomson@sitesproject.org>  
**Cc:** Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>  
**Subject:** Agenda development [10/24]

Hi Rob,

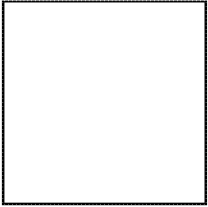
Do you have thoughts regarding an agenda for the meeting next week?

It probably makes sense to start with any project updates or changes, as well as a discussion of the anticipated BA timeline. As far as a technical discussion goes, our understanding of the project hasn't really changed since we submitted our comment letter on the DEIS (attached). That letter was written with the future ESA consultation in mind and in terms of developing the right type of analyses for the BA. So for NMFS that letter, and the broad description of the analyses need to assess impacts to species therein, would be a good place to start a discussion. Thoughts?

Thanks,  
Evan

--  
Evan Bing Sawyer,  
Natural Resource Management Specialist

NOAA Fisheries West Coast Region  
U.S. Department of Commerce  
Office: (916) 930-3656  
[Evan.Sawyer@noaa.gov](mailto:Evan.Sawyer@noaa.gov)  
[www.westcoast.fisheries.noaa.gov](http://www.westcoast.fisheries.noaa.gov)





**Sites Project  
Environmental Benefits/Detriments Summary**

The following summarizes the potential environmental benefits and detriments of the Sites Project.

<b>Item/Issue</b>	<b>Benefit</b>	<b>Detriment</b>
<b><i>Project Facilities</i></b>		
Diversion Screens	Compliant with all existing regulations	Increases locations for predators. Incidental take of outmigrating salmonids – 3-5%
Pipelines		Adversely impacts GGS habitat in ditches in and adjacent to construction corridor
Powerlines		Creates new impact potential for bird movement. Cross valley alignment is a much greater risk for migrating birds
Reservoir(s)	Provides new aquatic habitat for waterfowl, water source for wildlife	Removes 14,000 acres of winter foraging habitat for golden eagles. Removes about 200 mature oak trees. Converts potential CRLF upland and riparian habitats to deep water lake habitat
<b><i>Salmonids</i></b>		
Increase in travel time for out migrating chinook and steelhead smolts	None	Increase in time for predation and other mortality to occur. See flow-mortality analysis in WSIP Appeal
Increase in flow stability in the spawning reach of the Upper Sacramento River from Red Bluff to Shasta	Reduction in redd dewatering	
Decrease in water temperature below Keswick particularly in drier years	Increase length of anticipated successful spawning area. Reduction in temperature of the critical reach for winter run. See SALMOD and OBAN results in WSIP Appeal	

Decrease in water surface elevation in the Upper Sacramento River below Red Bluff due to water diversion		Increase in travel time. Reduction on rearing habitat – particularly in the reach near Hamilton City. See OBAN results in WSIP Appeal
Change in the amount and duration of floodplain inundation	May increase frequency of inundation in drier years if public /environmental benefit water is allocated to the activation of weir notches. Not evaluated	WSIP Protest analysis identified a slight reduction in inundation due to water diversion in wetter periods. Diversions would have a slight adverse effect in drier periods. See floodplain inundation analysis in WSIP Appeal
<b><i>Pelagic Native Fish</i></b>		
Late Summer releases through the Colusa Basin Drain (or Freemont Weir Notch?) to the Yolo Basin Toe Drain	Would add lower trophic level food to Cache Slough to benefit Delta smelt. Limited ecological analysis	
Late Spring Diversions		Potentially adversely affect Longfin Smelt minimized by spring outflow compliance from CA WaterFix
<b><i>Sturgeon</i></b>		
<b><i>Giant Garter Snake</i></b>		
Construction of the Delevan Pipeline/ Terminal Regulating Reservoir and other facilities		Could adversely impact GGS habitat and individuals
Late Summer releases through the Colusa Basin Drain	Would increase water levels and flow rates in the Colusa Basin drain for the short periods to benefit Delta smelt	
<b><i>Golden Eagle/Bald Eagle</i></b>		

Inundation of 14,000 acres of Antelope Valley	Converts Golden Eagle winter range habitat to potentially support Bald Eagles	Removes 14000 acres of winter range habitat
Dedication of 'Buffer Zone' lands to Conservation Easement - Rangeland	Protects buffer zone lands for rangeland and eagles	
<b><i>Waterfowl</i></b>		
Supplies 40,000 acre/ft/yr to refuges		
<b><i>CA Red-legged frog</i></b>		
		Removes upland and ephemeral wetland habitat in Antelope Valley
		Removes upland and ephemeral wetland habitat along pipeline corridor, pump stations and other facilities east of the Antelope Valley and west of the irrigated agricultural areas in the Sacramento Valley

---

**From:** Rob Thomson [rthomson@sitesproject.org]  
**Sent:** 11/13/2018 12:33:50 PM  
**To:** 'Evan Sawyer (Evan.Sawyer@noaa.gov)' [Evan.Sawyer@noaa.gov]  
**CC:** 'Mike Dietl (mdietl@usbr.gov)' [mdietl@usbr.gov]; 'Johns, Jerry (jjohnswater@gmail.com)' [jjohnswater@gmail.com]; 'Jim Lecky - (jim.lecky@icf.com)' [jim.lecky@icf.com]; 'RTull@ch2m.com' [RTull@ch2m.com]  
**Subject:** Sites Project Meeting on 11/14  
**Attachments:** Preliminary Biological Baseline.docx; ICF WO 10.2 Biological Assessment.docx; NMFS-Reclamation-Sites 111418 Meeting.docx

Evan – thanks for the call.

Attached is our current draft of taking points and thoughts regarding baseline and affected area. I will forward the Jacobs briefing when I get it this afternoon. I have also attached a draft work order that is being reviewed for funding to get ICF to start working on the BA

I've also mocked up an agenda for us.

See you tomorrow.

Rob Thomson  
805-689-5854



**NMFS/USFWS/Reclamation/SITES PROJECT AUTHORITY**  
**Pre-consultation Meeting Agenda**  
**November 14, 2018**

**Invited Attendees:**

NMFS – Cathy Marcinkevage, Evan Sawyer, Ali Lane, Page Vick, Jean Castello

USFWS - TBD

Reclamation – Mike Dietl

Sites Project – Rob Thomson, Jerry Johns, Jim Lecky, Rob Tull

**Meeting Objectives**

1. Move toward agreement on key components of the BA for the Sites Project
  - Baseline on which to assess the affects of the Sites Project – discussion based on table provided outlining initial thoughts from Sites Project
  - Affected Area of the Sites Project – discussion based on table provided outlining initial thoughts from Sites Project
  - Available and appropriate tools to assess affects – presentation by Rob Tull and discussion following
2. Status update of the Sites Project
  - Brief presentation available, if required, regarding facilities
  - Brief review of Sites Project consultant selection process and results
3. Next steps
  - Future meetings and contents

# Update of Additional Sites Analyses

February 12, 2018



# Outline

- Objective
- Fish Summary
- Habitat Characteristics
- Hydrology Characteristics
- Analysis

# Objective

- Are there potential effects to the ecologically-important habitat in the Sacramento River because of the diversions to fill Sites Reservoir?
- Are there alternate diversion operations that could alleviate any potential effects?
- Information aids in understanding the hydrologic, fisheries and habitat characteristics of the Sacramento River reach from Red Bluff to Wilkins Slough.
- Should be considered preliminary and limit its use for screening purposes given the coarseness of the information and tools used.

# Fish Summary

			Reach	Red Bluff to Hamilton City		Hamilton City to Delevan		Delevan to Knights Landing		Sutter Bypass			Yolo Bypass		
			Sub-Reach	Overall	Near Diversion	Overall	Near Diversion	Overall	Near Diversion	Overall	Moulton Weir	Colusa Weir	Tisdale Weir	Overall	Fremont Weir
Species	Life Stage	Evaluation Period	Flow-Related Attribute												
Winter Run	Adult Immigration and Holding	Dec-Jul	Stage	Passage/Barriers	N/A	Passage/Barriers	N/A	Passage/Barriers	N/A	N/A	N/A	N/A	N/A	Passage/Barriers	N/A
			Water Temp	Survival, egg viability	N/A	Survival, egg viability	N/A	Survival, egg viability	Survival, egg viability	N/A	N/A	N/A	N/A	Survival, egg viability	N/A
	Spawning, Egg Incubation, and Initial Rearing	Apr-Aug	Depth, velocity, water temp, Habitat available	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Juvenile Rearing and Emigration	Jul-Apr	Stage	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Floodplain Activation/Area	N/A	N/A	N/A	Floodplain Activation/Area	N/A
			Velocity	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	N/A	N/A	N/A	N/A	N/A	N/A
		Water Temp	Survival	N/A	Survival	N/A	Survival	Survival	Survival	N/A	N/A	N/A	Survival	N/A	
Spring Run	Adult Immigration and Holding	Feb-Sep	Stage	Passage/Barriers	N/A	Passage/Barriers	N/A	Passage/Barriers	N/A	N/A	N/A	N/A	N/A	Passage/Barriers	N/A
			Water Temp	Survival, egg viability	N/A	Survival, egg viability	N/A	Survival, egg viability	Survival, egg viability	N/A	N/A	N/A	N/A	Survival, egg viability	N/A
	Spawning, Egg Incubation, and Initial Rearing	Sep-Apr	Depth, velocity, water temp, Habitat available	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Juvenile Rearing and Emigration	All Year	Stage	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Passage/Barriers, Floodplain Activation/Area	Entrainment, Impingement, Predation	Floodplain Activation/Area	N/A	N/A	N/A	Floodplain Activation/Area	N/A
			Velocity	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	N/A	N/A	N/A	N/A	N/A	N/A
		Water Temp	Survival	N/A	Survival	N/A	Survival	Survival	Survival	N/A	N/A	N/A	Survival	N/A	
	Smolt Emigration	Oct-Jun	Stage	Passage/Barriers	Entrainment, Impingement, Predation	Passage/Barriers	Entrainment, Impingement, Predation	Passage/Barriers	Entrainment, Impingement, Predation	Floodplain Activation/Area	N/A	N/A	N/A	Floodplain Activation/Area	N/A
			Velocity	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	Travel time, predation	Entrainment, Impingement, Predation	N/A	N/A	N/A	N/A	N/A	N/A
			Water Temp	Survival	N/A	Survival	N/A	Survival	Survival	N/A	N/A	N/A	Survival	N/A	

# Habitat Characteristics

- Habitat Mapping
- Inundation Area Mapping
- Flow – Inundation Area Analysis
- Secondary Channel Features Mapping

# Habitat Mapping

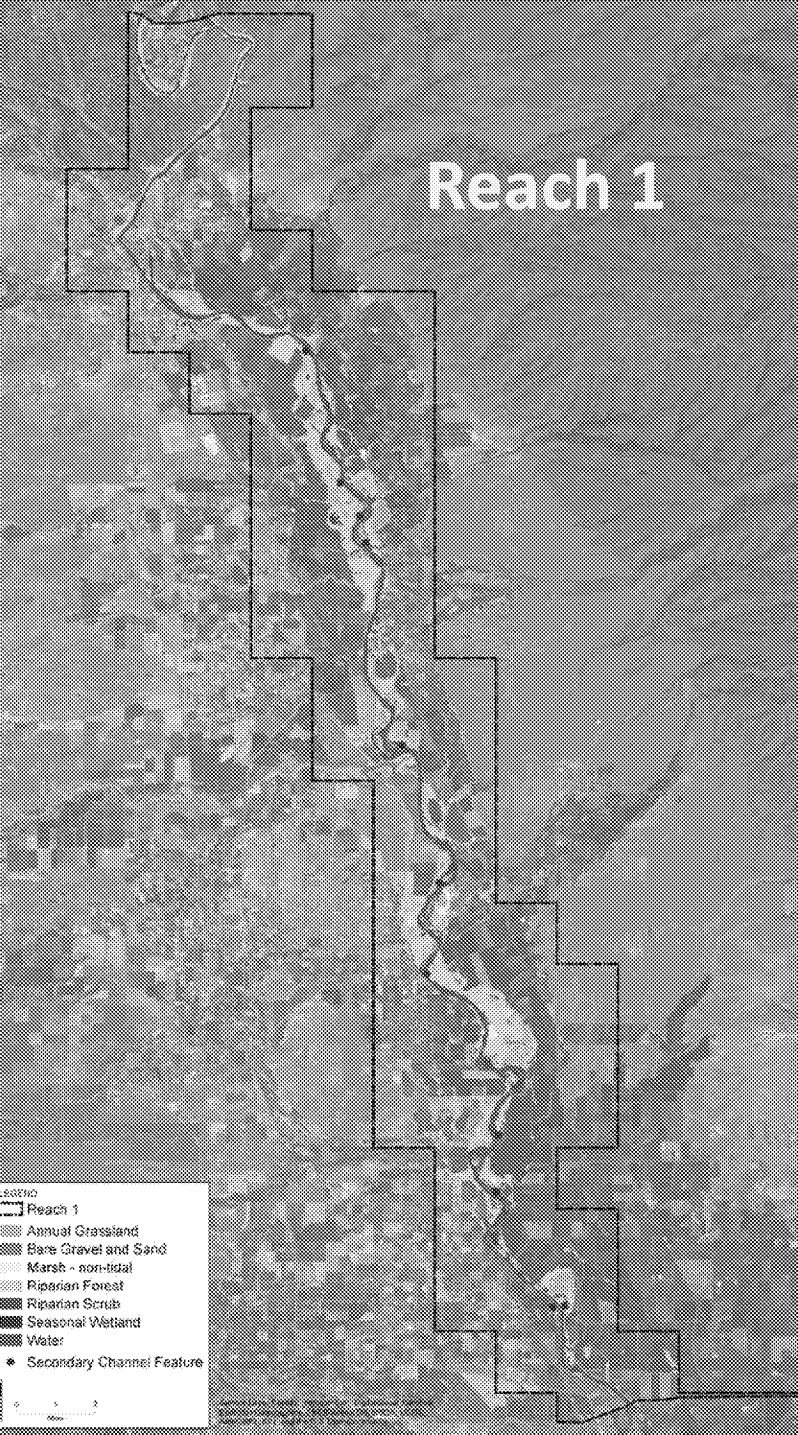
- Ecological framework

Table 3-1. Preliminary Ecological Matrix for Sacramento River Off-Channel Areas

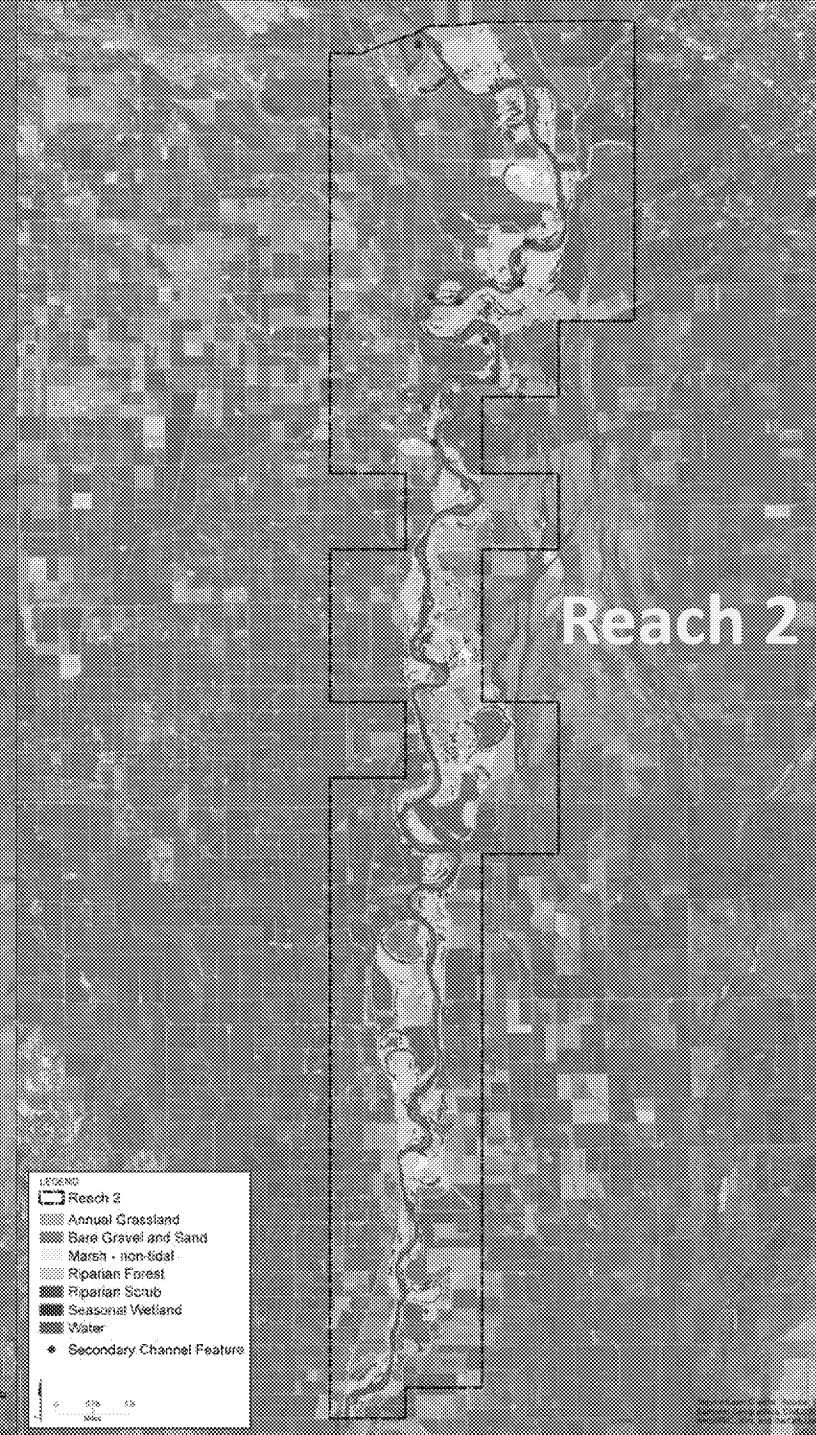
Species	Life Stage / Habitat Use	Critical Processes	Off-Channel / Floodplain Habitat Features					Critical Hydrologic Dependencies						Potential Occurrence Location		
			Active Geomorphic Features / Secondary Channels / Point Bars	Meander Bends / Exposed Banks	Riparian Woodland and Scrub	Permanent and Seasonal Wetlands	Other Natural	Inundation Timing (month / day)	Inundation Duration (days)	Inundation Frequency (recurrence interval)	Water Depth (feet)	Velocity (ft/s)	Depth to Groundwater (ft)	Red Bluff to Hamilton City	Hamilton City to Delevan	Delevan to Knights Landing
Chinook Salmon and Steelhead	Juvenile rearing and outmigration	Floodplain activation /area, stranding, geomorphic processes	x		x	x	x	See table 3-2	Min 10 days	2 years	< 5 ft	< 2ft / s	n/a	x	x	x
	Adult migration and holding	[same as above]	x		x	x	x	See table 3-2	Min 10 days	2 years	< 5 ft	< 2ft / s	n/a	x	x	x
		Fine sediment								timing			critical			

# Habitat Maps

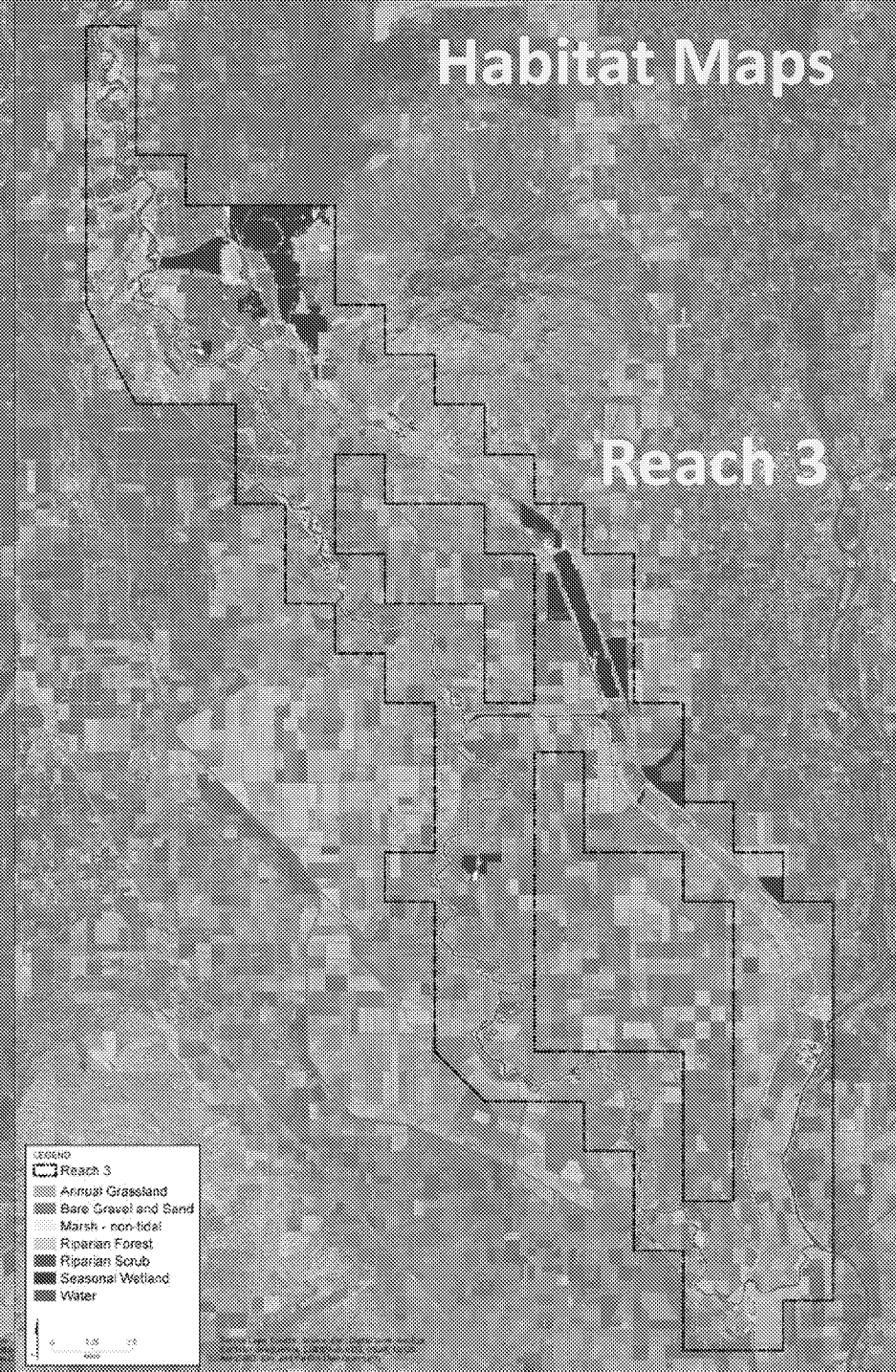
## Reach 1



## Reach 2



## Reach 3





# Inundated Habitat Maps Reach 1

5,000 cfs

30,000 cfs

50,000 cfs

LEGEND


- Reach 1
- 5,000 cfs
- Floodplain Habitat
- Secondary Channel Feature



0 1 2  
Miles

LEGEND


- Reach 1
- 30,000 cfs
- Floodplain Habitat
- Secondary Channel Feature



0 1 2  
Miles

LEGEND

- Reach 1
- 50,000 cfs
- Floodplain Habitat
- Secondary Channel Feature



0 1 2  
Miles



# Inundated Habitat Maps Reach 2

5,000 cfs

30,000 cfs

50,000 cfs

LEGEND

- Reach 2
- 5,000 cfs
- Floodplain Habitat
- Secondary Channel Feature

0 250 500  
Miles

LEGEND

- Reach 2
- 30,000 cfs
- Floodplain Habitat
- Secondary Channel Feature

0 250 500  
Miles

LEGEND

- Reach 2
- 50,000 cfs
- Floodplain Habitat
- Secondary Channel Feature

0 250 500  
Miles



# Inundated Habitat Maps Reach 3

5,000 cfs

30,000 cfs

50,000 cfs

LEGEND

- Reach 3
- 5,000 cfs
- Floodplain Habitat

LEGEND

- Reach 3
- 30,000 cfs
- Floodplain Habitat

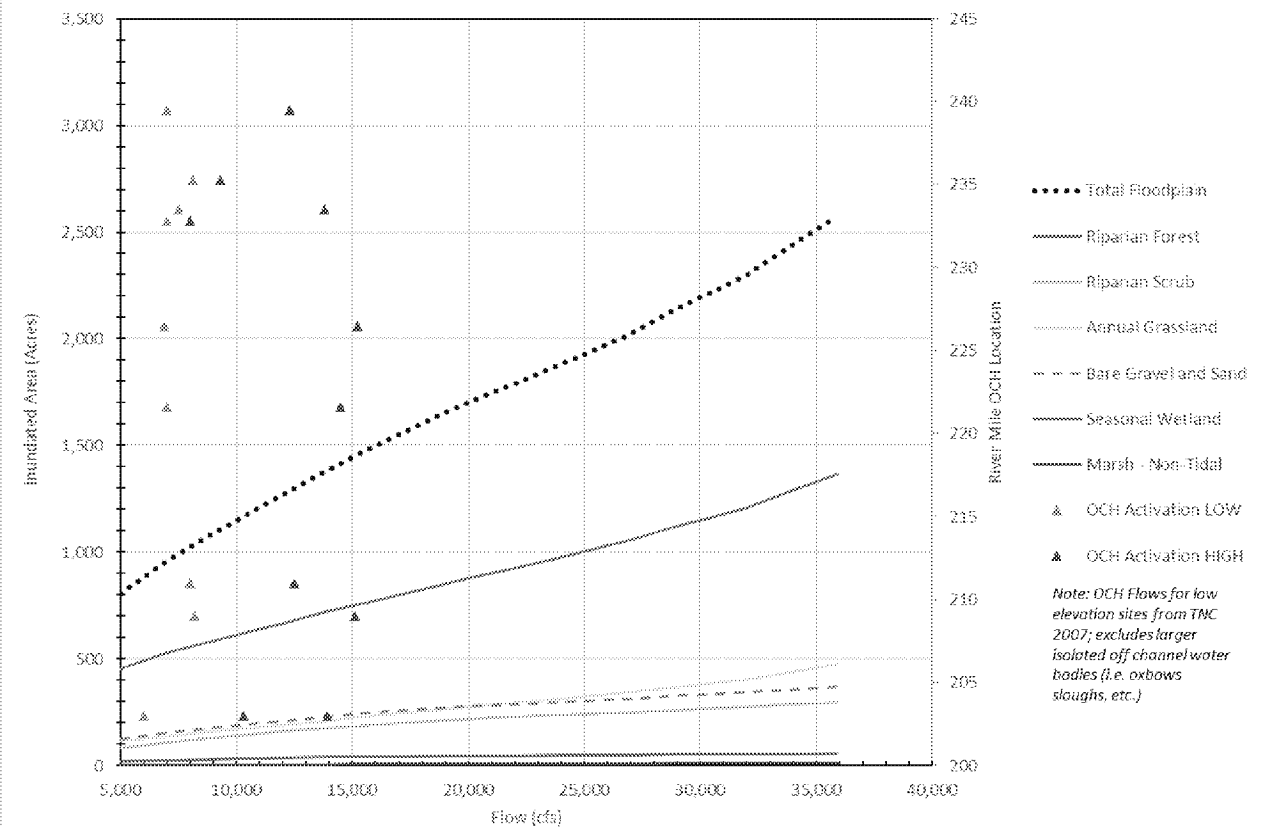
LEGEND

- Reach 3
- 50,000 cfs
- Floodplain Habitat

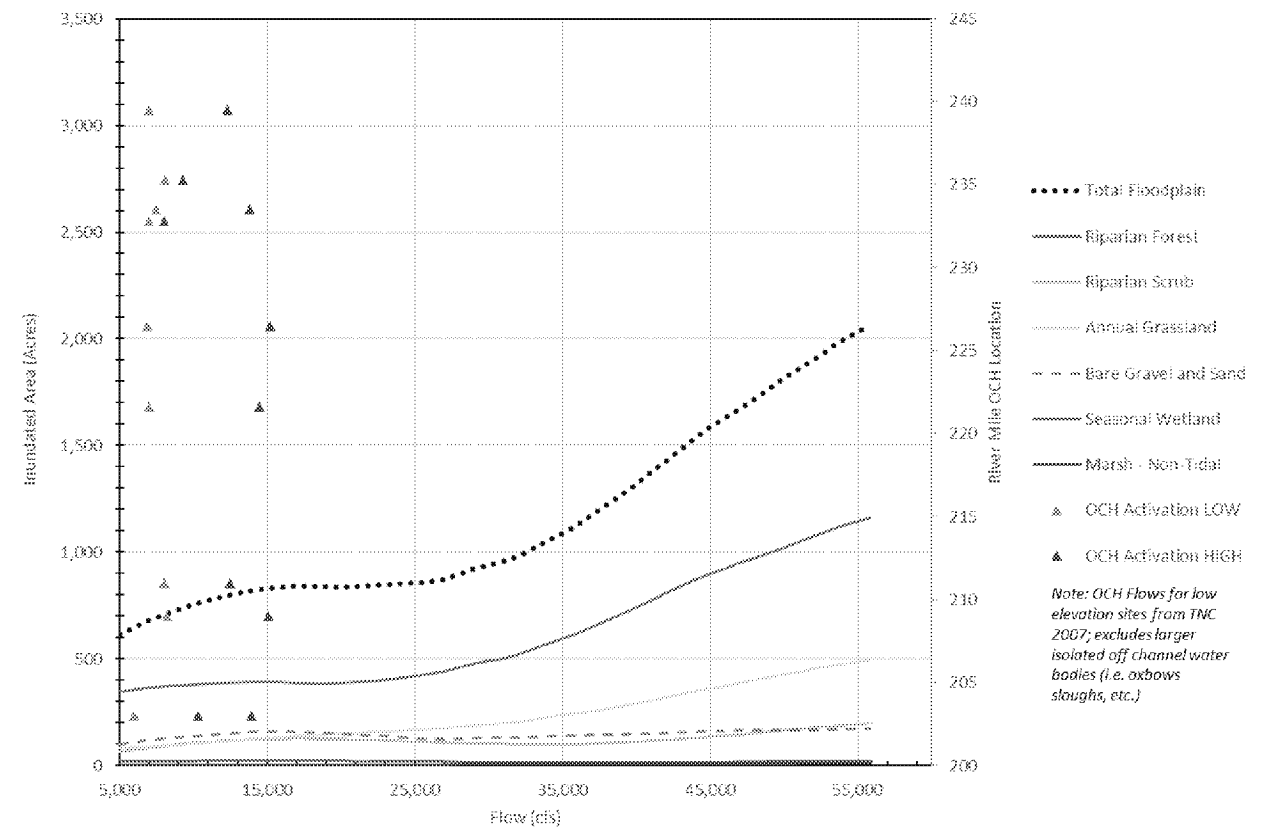
# Flow – Inundated Habitat Area

- Reach 1

Sacramento River Reach 1: Flow - Inundated Habitat Areas



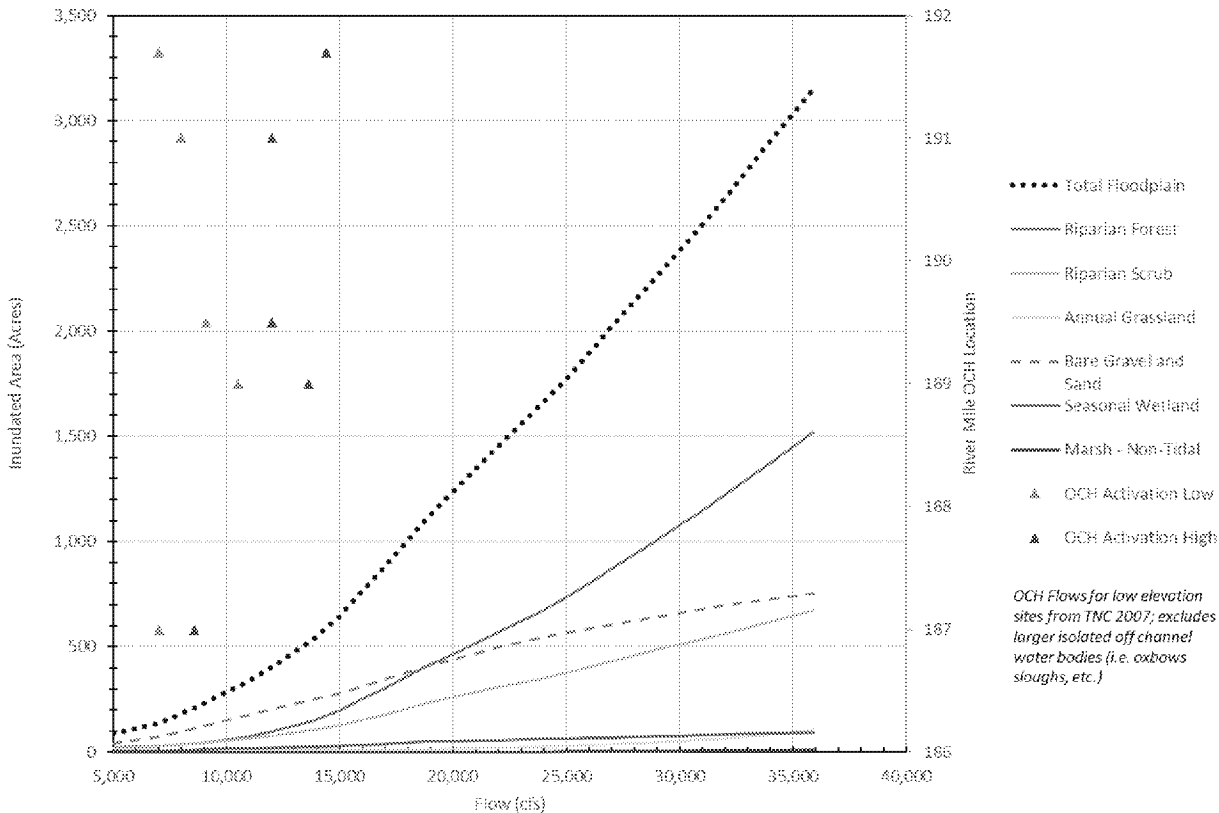
Sacramento River Reach 1: Flow - Inundated Habitat Areas



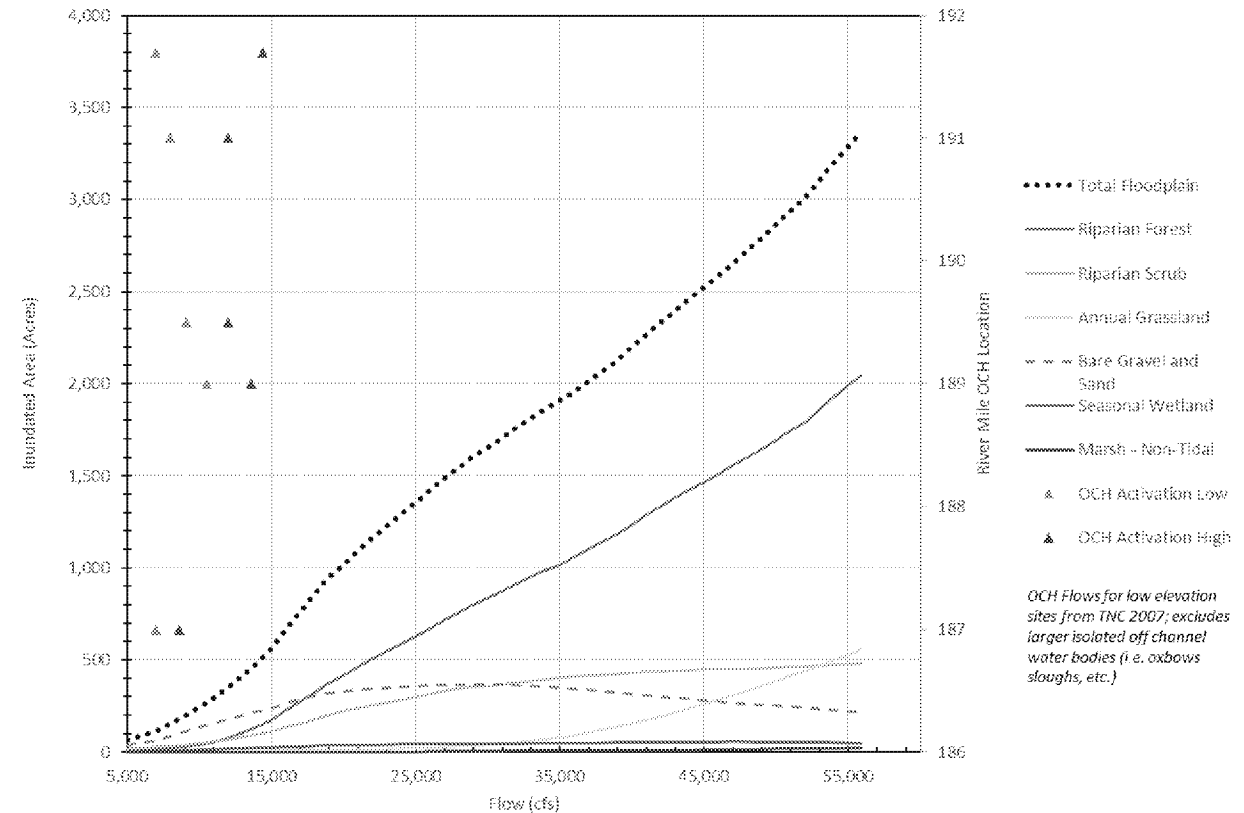
# Flow – Inundated Habitat Area

- Reach 2

Sacramento River Reach 2: Flow - Inundated Habitat Areas



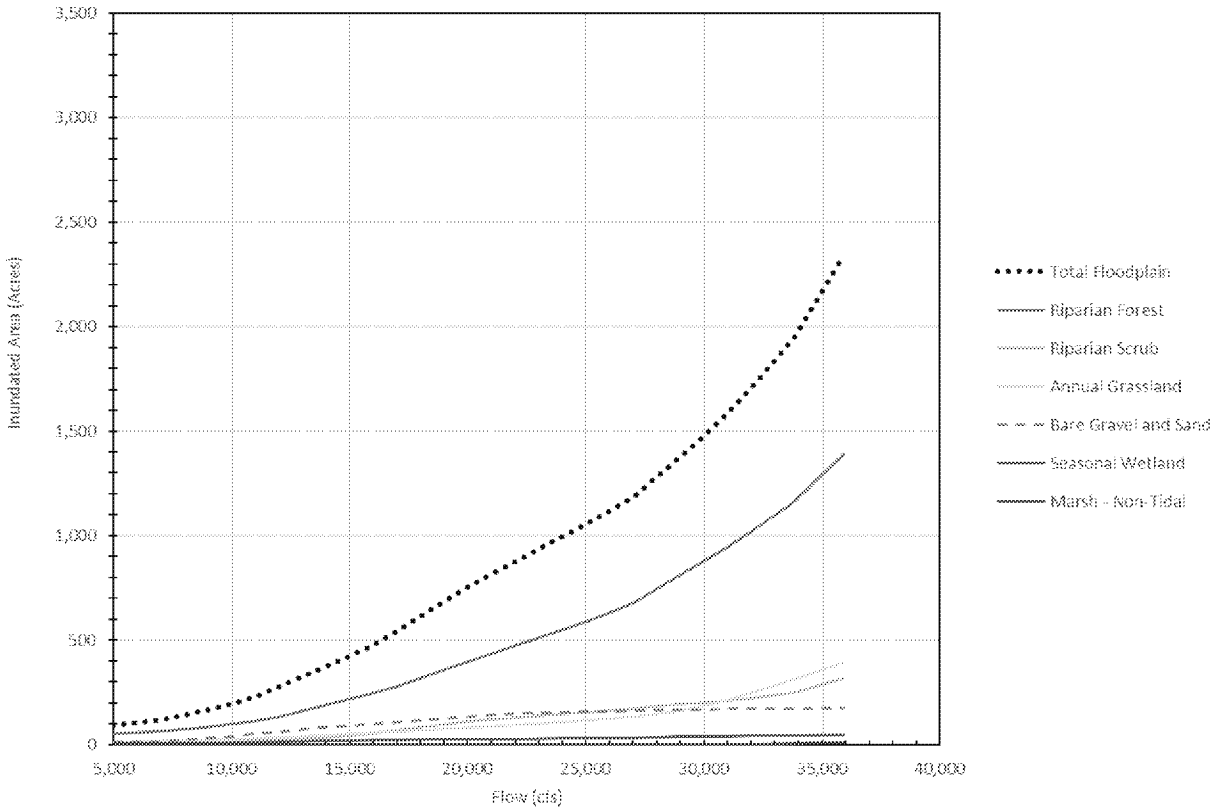
Sacramento River Reach 2: Flow - Inundated Habitat Areas



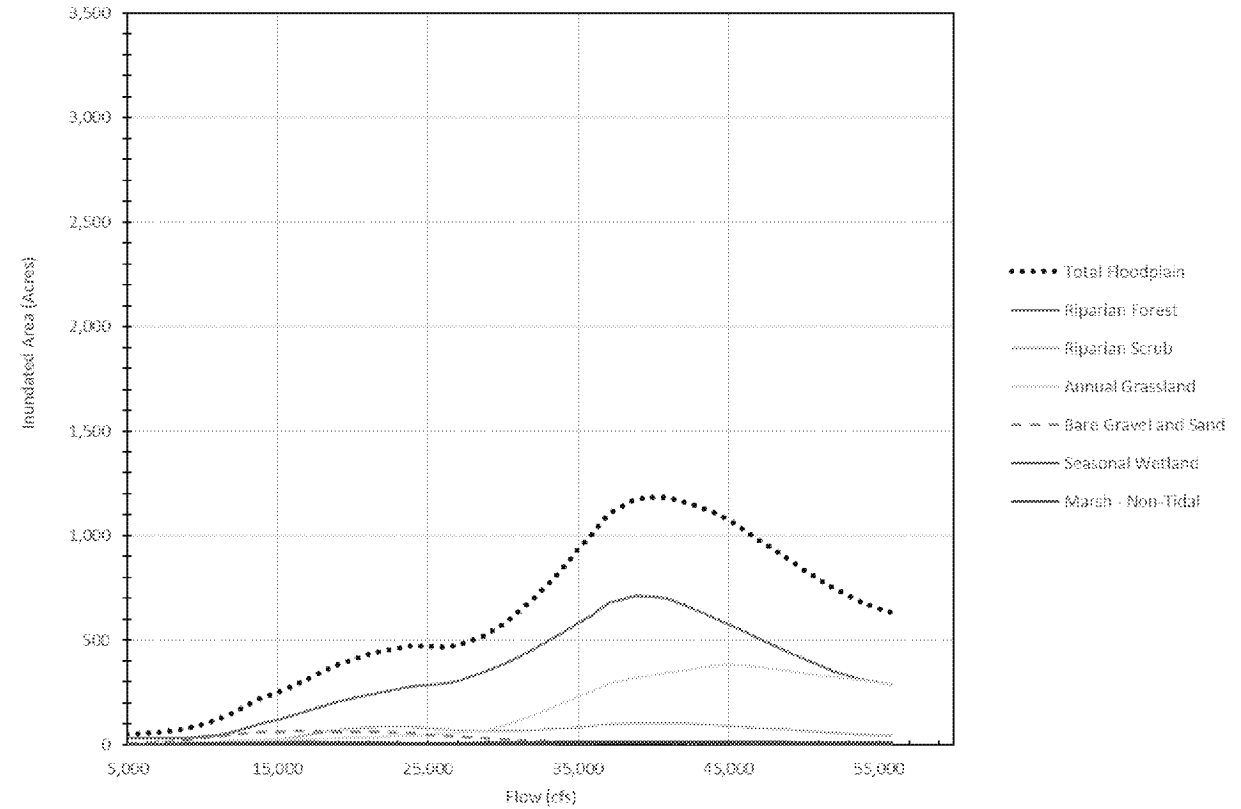
# Flow – Inundated Habitat Area

- Reach 3

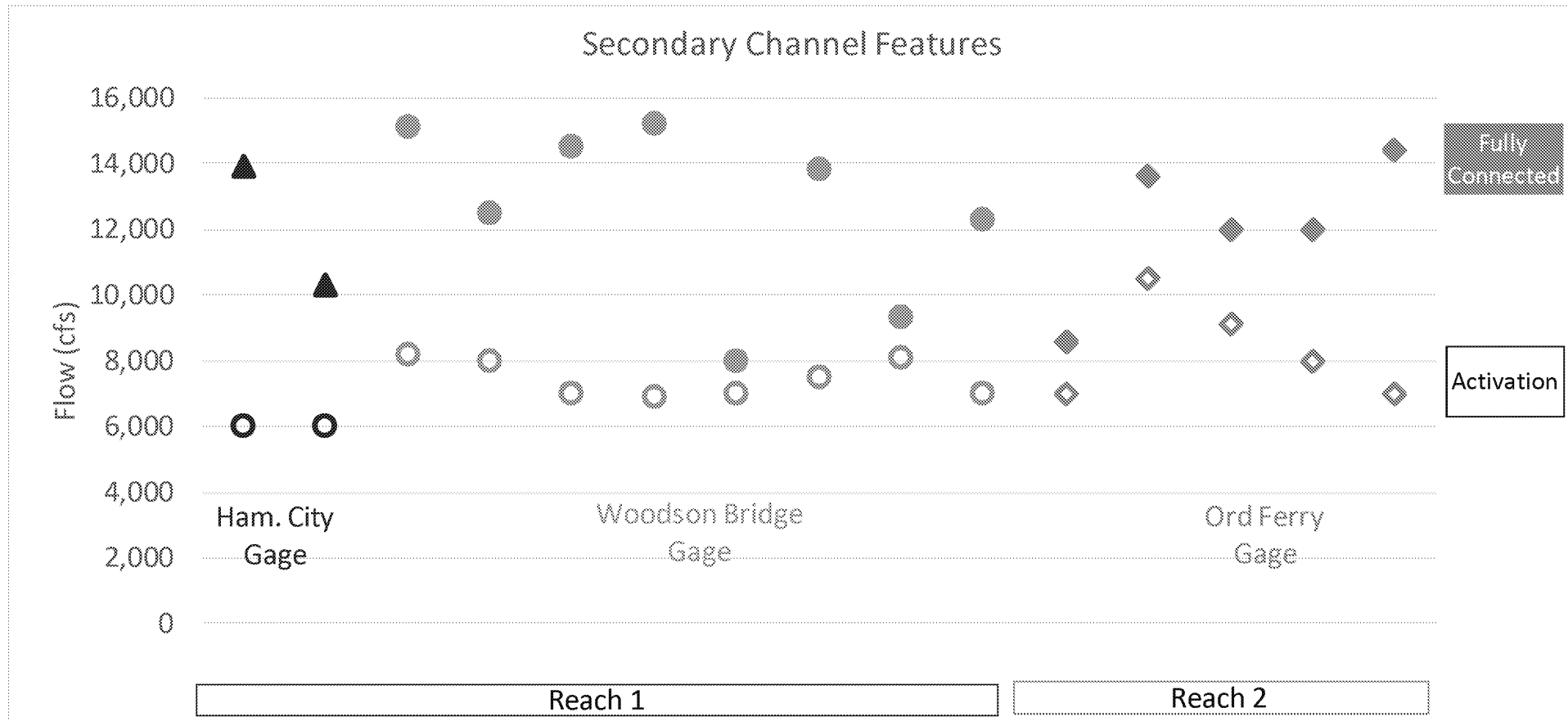
Sacramento River Reach 3: Flow - Inundated Habitat Areas



Sacramento River Reach 3: Flow - Inundated Habitat Areas



# Secondary Channel Features – Activation Flows



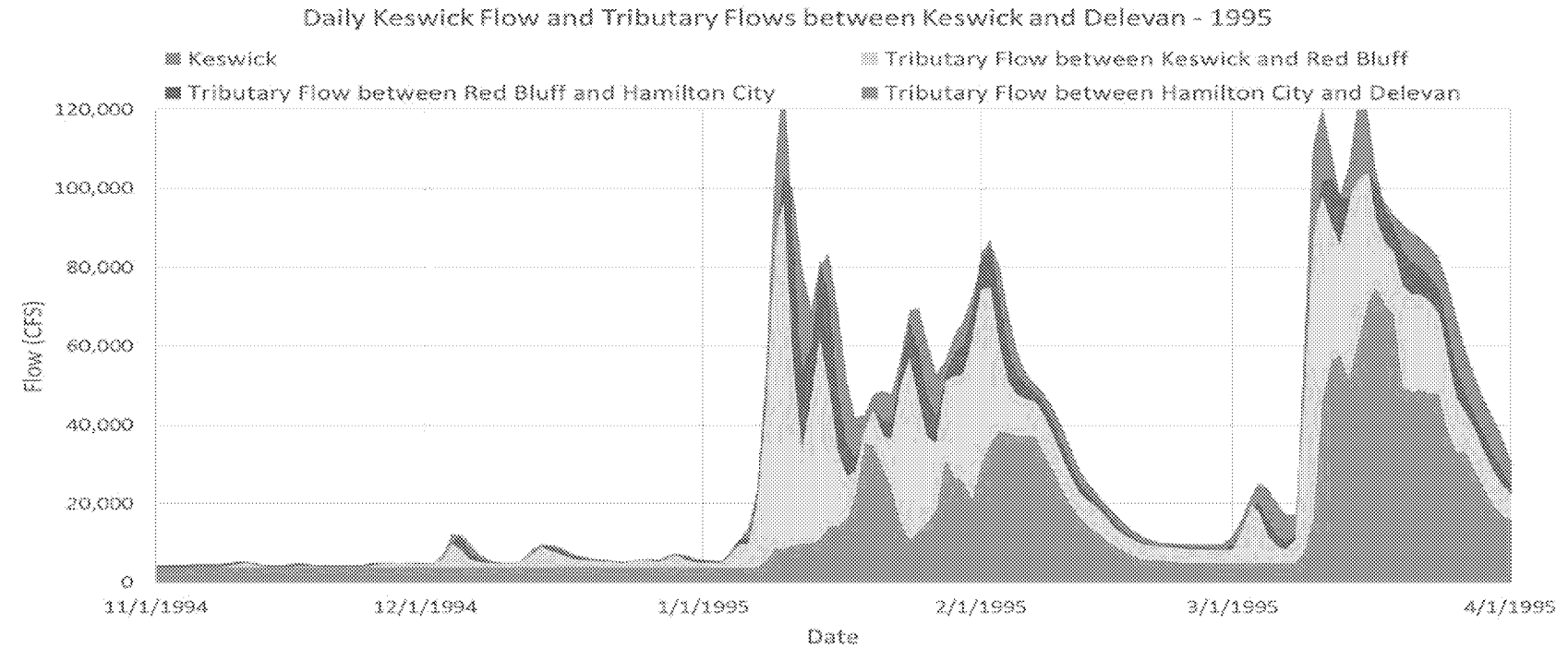
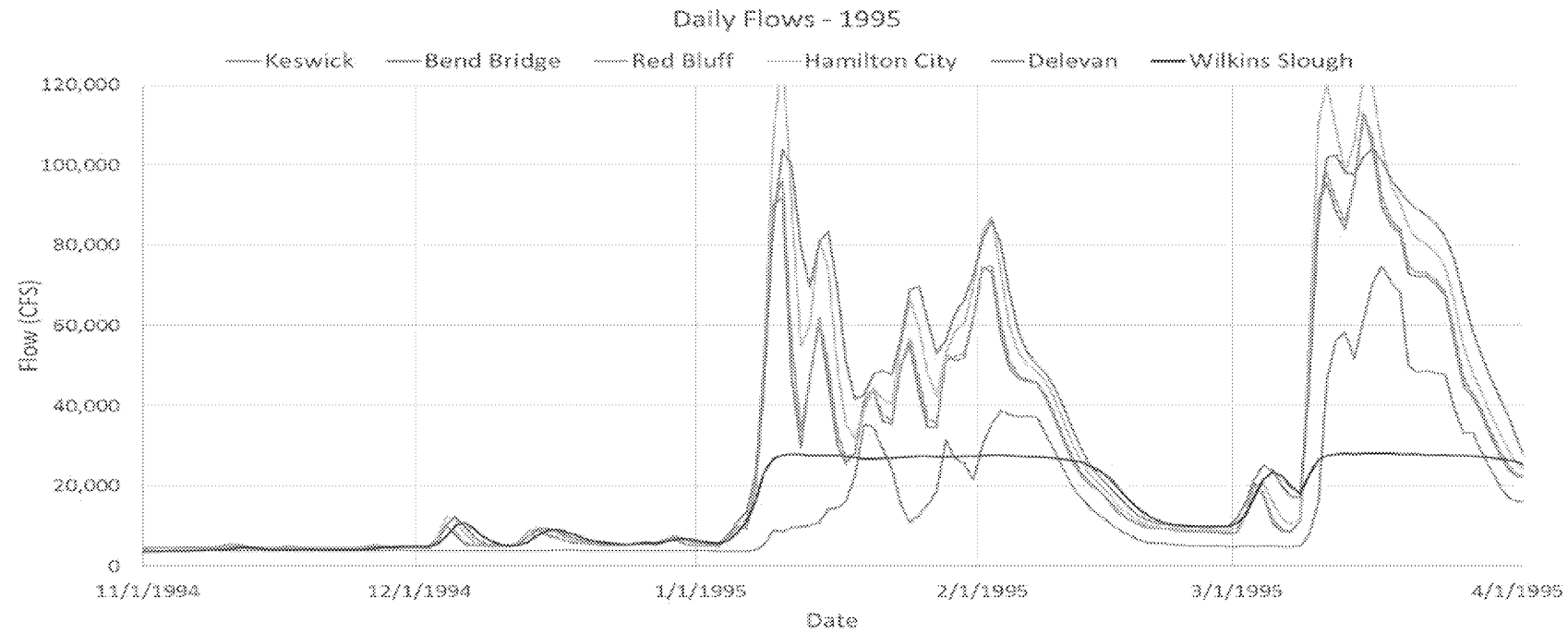
# Hydrology Characteristics

# November – March (1963 – 2010) Hydrographs for the Following Sample Years

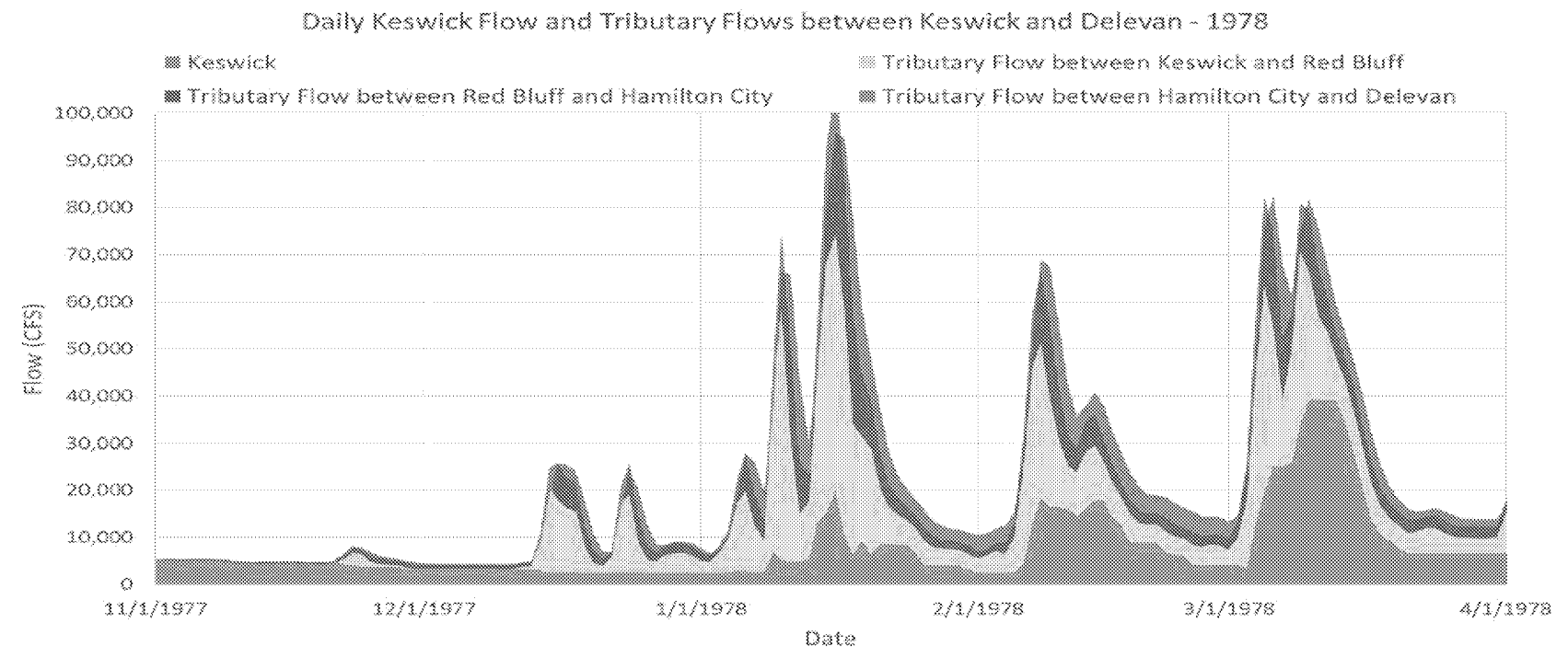
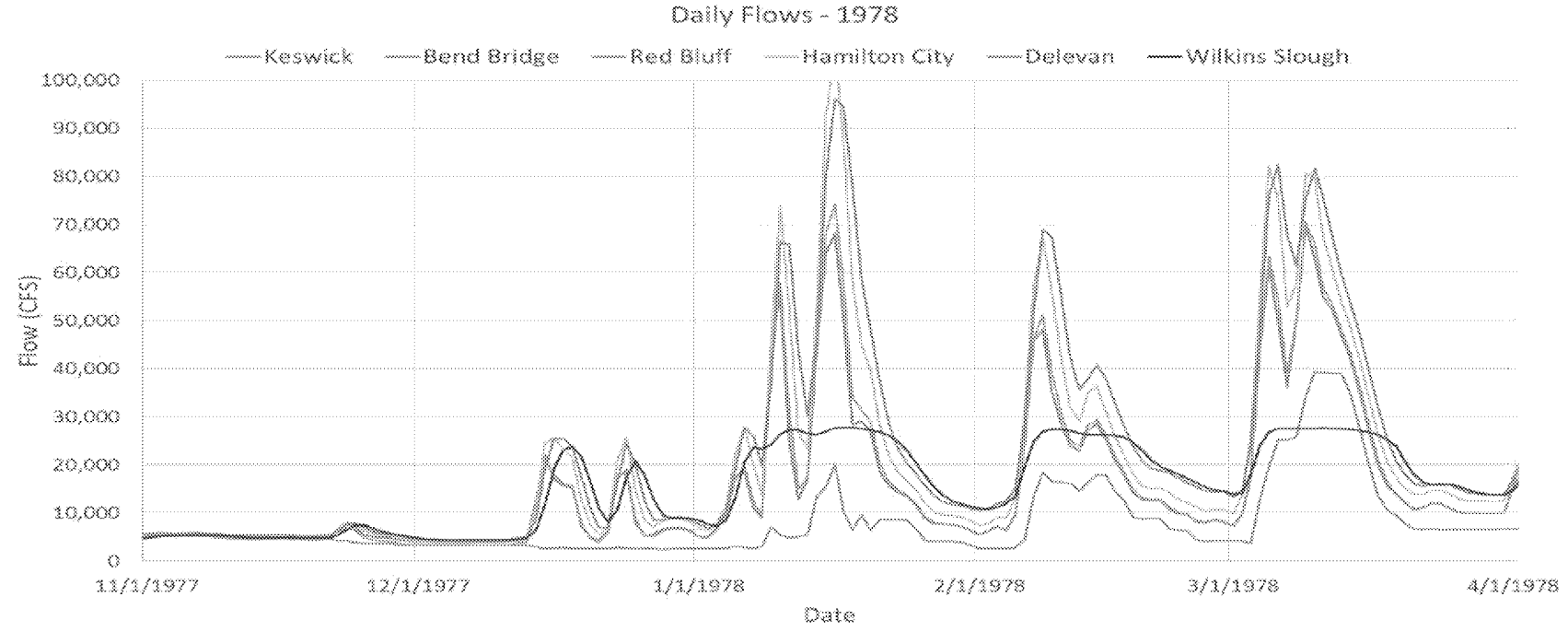
- Wet
    - 1995
  - Above Normal
    - 1978
  - Below Normal
    - 1966
  - Dry
    - 1985
  - Critical
    - 1988
- Locations:
    - Keswick
    - Bend Bridge
    - Red Bluff
    - Hamilton City
    - Delevan
    - Wilkins Slough



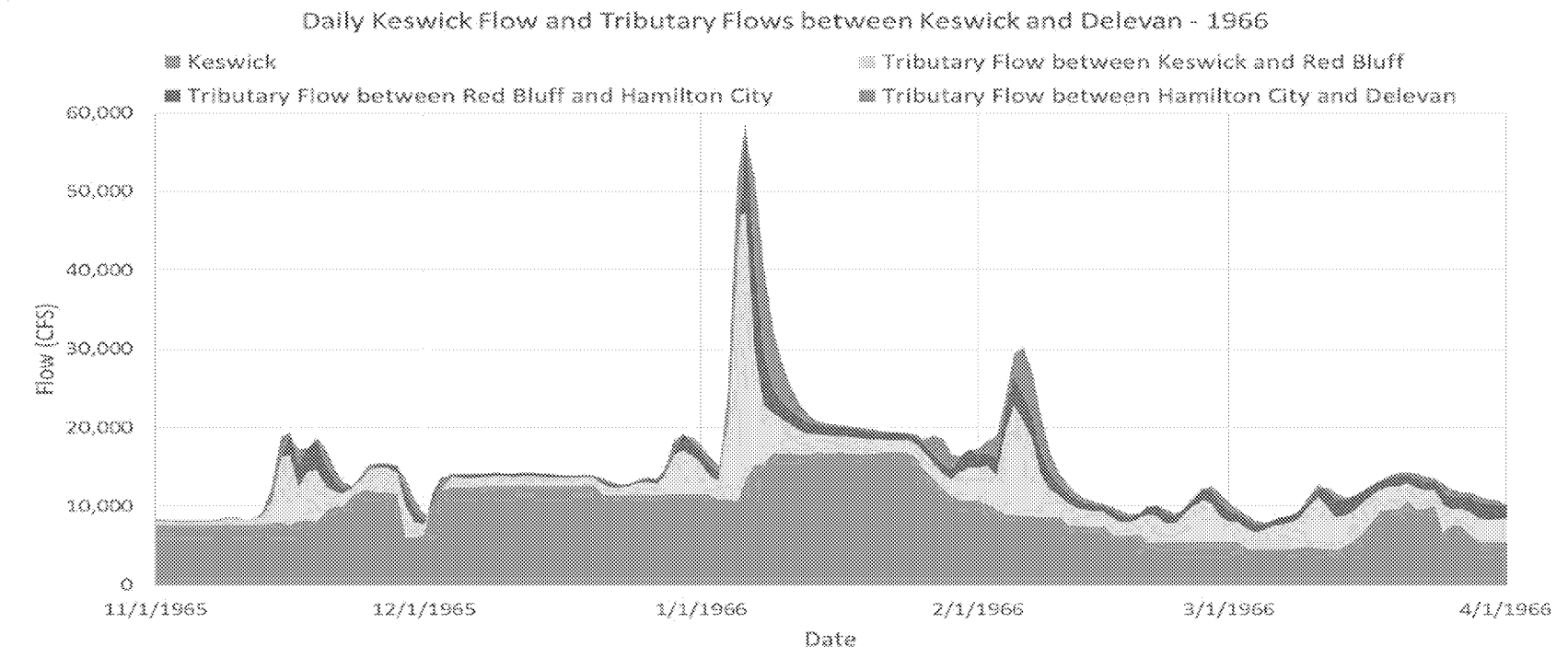
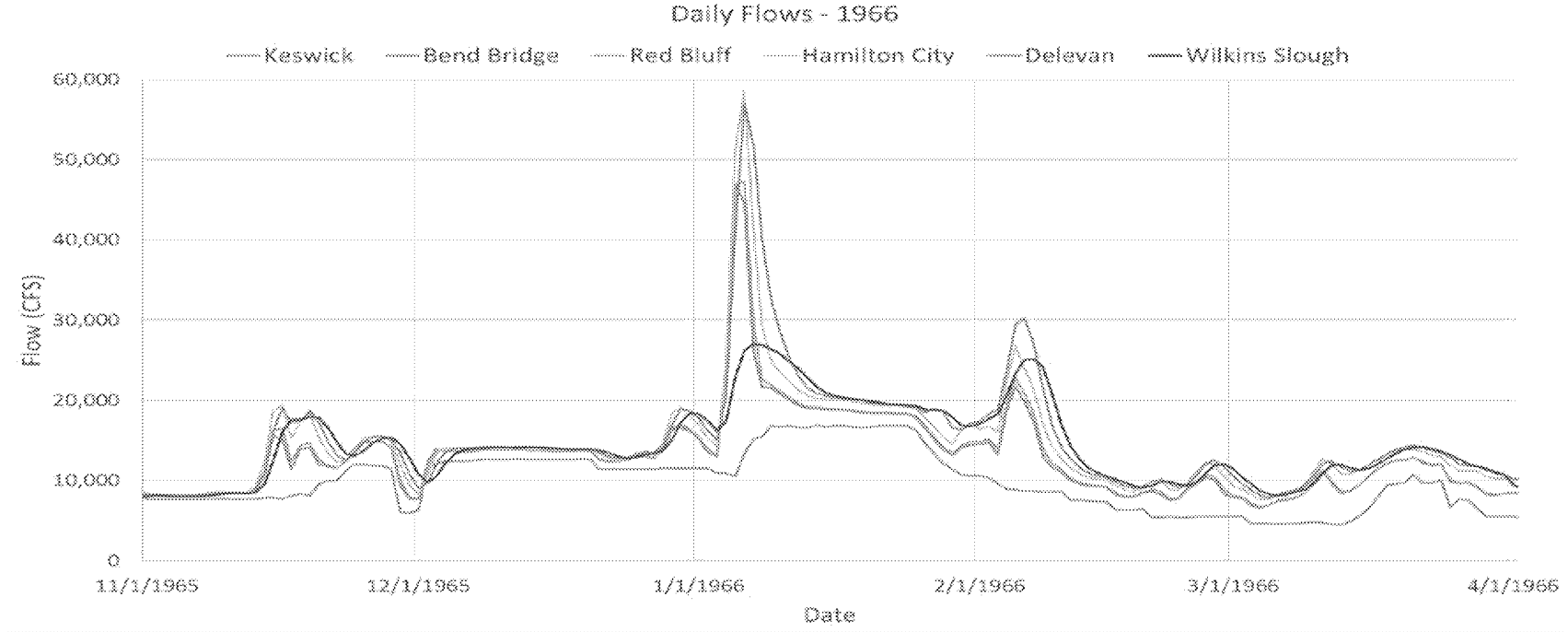
Wet  
1995



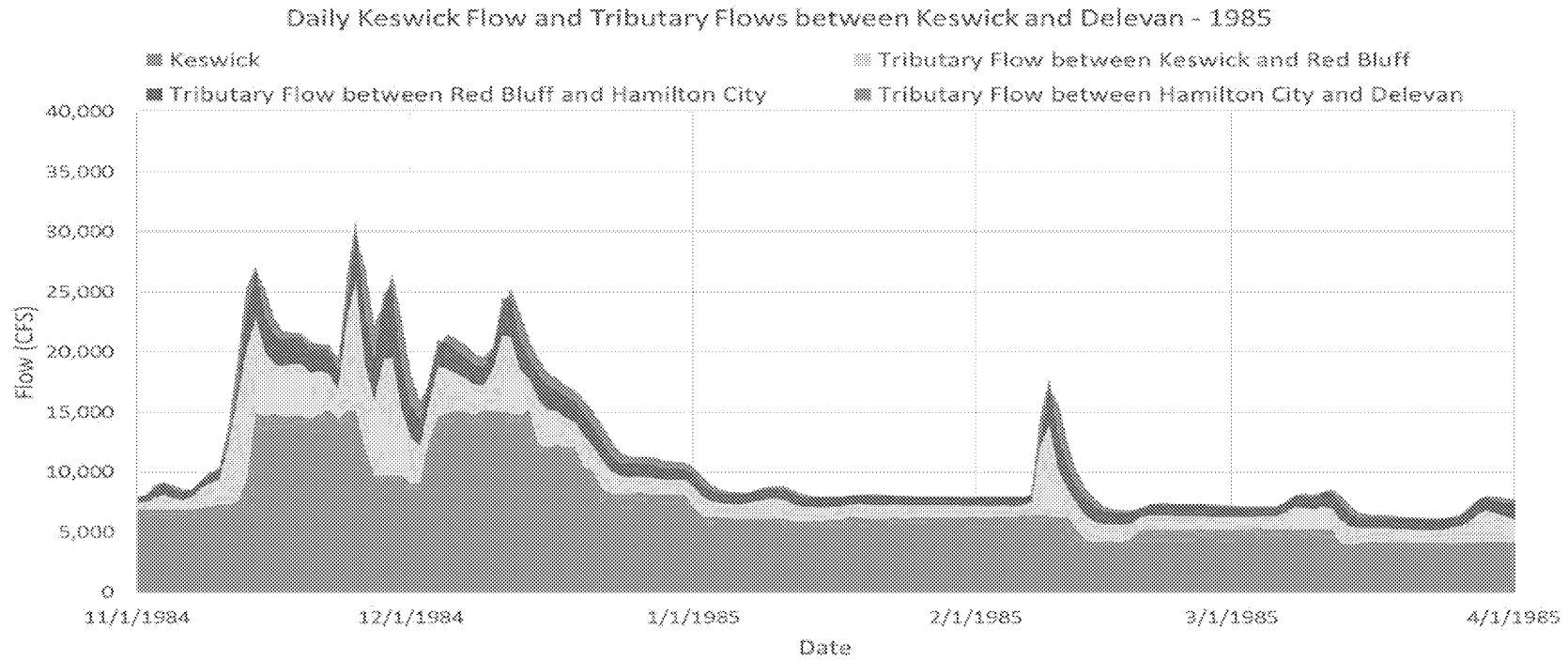
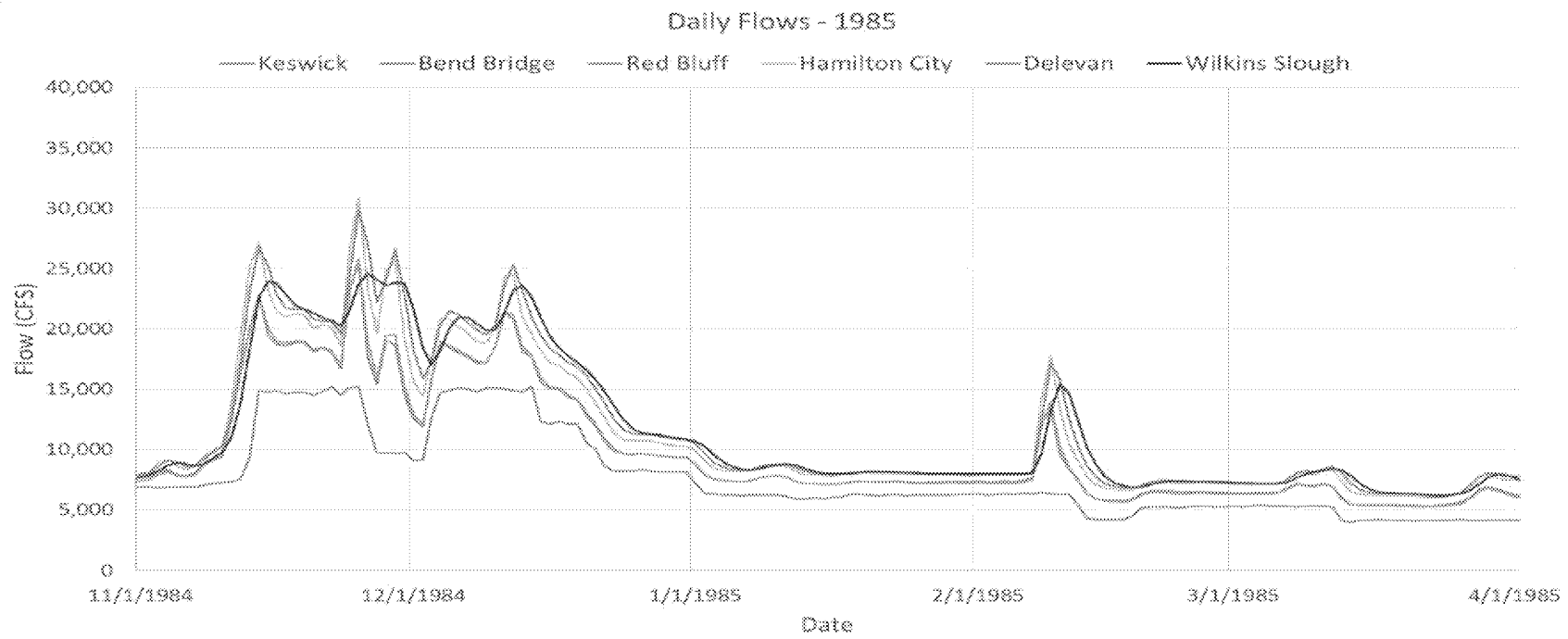
Above Normal  
1978



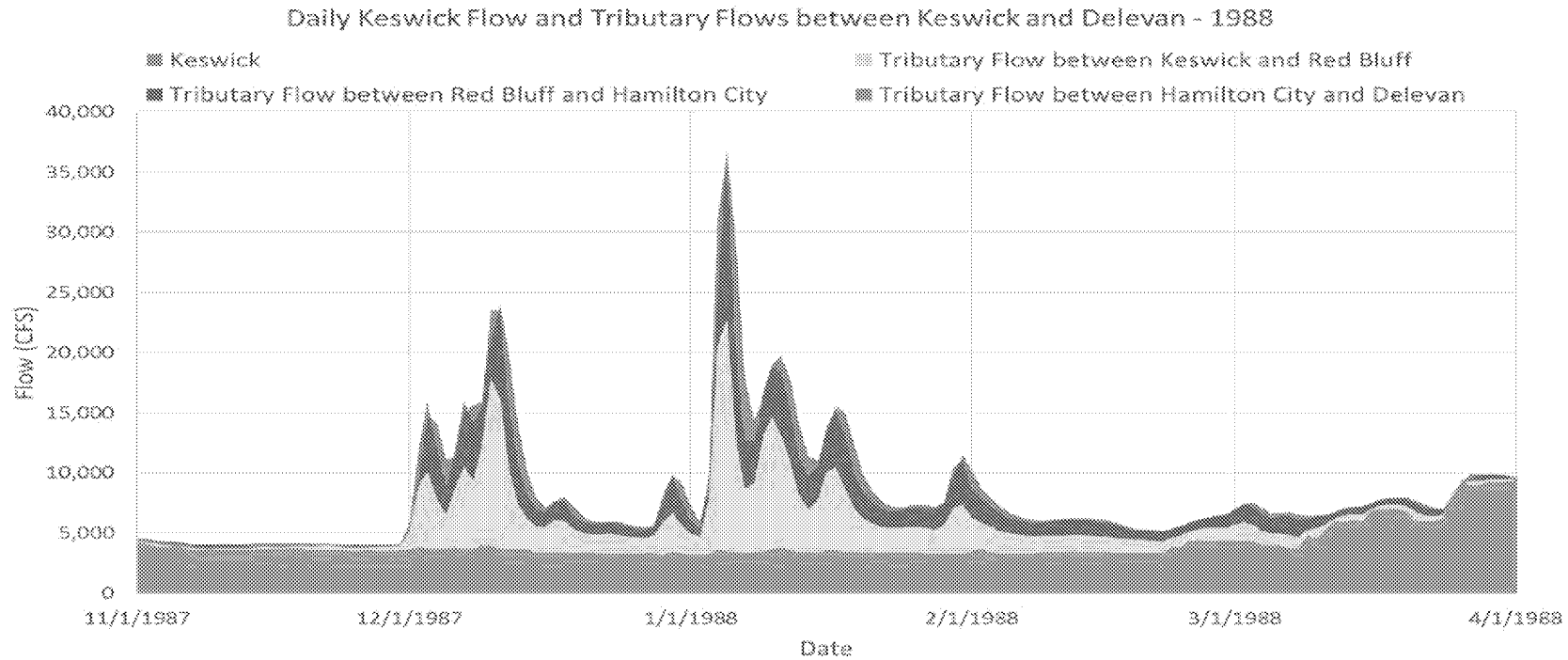
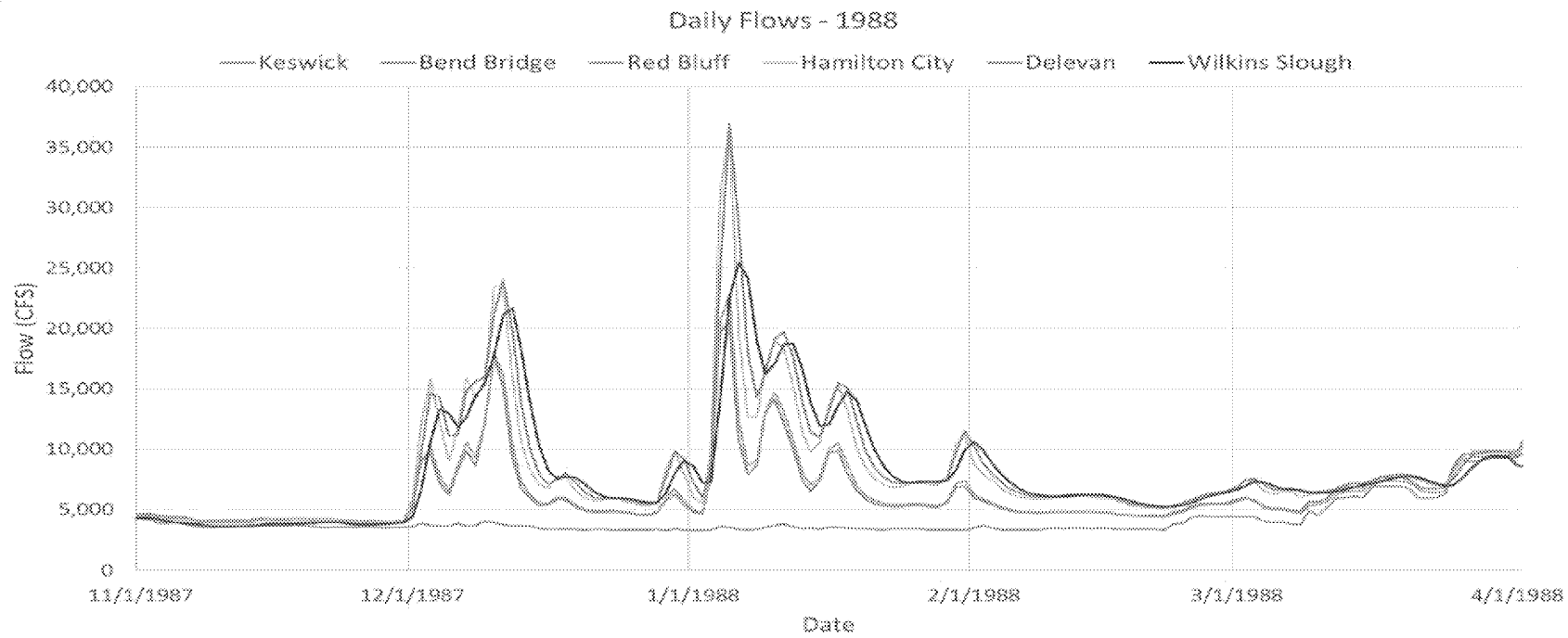
Below Normal  
1966



Dry  
1985

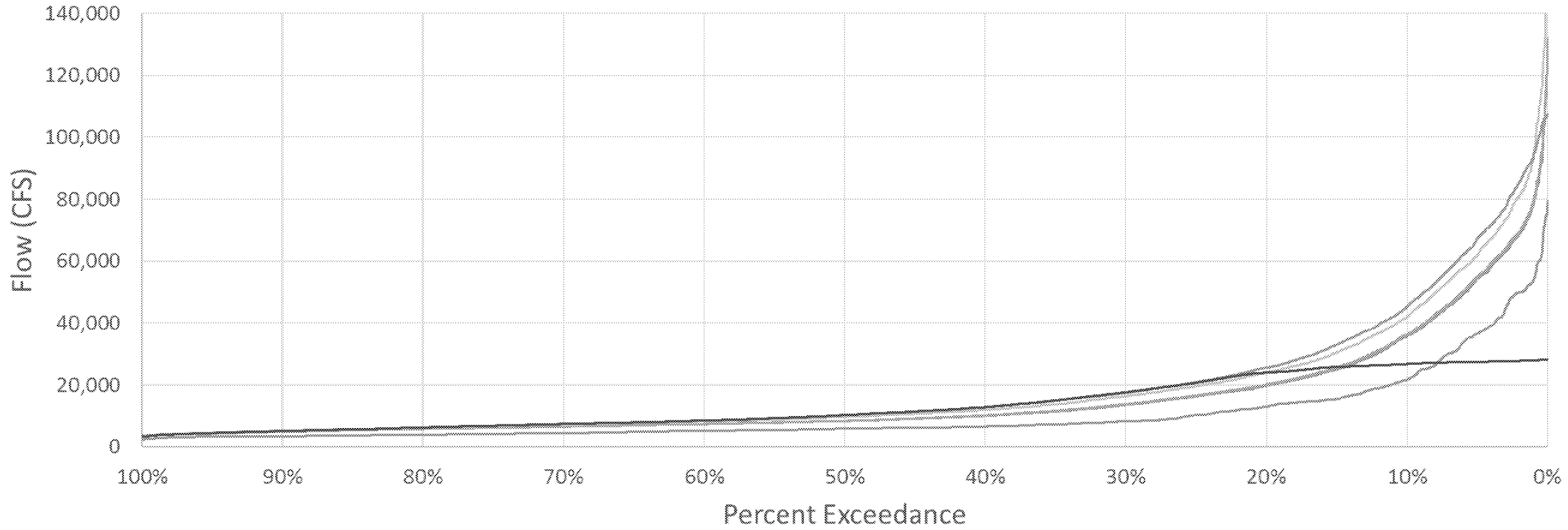


# Critical 1988



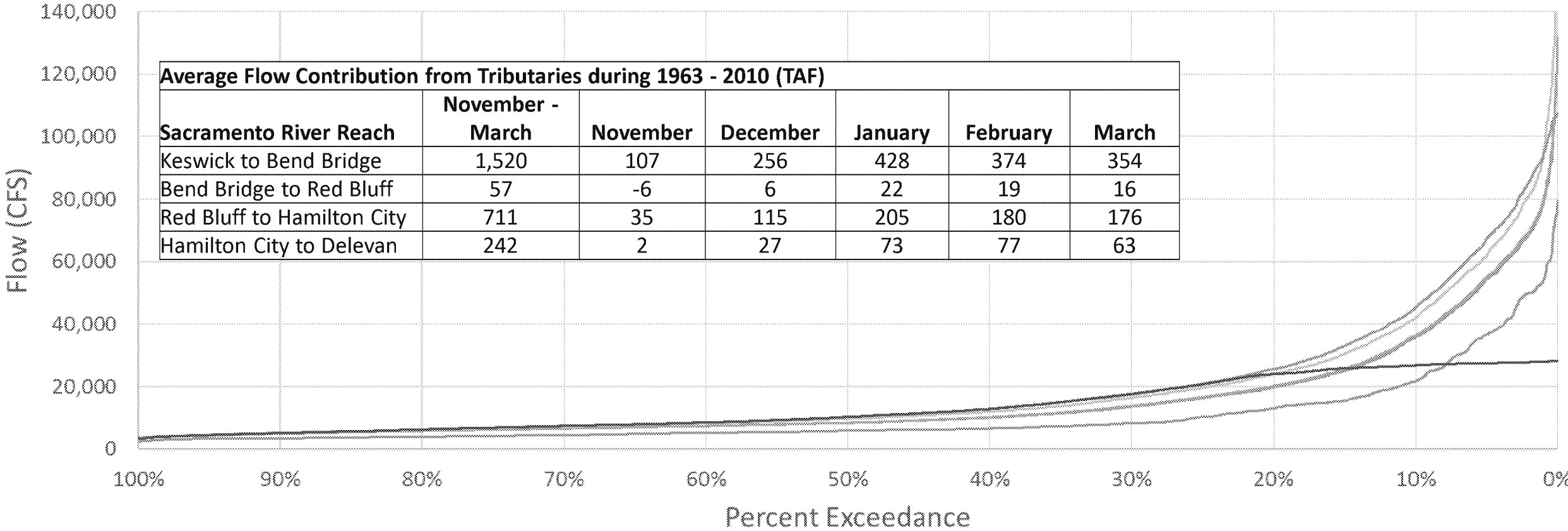
# Exceedance Probability - November Through March (1963 - 2010)

— Keswick — Bend Bridge — Red Bluff — Hamilton City — Delevan — Wilkins Slough



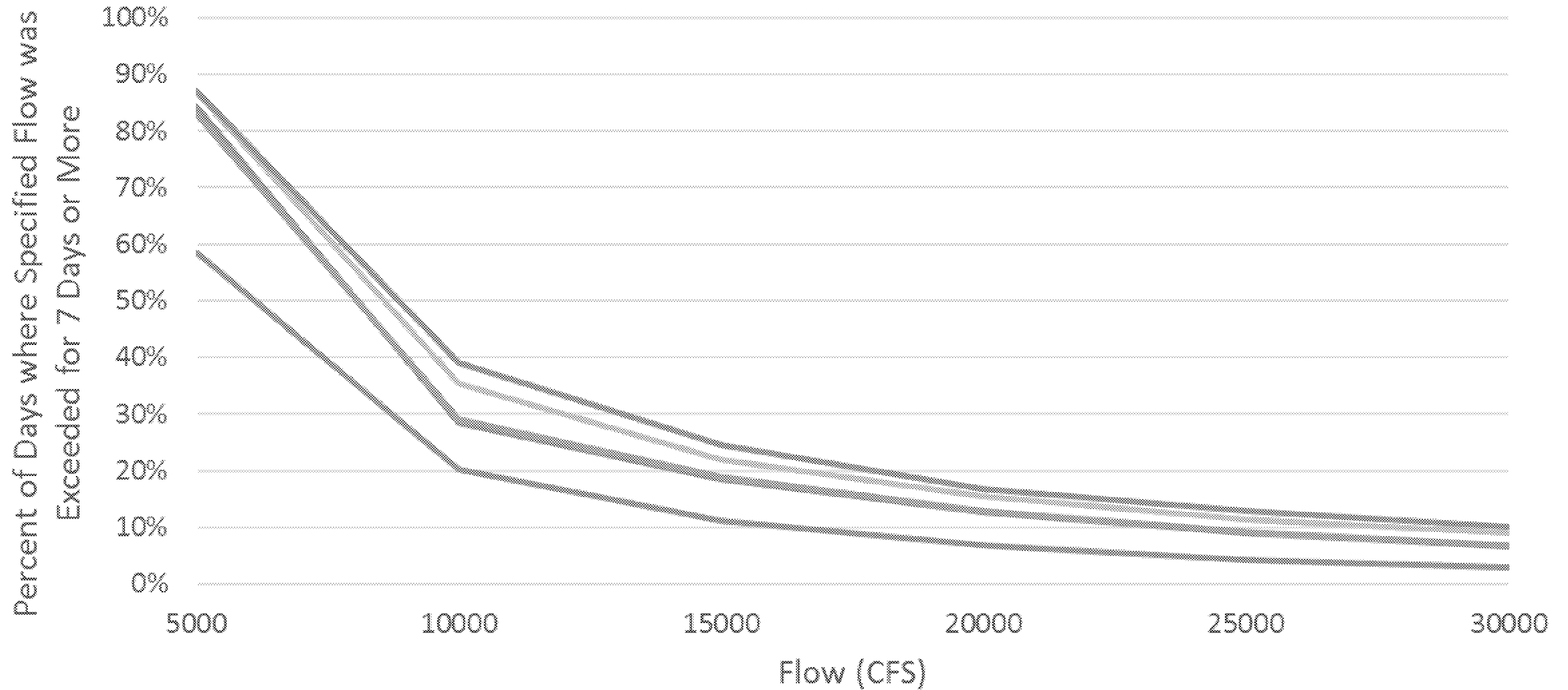
## Exceedance Probability - November Through March (1963 - 2010)

— Keswick
— Bend Bridge
— Red Bluff
— Hamilton City
— Delevan
— Wilkins Slough



# Percent of Time from 1963 to 2010 where Specified Flow was Exceeded for 7 Consecutive Days or More in November Through March

— Keswick — Bend Bridge — Red Bluff — Hamilton City — Delevan





	Percent of Days where 15000 CFS was Exceeded for 7 Days or More at Bend Bridge	Percent of Days where 25000 CFS was Exceeded for 7 Days or More at Bend Bridge	Percent of Days where Bend Bridge flow was between 15000 CFS and 25000 CFS for 7 days or more
November - March	19%	9%	3%
November	5%	0%	2%
December	15%	6%	3%
January	24%	11%	4%
February	28%	15%	3%
March	22%	12%	2%

## Sites Reservoir BA

### Points of Contact

#### Sites Project

Authority Chair – Fritz Durst	cell: (530) 304-5111	email: fritz.durst@gmail.com
General Manager – Jim Watson	cell: (530) 410-8250	email: jwatson@SitesProject.org
Environmental – Rob Thomson	cell: (805) 689-5854	email: rthomson@SitesProject.org

#### Reclamation

Planning Manager – David van Rijn	phone: (916) 978-5062	email: dvanrijn@usbr.gov
Sites Project Manager – Mike Dietl	phone: (916) 978-5070	email: mdietl@usbr.gov

#### NMFS

Role? - Cathy Marcinkevage	phone: (916) 930-5648	email: cathy.marcinkevage@noaa.gov
Role? - Evan Sawyer	phone: ((916) 930-3656	email: Evan.Sawyer@noaa.gov
Diversion/Passage – Jean Castello	phone:	email: jean.castillo@noaa.gov
Role? – Ali Lane	phone:	email: allison.lane@noaa.gov
Sturgeon – Page Vick	phone:	email: page.vick@noaa.gov

#### Consultants

Fish – Jim Lecky	phone: (206) 801-2805	email: jim.lecky@icf.com
Water Management – Jerry Johns	cell: (916) 995-9266	email: jjohnswater@gmail.com
Operations Modeling – Rob Tull	phone: (916) 286-0310	email: Robert.Tull@jacobs.com

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**Sent:** 11/18/2019 11:28:51 AM

**Attachments:** 20191115 Workshop Presentation.pdf; Sites Annual Cash Flow Tool V1.0.xlsx

Good Morning Authority Board and Reservoir Committee members,

**Presentation:** Attached is the presentation that is nearly ready for distribution. Please let me know if you have any changes by 10am today (it is as-presented, with comments and hidden slides deleted). **Ali:** the only other change I am aware of is the changing of the word "Narrowing" on slide 42, recommended by Gary Evans. Can you please send me back a revised version this morning so we can get this out?

**Cash Flow Tool:** I have attached the latest cash flow tool for distribution. I have cc'd Doug and Brian to have on last look as well. Importantly, I have added a tab to show the limitations and the version history. I can see us having multiple versions and improving this over time. I also created a bug / improvement tracking sheet. The link to that form is [here](#). I have pasted the "Limitations" statement I came up with here for convenience. Please provide input if you have any as this is important to be clear.

Have a wonderful day,

Marcia

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Sites Project Admin  
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Email: [mkivett@sitesproject.org](mailto:mkivett@sitesproject.org)  
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122 Old Hwy 99W  
Maxwell, CA 95955

# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# Purpose of Workshop

- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

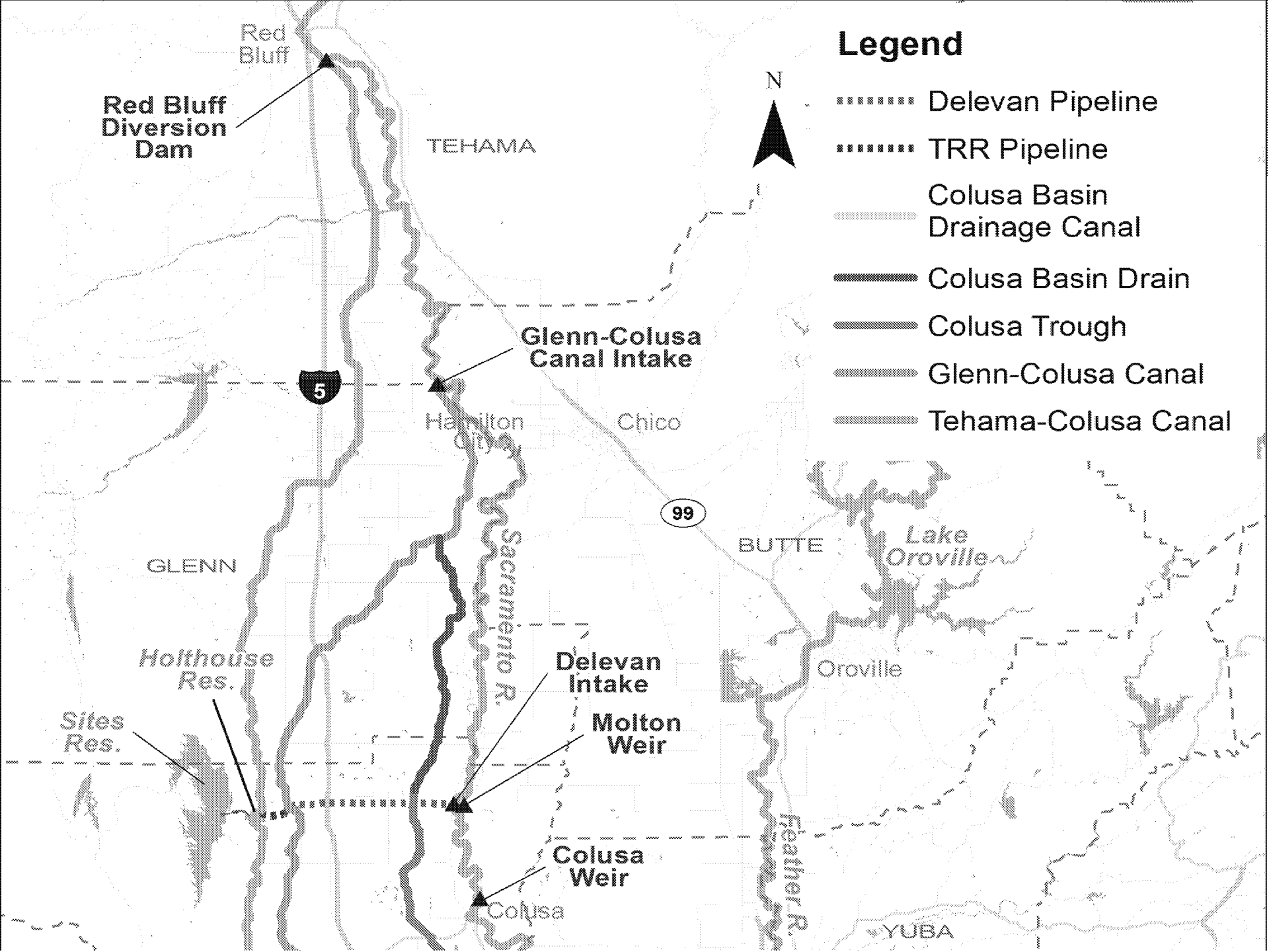
# OPERATIONAL CONSIDERATIONS STATUS



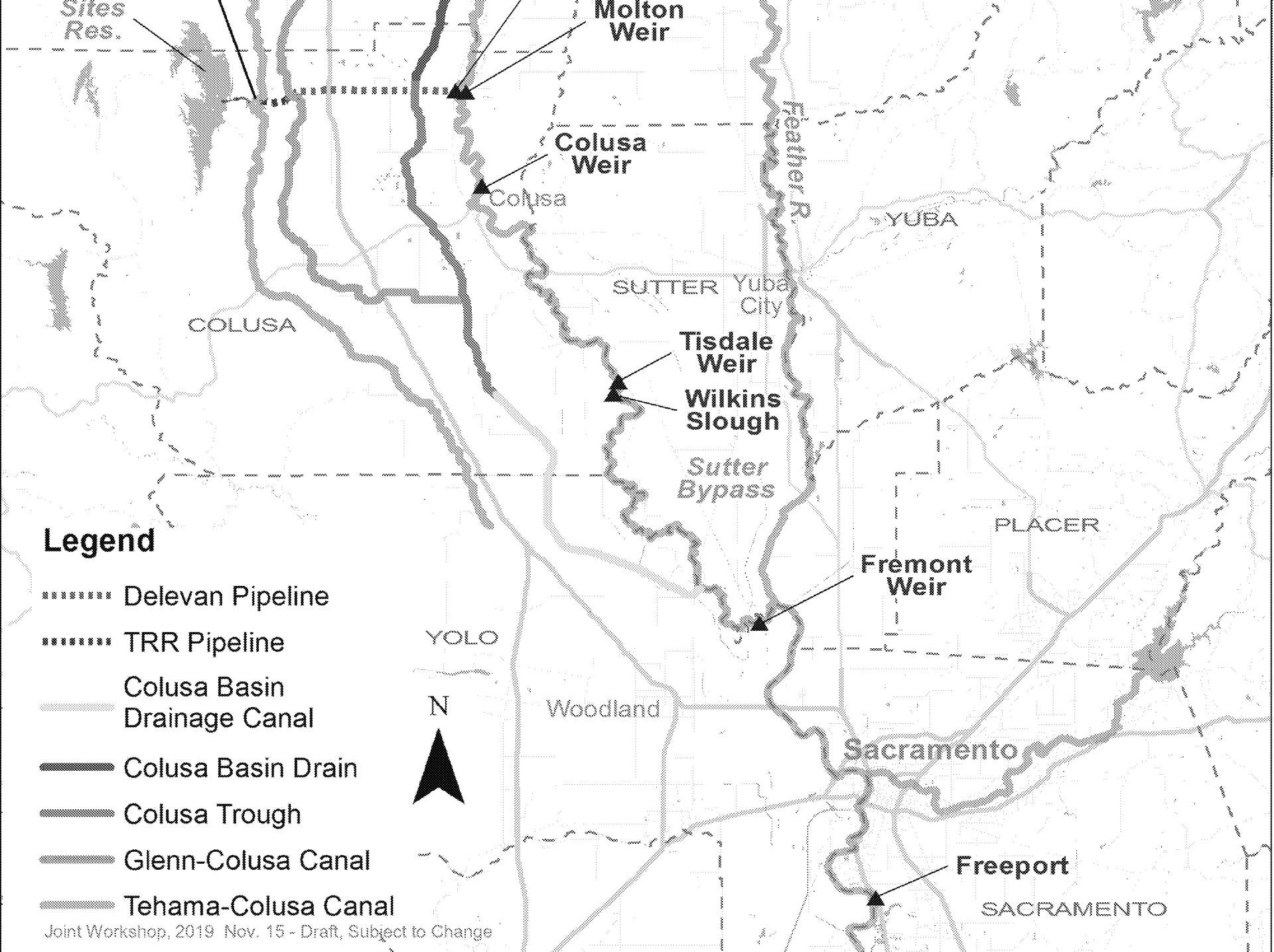
# Key Operational Activities

- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges









**Legend**

- ..... Delevan Pipeline
- ..... TRR Pipeline
- Colusa Basin Drainage Canal
- Colusa Basin Drain
- Colusa Trough
- Glenn-Colusa Canal
- Tehama-Colusa Canal



Joint Workshop, 2019 Nov. 15 - Draft, Subject to Change

# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
- Fremont Weir Notch
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Flows into the Sutter Bypass System
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Freeport Bypass Flow
  - Indicator of Delta survival for juvenile salmonids
- Net Delta Outflow Index (NDOI)
  - Spring NDOI directly correlates to fall longfin smelt population

# Recent Operations Modeling

- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
  - Incorporate ROC on LTO and new requirements from the NMFS Biological Opinion in the baseline

# Summary of Operational Scenarios Currently Being Discussed

Criteria	8,000 Wilkins with WaterFix Criteria	Scaled Diversion with WaterFix Criteria	Potential Revised Project – Sept 2019
Reservoir Size	1.5 MAF	1.5 MAF	1.5 MAF
Delevan Intake	Not included; Outlet only facility	Not included; Outlet only facility	Not included; Outlet only facility
Wilkins Slough Bypass Flow	8,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion
Fremont Weir Notch	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative
Flows into the Sutter Bypass System	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale
Freeport Bypass Flow	Modeled WaterFix Criteria (applied daily)	Modeled WaterFix Criteria (applied daily)	15,000 cfs Jan-March; 13,000 cfs in December; 11,000 cfs all other times (monthly average)
Net Delta Outflow Index (NDOI) Prior to Project Diversions	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	None; Minor changes in X2; Mitigation proposed
Total Deliveries (Average / Dry Year)	~220 TAF ~302 TAF	~234 TAF ~312 TAF	~332 TAF ~477 TAF

Potential Deliveries Range from 200,000 AF to 250,000 AF

# Major Permitting / Operations Challenges

- Challenges:
  - Magnitude of anticipated temperature benefit above Red Bluff need to be reassessed due to revised operational criteria
  - Discussions with Reclamation and analysis of water rights considerations on within year exchanges in Shasta are on-going
  - USFWS has announced it is updating the status review for longfin smelt and may propose it for listing under the Federal ESA but already consulting under CESA
  - Future Delta Conveyance and Voluntary Agreements may effect Sites operations and diversions but working to account for these in revised operational criteria

# Major Permitting / Operations Opportunities

- Opportunities:
  - Delta Conveyance, Voluntary Agreements, Eco Restore, and other projects present opportunities for improved fisheries conditions and for collaboration on science, monitoring and mitigation
  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

# Key Takeaways

- Permittable operations, reflecting current permitting discussions, may result in a range from 200,000 AF to 250,000 AF average annual deliveries at Holthouse
- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
- Additional detailed modeling on revised operational scenarios is needed to reduce uncertainties and refine analyses
- Additional discussions is needed with the regulatory agencies to develop and refine operational parameters to ensure they are implementable and meet the intended biological outcome



# VALUE PLANNING STATUS



# Overview

- Ad hoc representatives from the Reservoir Committee and Authority Board met on October 2 and 14, 2019 to discuss approaches that could potentially lower the cost of the project. AECOM and others conducted initial analyses on these approaches.
- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
- Appraisal level costs were developed in October 2015 dollars and escalated to 2018 dollars. These costs ranged from \$3.4 to \$4.0 billion (excluding risk management and financing costs) versus the \$5.2 billion for Alternative D.
- Authority agents developed comments on the appraisal evaluation but did not identify any “fatal flaws”.

# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

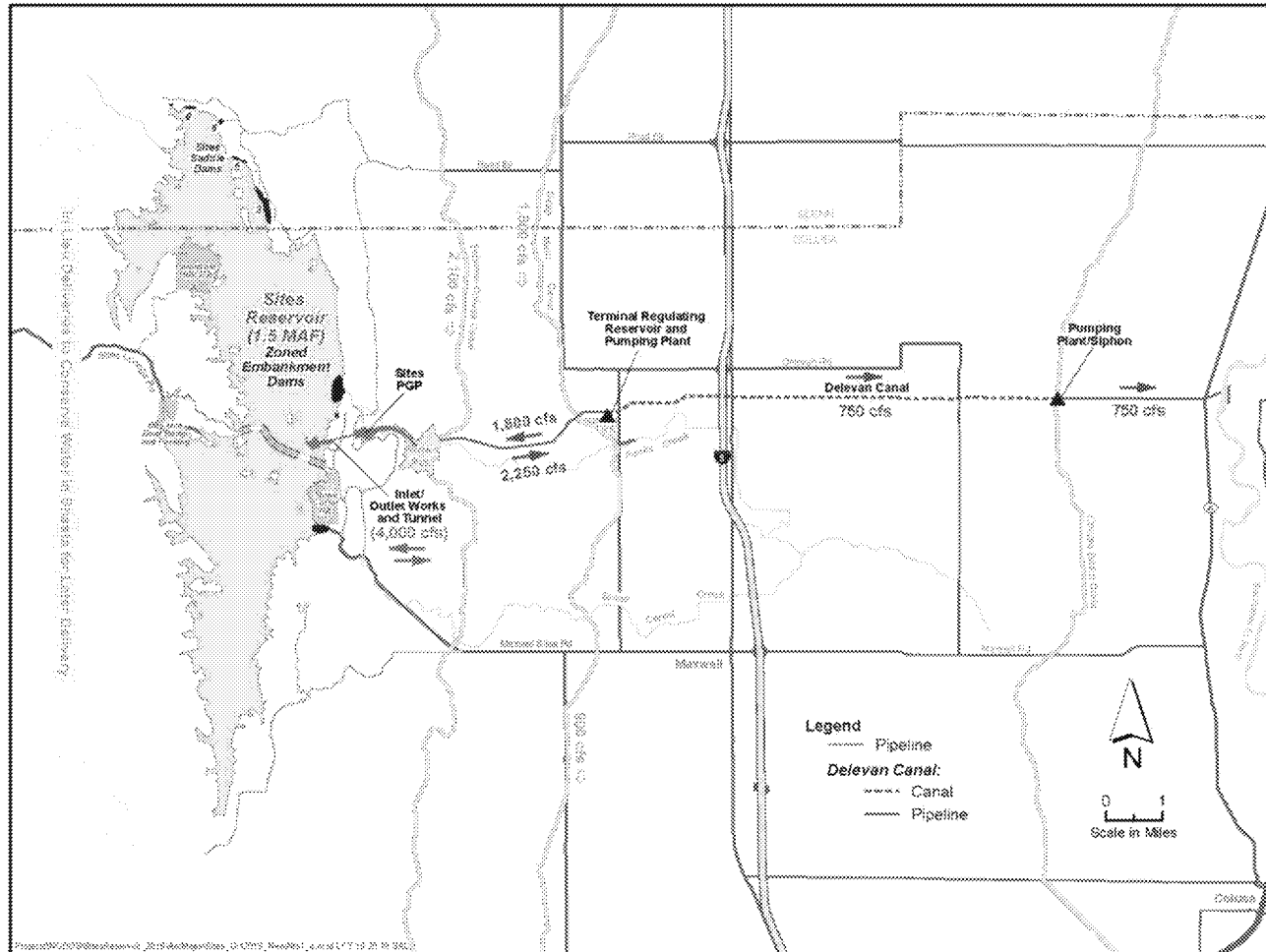
MAF = million acre feet

PGP = Pumping/Generating Plant

TCRR = Tehama-Colusa Regulating Reservoir

15 TRR = Terminal Regulating Reservoir

**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**



**Figure 1**

# Alternative 2 – Similar to Alternative 1 but uses the southern road alignment to Lodoga in place of the bridge - \$4.0B

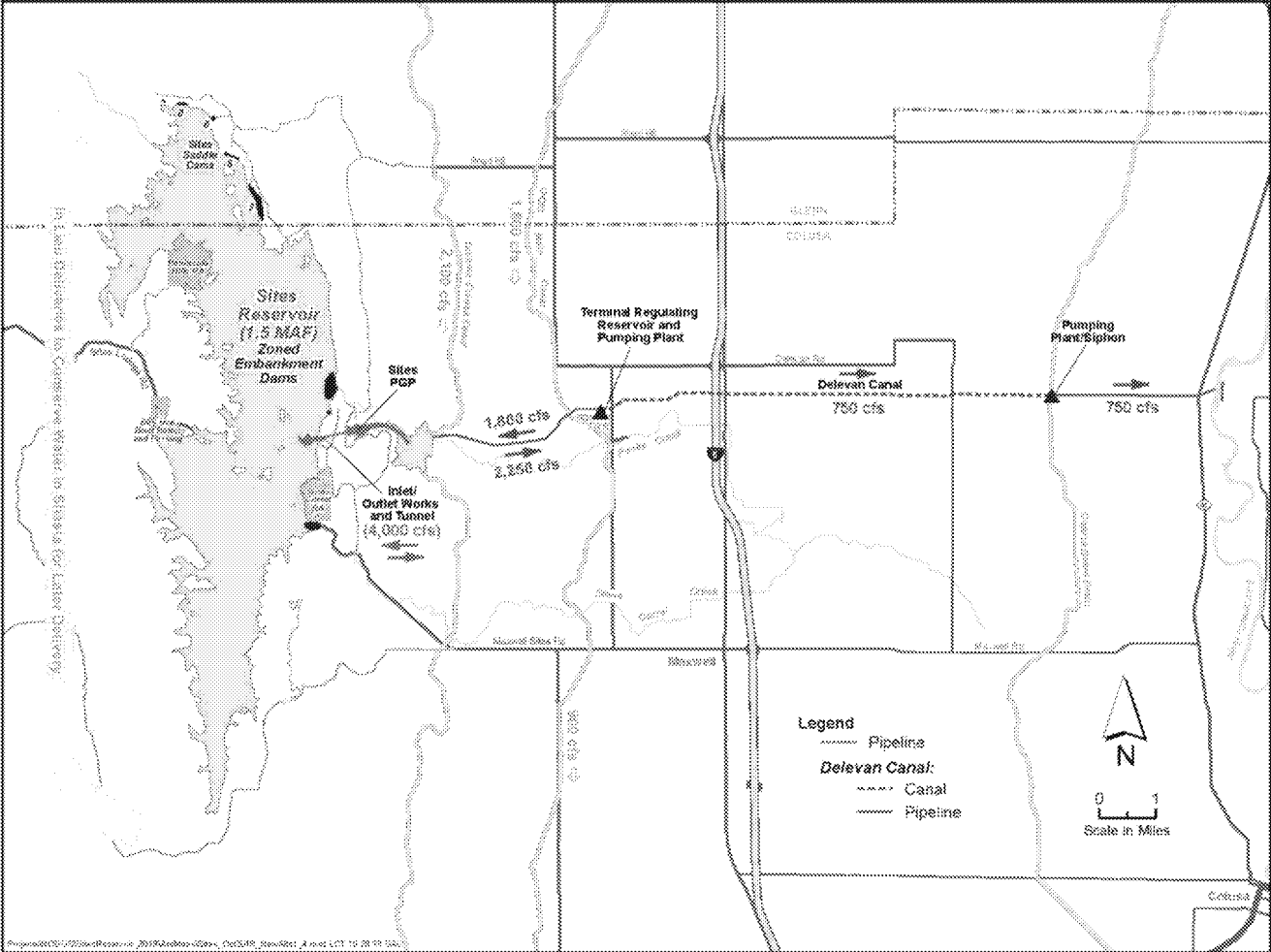


Figure 2

# Alternative 3 – Similar to Alternative 1, but replaces Sites PGP with the Tehama-Colusa Regulating Reservoir and PP and modified TRR - \$3.9B

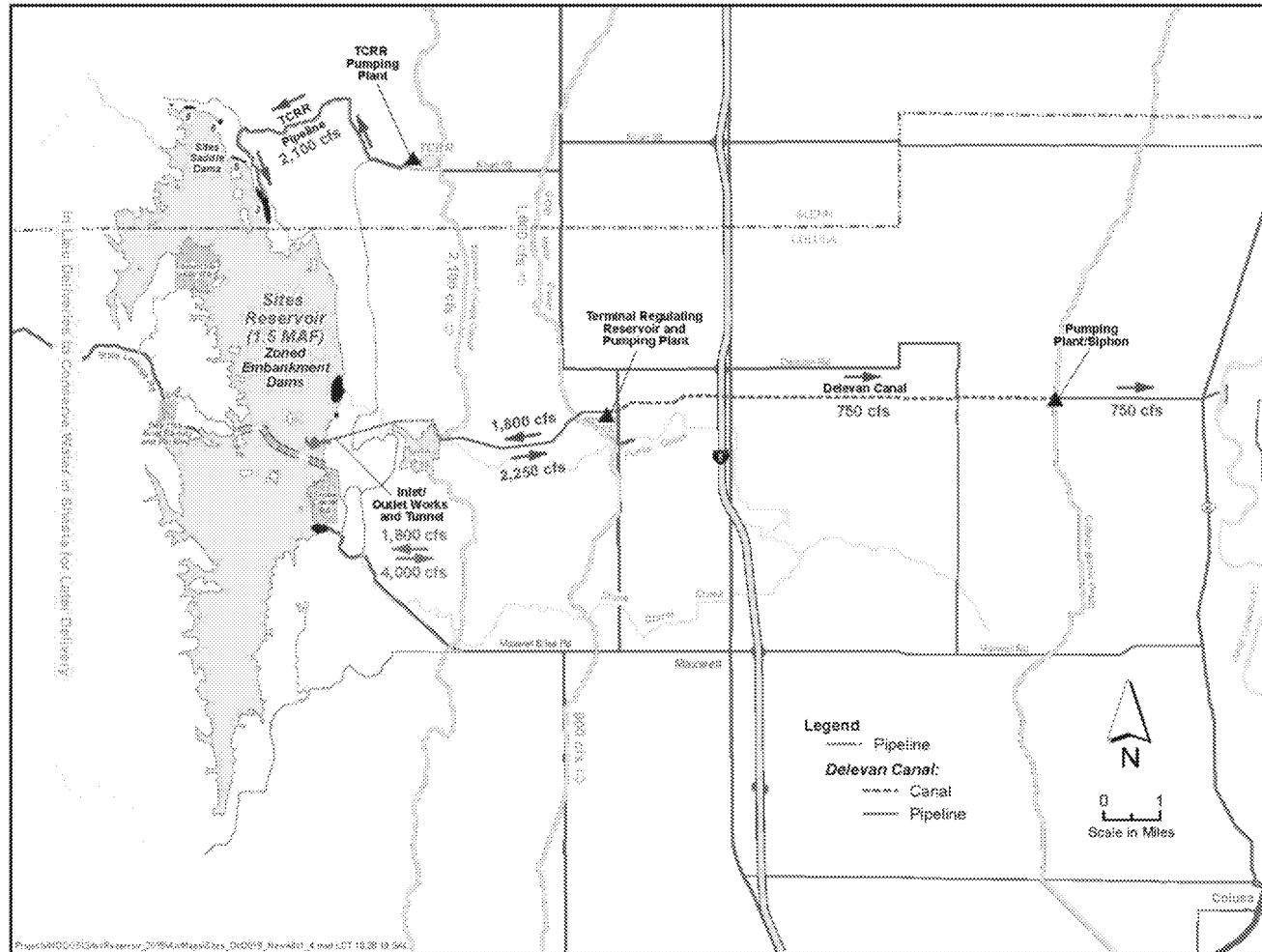


Figure 3



# Alternative 4a – Same as Alternative 1 but replaces the zoned rockfill embankment dam with an earthfill dam – \$3.8B

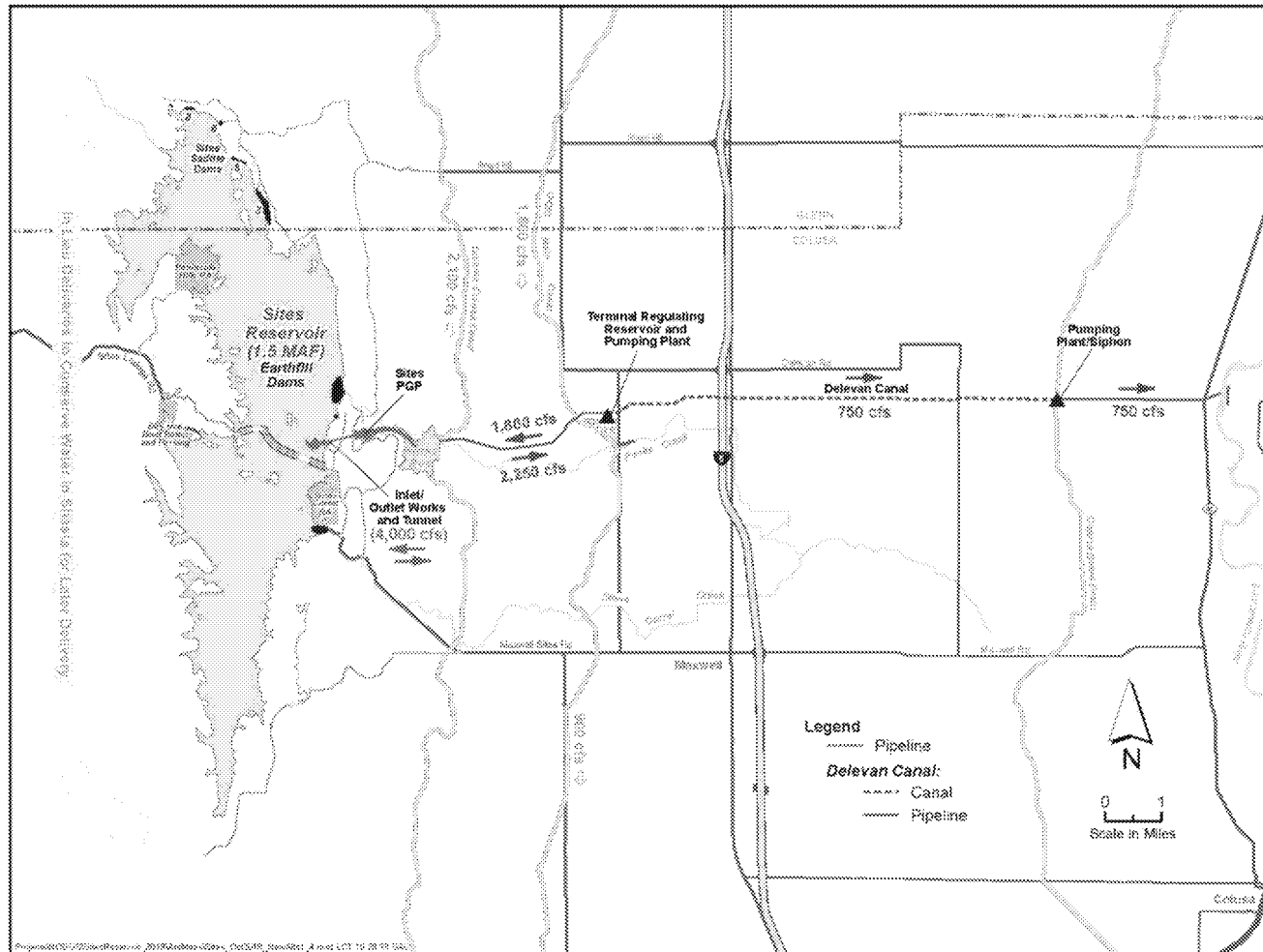


Figure 4a

# Alternative 4b – Same as Alternative 1 but replaces the zoned rockfill embankment dam with a hardfill dam – \$3.9B

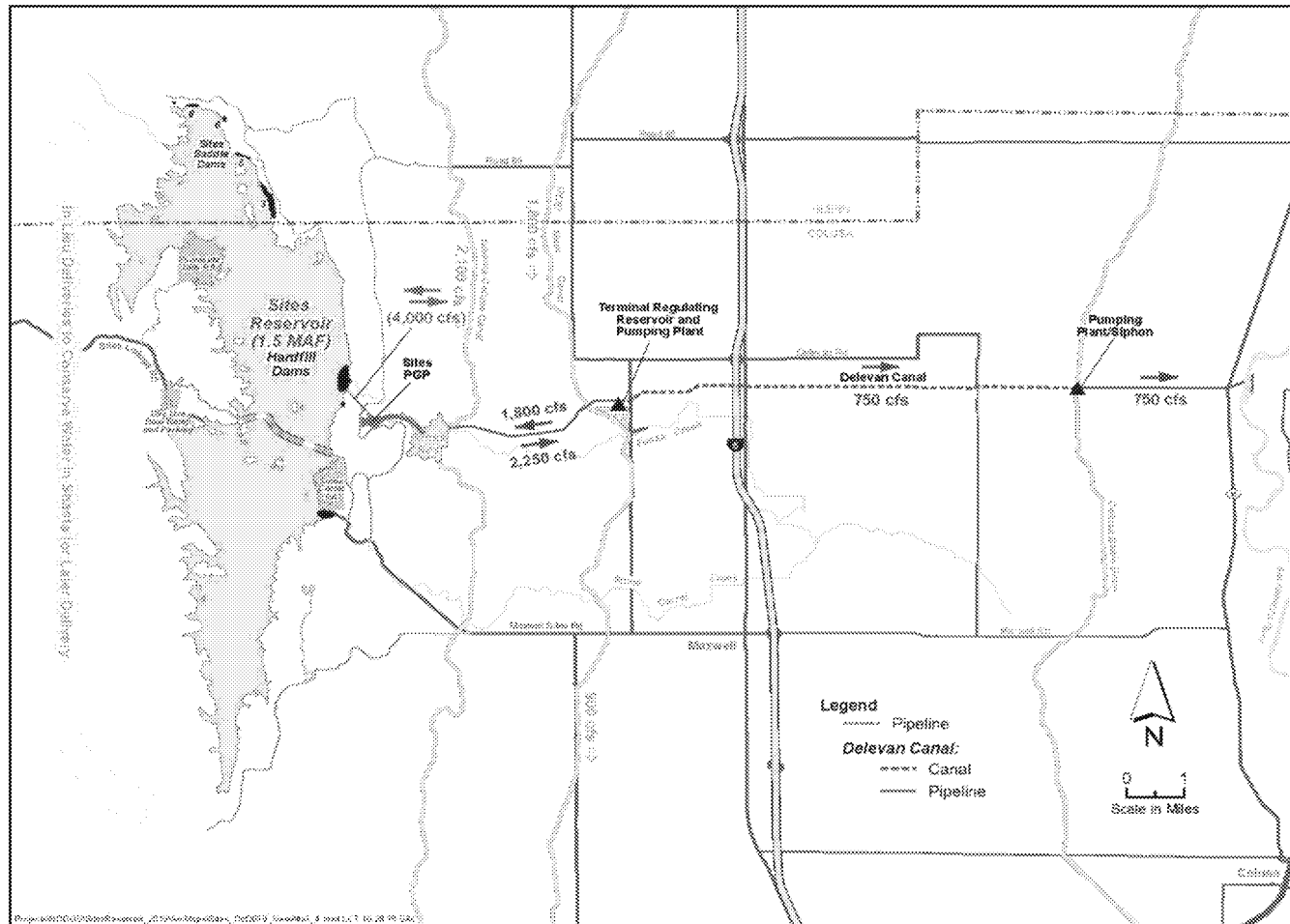
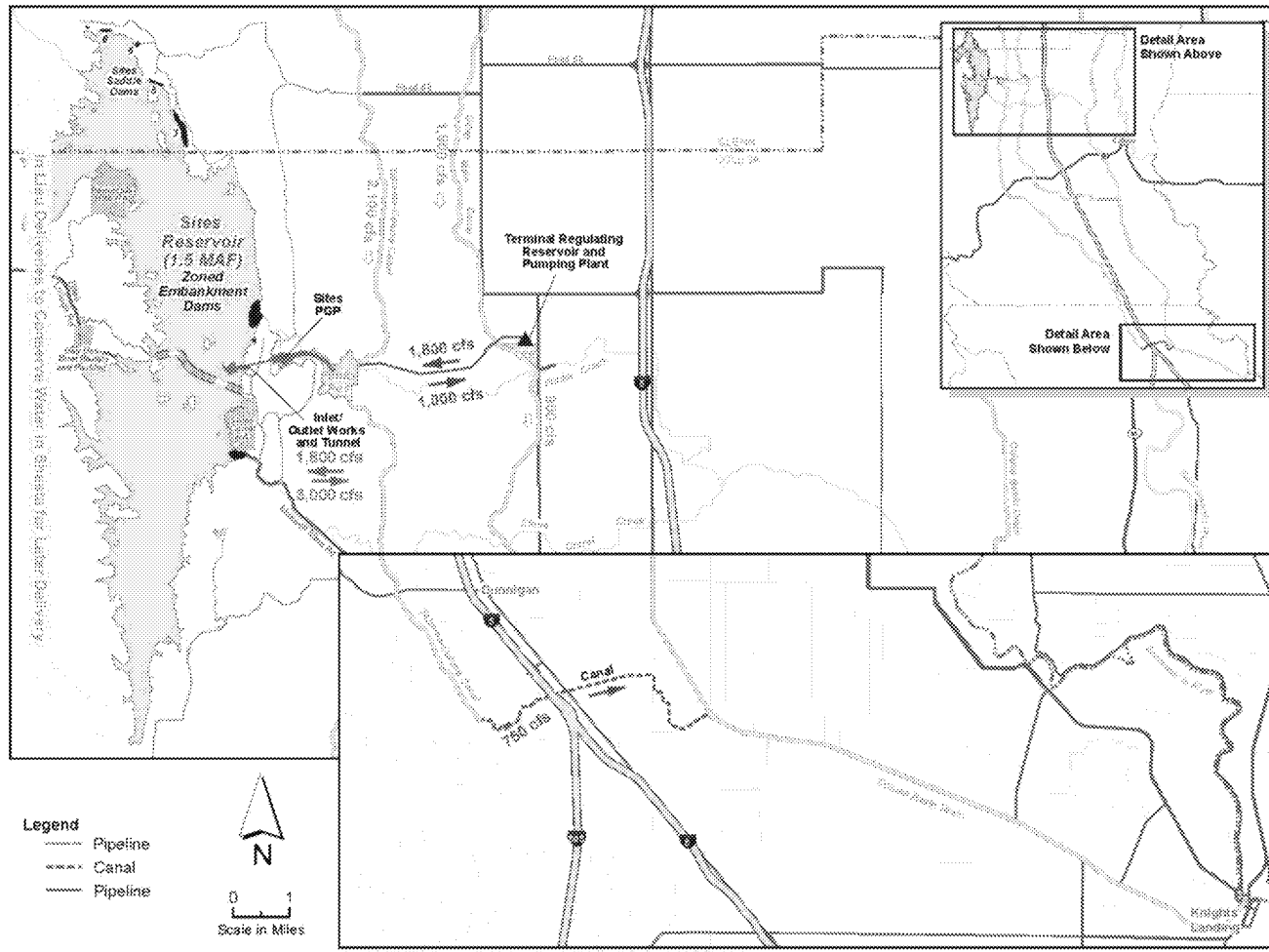


Figure 4b



# Alternative 5a – Similar to Alt 1, but replaces Delevan Canal/ Pipeline with pipeline/canal release from the Dunnigan Canal to the Colusa Basin Drain, thence through the lower portion of the Colusa Basis Drain to the Sacramento River - \$3.5B



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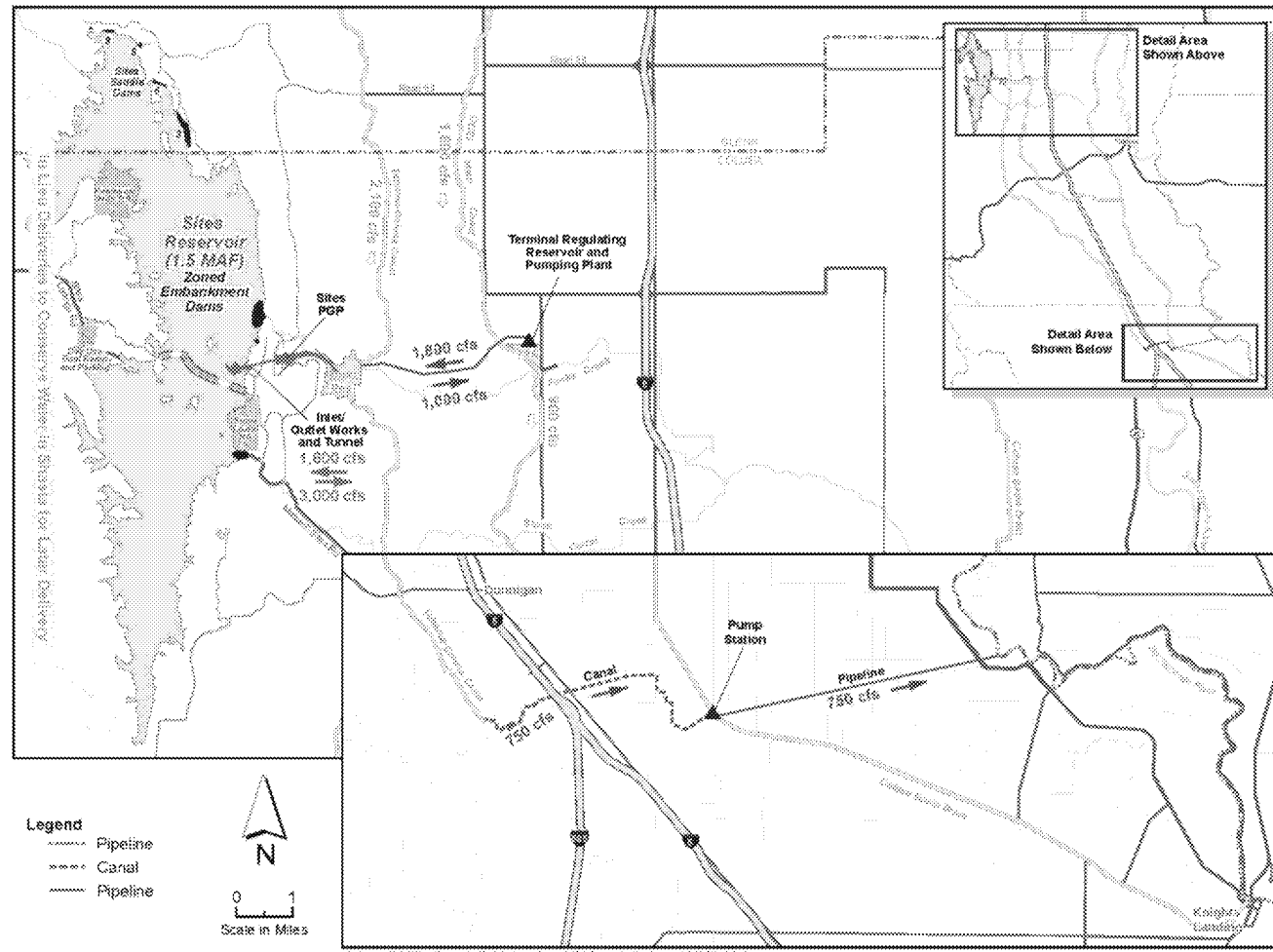


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# Alternative 6a – Lowest cost combination of Alt 3, 4 and 5a – replace Sites PGP with 2 smaller facilities, Dunnigan release to the CBD, and an earthfill dam - \$3.4B

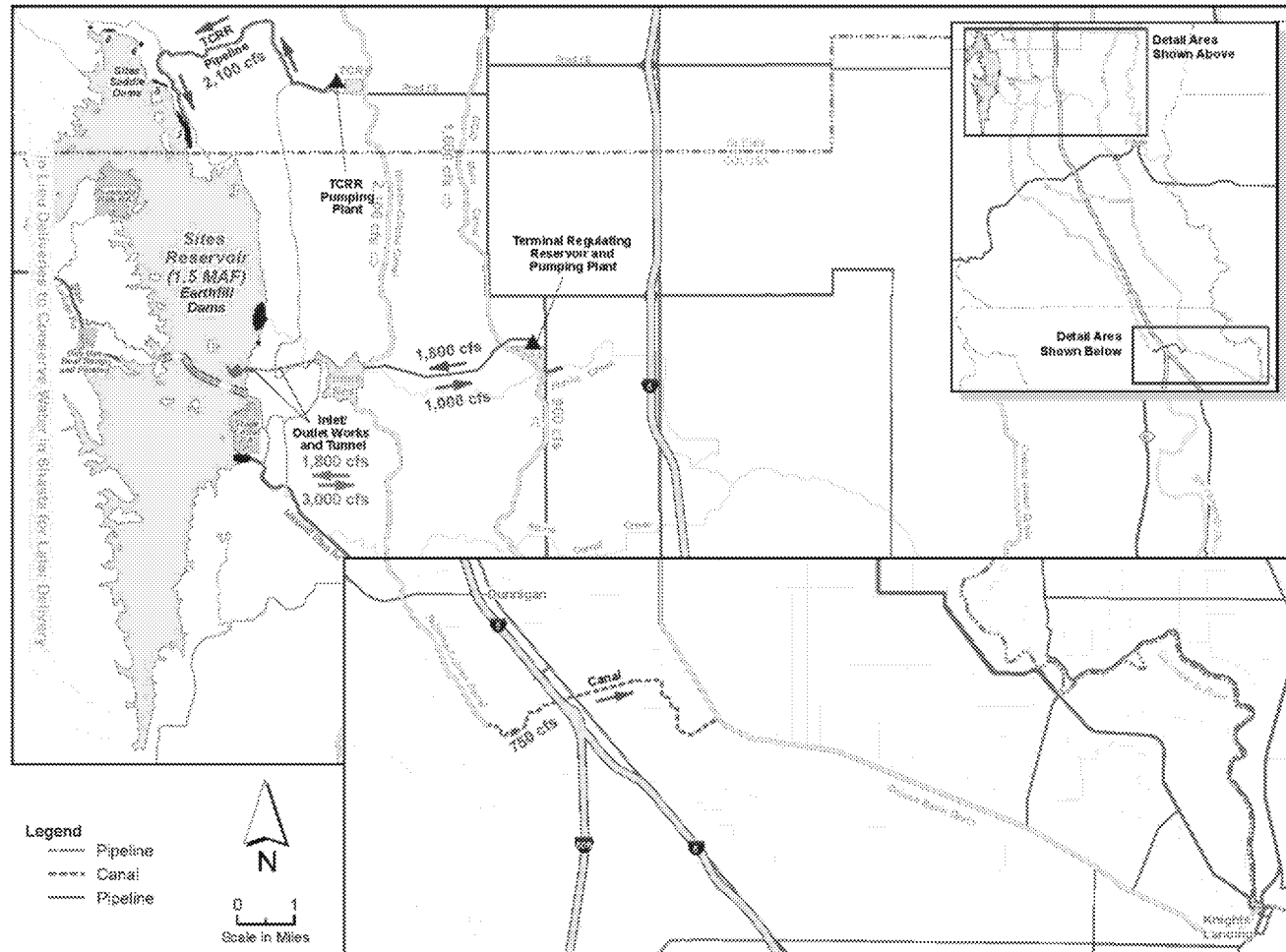


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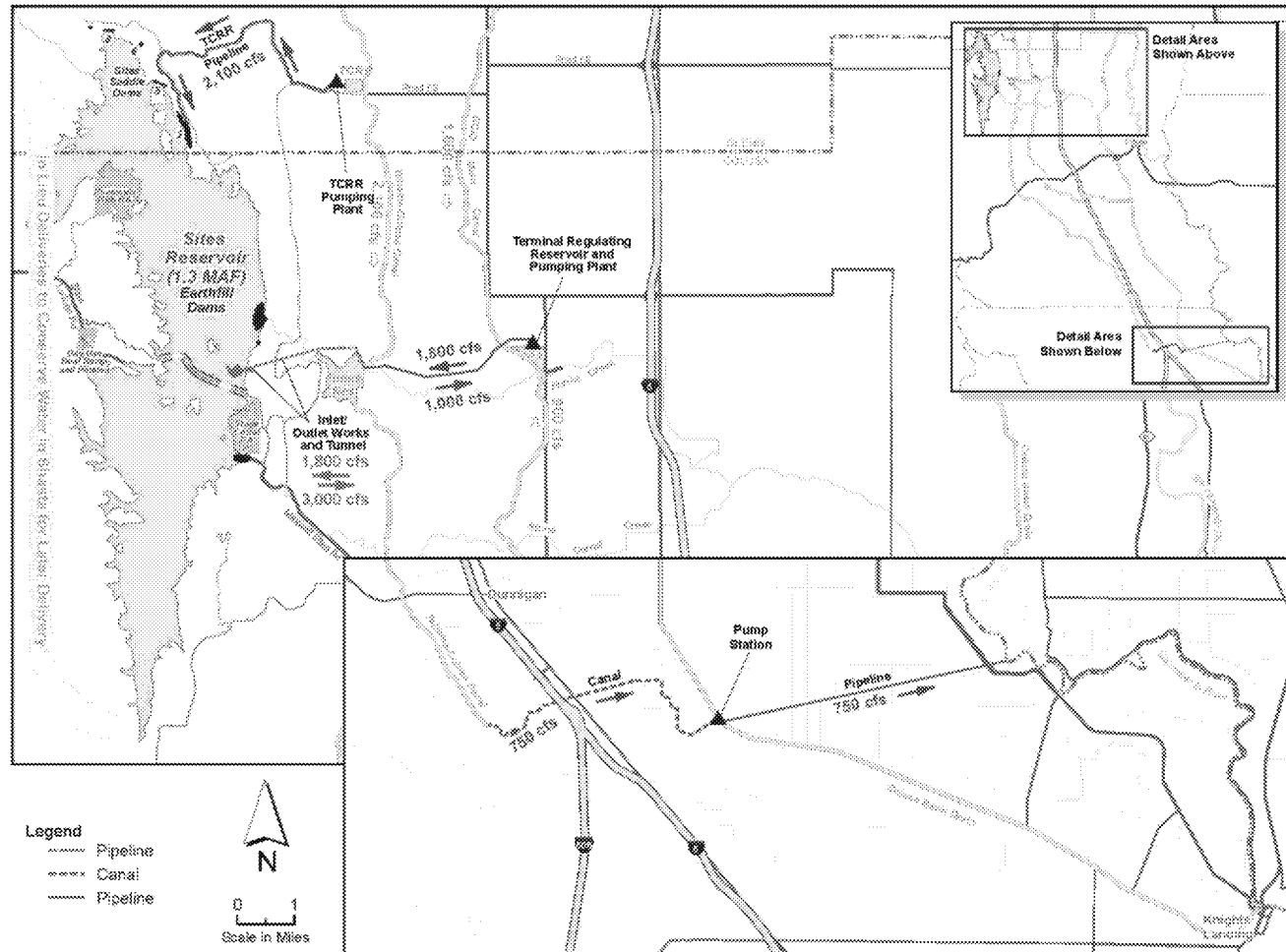


Figure 6b

# Estimated Project Costs

Alternative	Estimated Costs (\$2018) (financing cost not included)	Cost Reduction from Alternative D
Alternative D	\$5,235 million	0%
Alternative 1	\$3,970 million	24%
Alternative 2	\$3,988 million	24%
Alternative 3	\$3,868 million	26%
Alternative 4a	\$3,828 million	27%
Alternative 4b	\$3,861 million	26%
Alternative 5a	\$3,548 million	32%
Alternative 5b	\$3,876 million	26%
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- Alternative Project Costs Range from \$3.4 to \$4.0B versus \$5.2B for Alternative D
- Alternative D includes \$218M of Risk (4.2%) from the February 2018 Risk Analysis. Value Planning estimates do not include risk adjustment or analysis.

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# OPERATIONS AND REPAYMENT STATUS

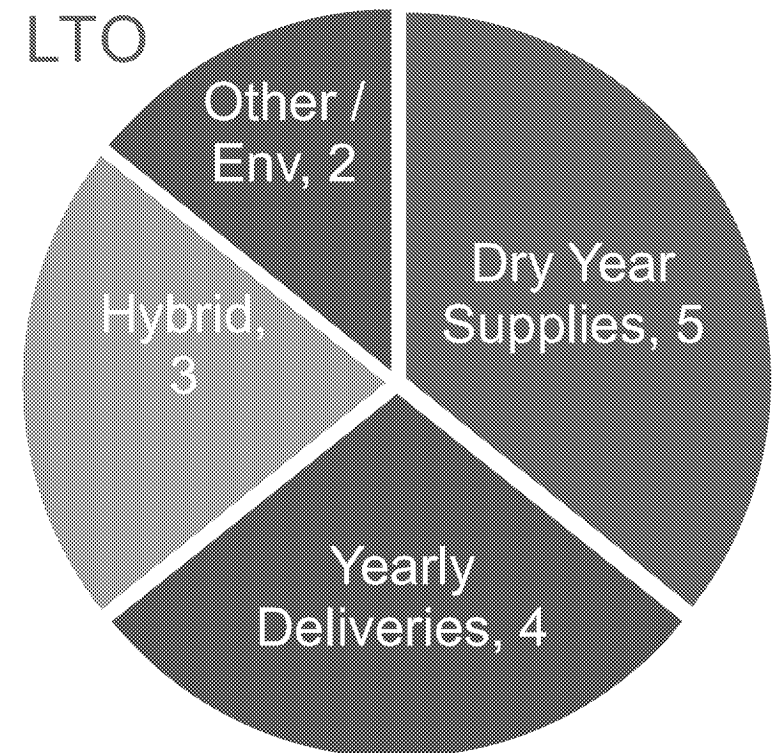




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(2019 August)

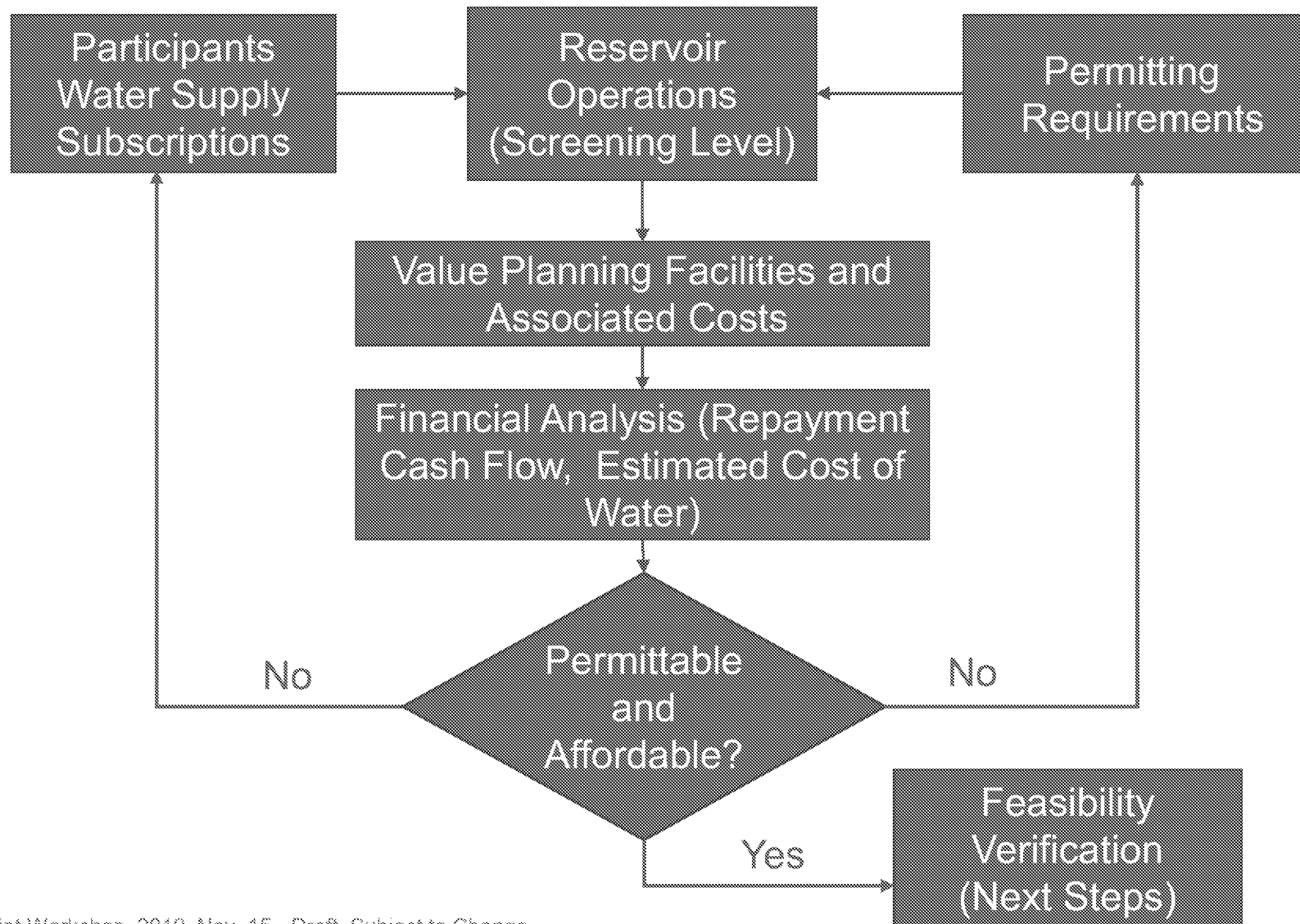
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- Diverse set of drivers  
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- Participation increases as  
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# Purpose of the Operations and Repayment Analysis

- Provide information regarding the potential range of cost of water in terms of annual repayment and operational costs
- Provide information regarding the potential range of annual cash flow requirements

# Operations and Repayment Analysis Process (Background)



# Participation Assumptions

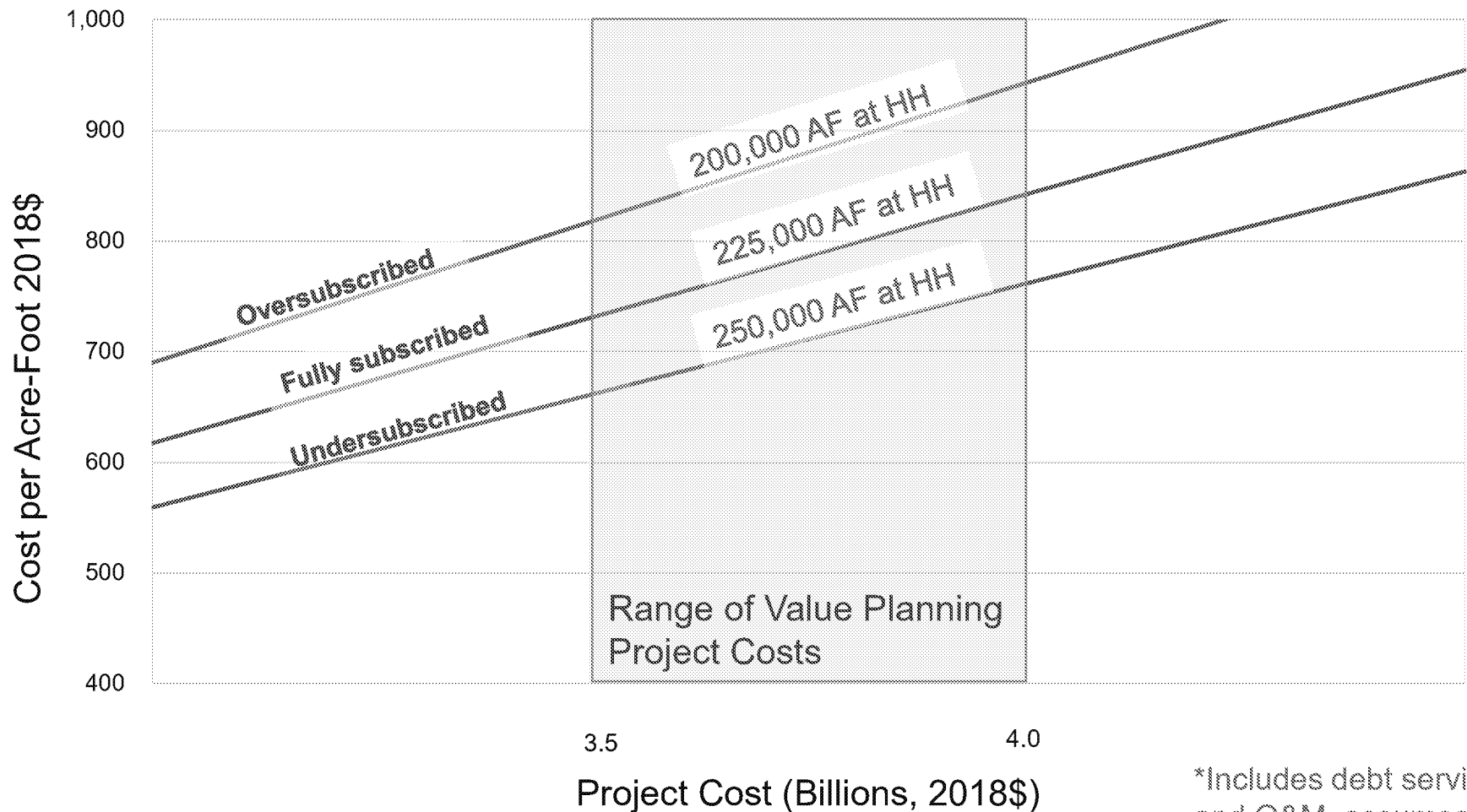
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- State based on Proposition 1 WSIP funding:
  - Total funding is \$816M
  - Deduct \$241.8M flood control and recreation benefits
  - Portion for environmental water supply is ~16,000 to 35,000 AFY
  - Assumes a separate storage account is used to cover O&M for environmental water

# Financial Working Assumptions

Item	Value
<b>Interim Loan</b>	
Interest Rate	3.00%
Unutilized Rate	0.75%
<b>Revenue Bonds</b>	
Interest Rate	5.00%
DSRF% of Maximum Annual Debt Service	50%
DSRF Earnings Rate	4.00%
Bond Fund Interest Earnings Rate	2.00%
First Maturity	12/1/2032
Final Maturity	6/1/2066
<b>USDA Loan</b>	
Interest Rate	3.875%
<b>WIFIA Loan</b>	
Interest Rate	3.500%
Construction Risk Mitigation Percentage	4.20%
<b>Inflation Escalators</b>	
Pre-Construction Escalation/year	1.50%
Construction Escalation/year	2.02%
Labor Inflation Rate/year	2.00%
Non-Labor inflation rate/year	2.00%
Electrical Generation Price Escalation/year	2.00%
Months for Generation post COD	24

# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan



# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
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225,000	670	780	890	1,000	
200,000	750	870	1,000	1,120	
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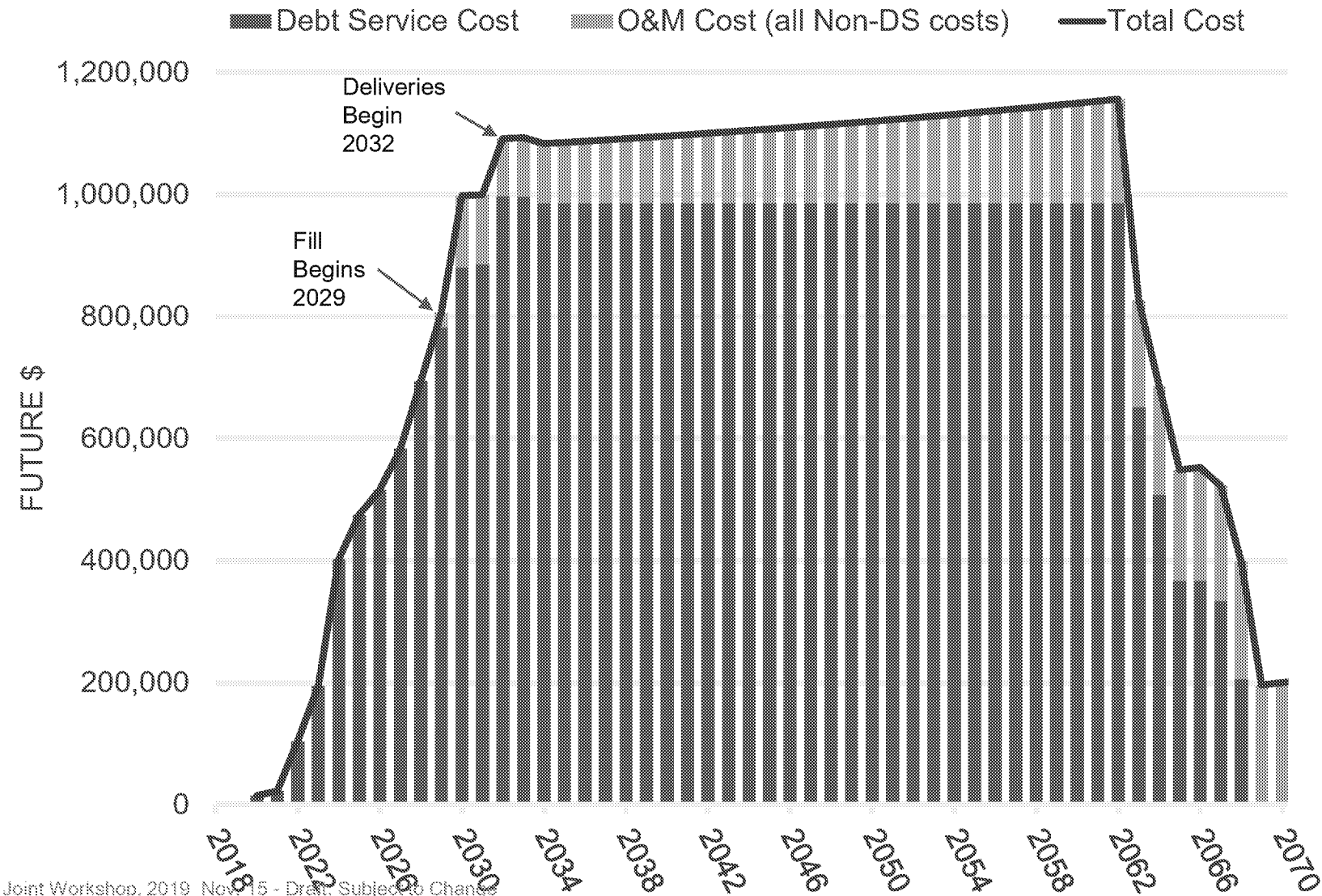
# SIMPLIFIED REPAYMENT TOOL



# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)

# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations



# Simplified Repayment Tool Demonstration

Input in green cells	Reservoir Cost (\$billions, \$2018)				3.5
	AF Water Deliveries at Holthouse				225
	Include WIFIA (yes=1, no=0)?				1
	Participation Level				1,000
Water Deliveries (AF)	Reservoir Cost (\$2018, billions)				
	3.0	3.5	4.0	4.5	
	Total \$/AF Released (w/o WIFIA) (2018\$)				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	



# NEAR TERM IMPLEMENTATION



# Where does the Project go from here? (1 of 3)

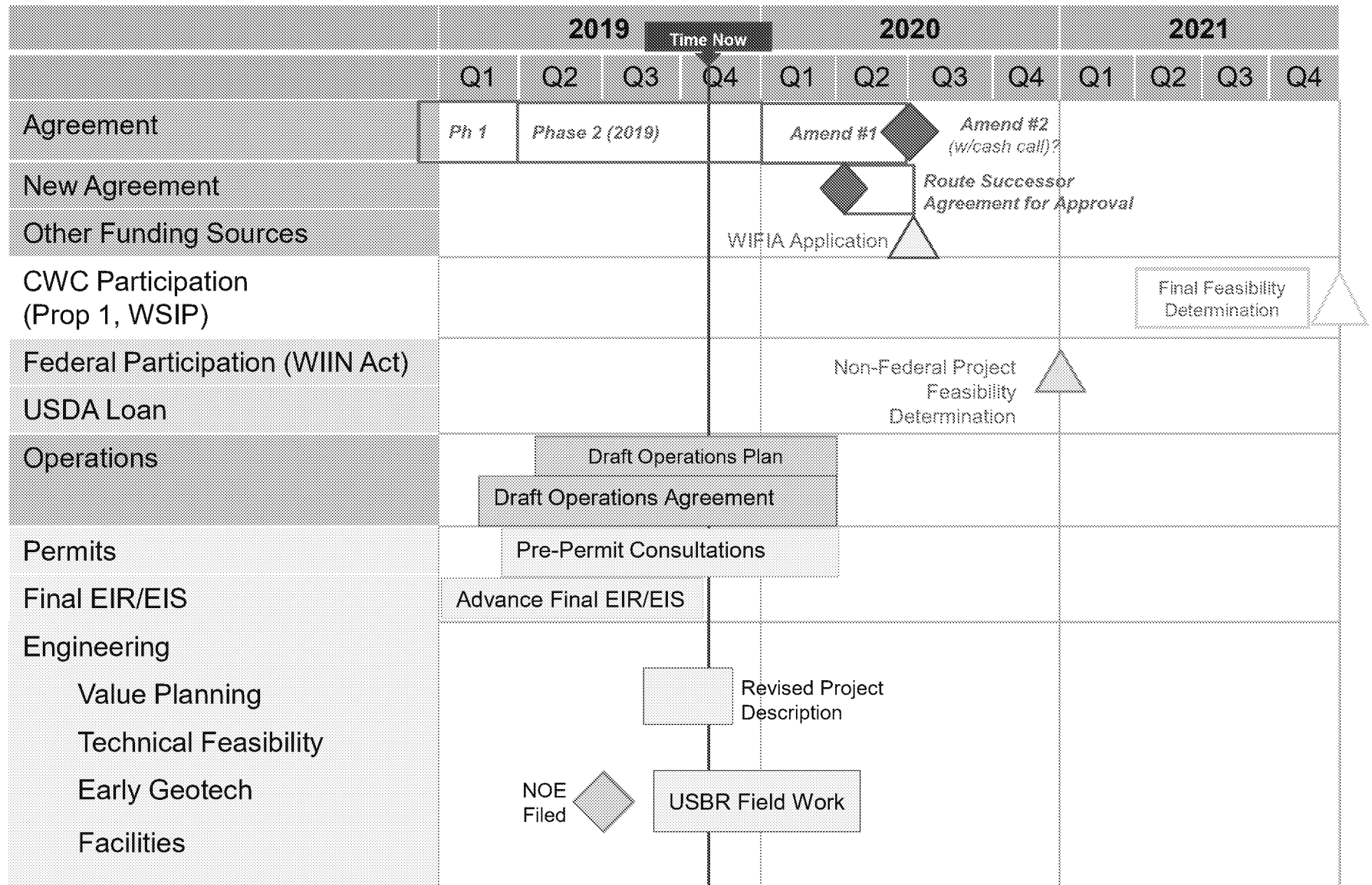
- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?

# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
- Continue discussions with Reclamation regarding Operations Principles and Sites/Shasta exchanges? Work to develop a Financial Assistance Agreement for funding via the WIIN Act?
- Determine if further Value Planning should run in series with or parallel to discussions with Reclamation regarding Sites/Shasta exchanges?
- Identify criteria for, and proceed to narrow, the Alternatives?
- Determine if the Project Description should be revised and what changes are needed to the EIR/EIS?
- Update or conduct a new risk analysis for the preferred Value Planning alternatives?



# Where does the Project go from here? (3 of 3)



# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# Purpose of Workshop

- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

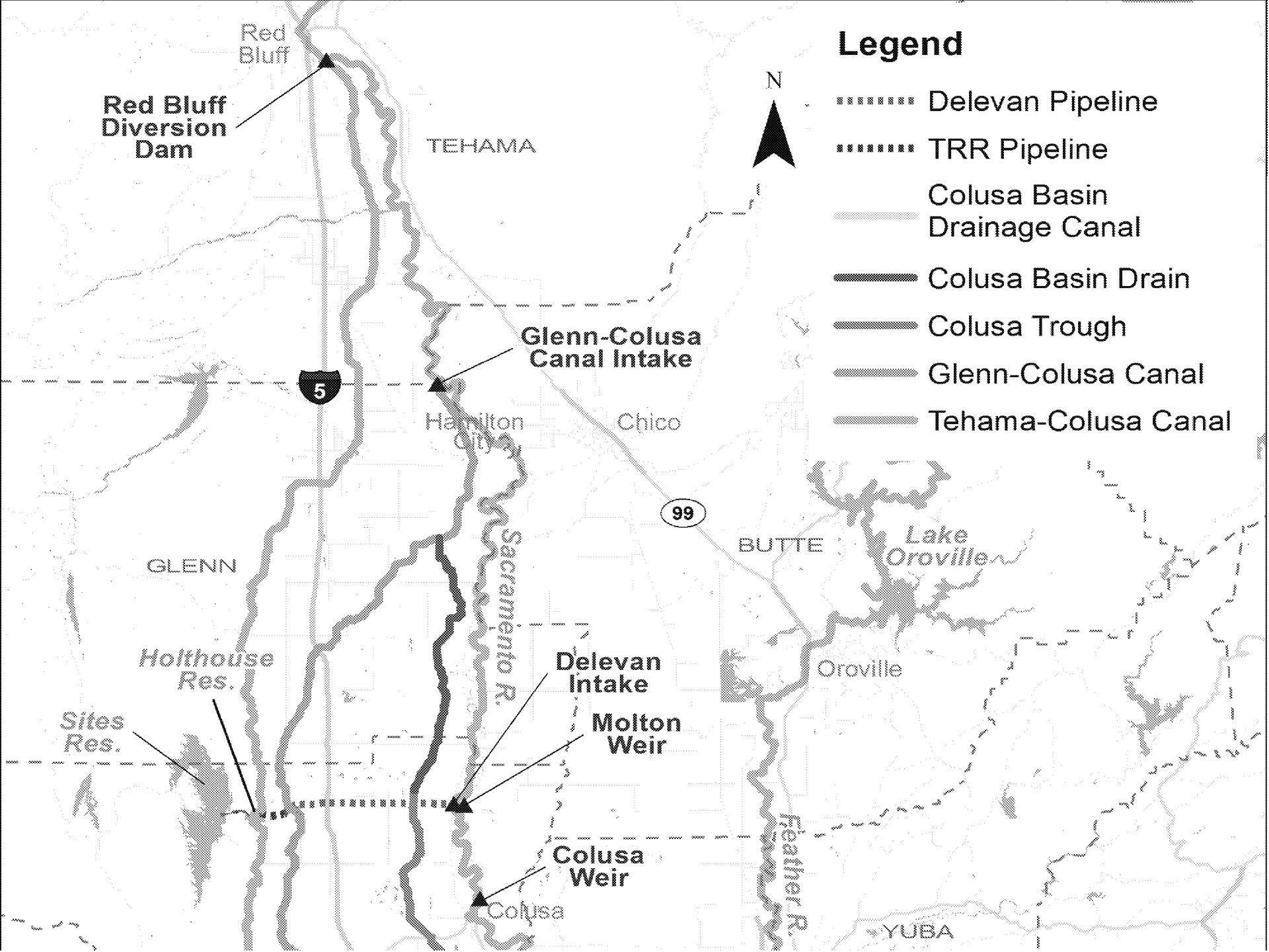


# OPERATIONAL CONSIDERATIONS STATUS



# Key Operational Activities

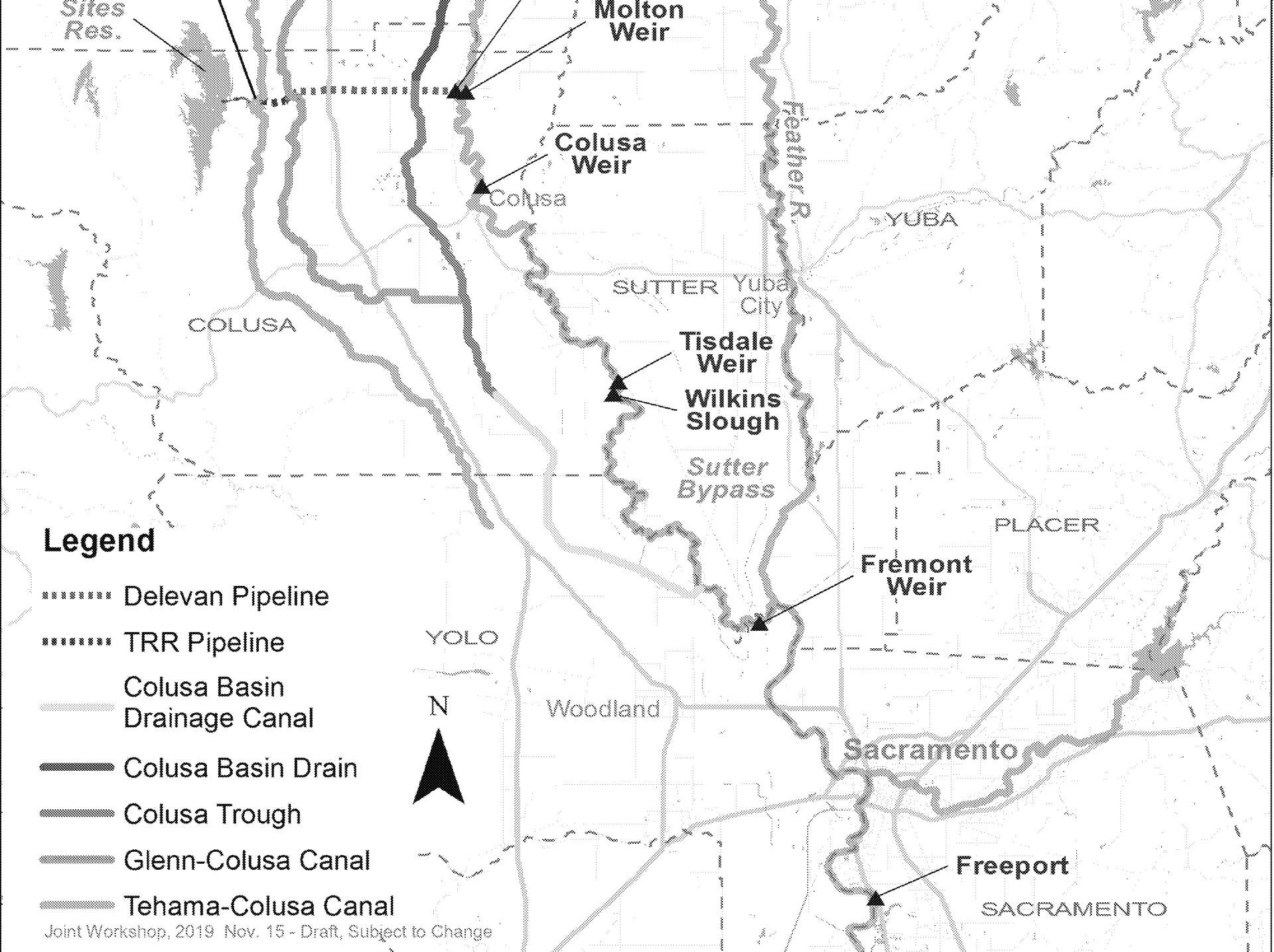
- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges



# Legend

- ..... Delevan Pipeline
- ..... TRR Pipeline
- Colusa Basin Drainage Canal
- Colusa Basin Drain
- Colusa Trough
- Glenn-Colusa Canal
- Tehama-Colusa Canal





# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
- Fremont Weir Notch
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Flows into the Sutter Bypass System
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Freeport Bypass Flow
  - Indicator of Delta survival for juvenile salmonids
- Net Delta Outflow Index (NDOI)
  - Spring NDOI directly correlates to fall longfin smelt population

# Recent Operations Modeling

- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
  - Incorporate ROC on LTO and new requirements from the NMFS Biological Opinion in the baseline

# Summary of Operational Scenarios Currently Being Discussed

Criteria	8,000 Wilkins with WaterFix Criteria	Scaled Diversion with WaterFix Criteria	Potential Revised Project – Sept 2019
Reservoir Size	1.5 MAF	1.5 MAF	1.5 MAF
Delevan Intake	Not included; Outlet only facility	Not included; Outlet only facility	Not included; Outlet only facility
Wilkins Slough Bypass Flow	8,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion
Fremont Weir Notch	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative
Flows into the Sutter Bypass System	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale
Freeport Bypass Flow	Modeled WaterFix Criteria (applied daily)	Modeled WaterFix Criteria (applied daily)	15,000 cfs Jan-March; 13,000 cfs in December; 11,000 cfs all other times (monthly average)
Net Delta Outflow Index (NDOI) Prior to Project Diversions	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	None; Minor changes in X2; Mitigation proposed
Total Deliveries (Average / Dry Year)	~220 TAF ~302 TAF	~234 TAF ~312 TAF	~332 TAF ~477 TAF

Potential Deliveries Range from 200,000 AF to 250,000 AF

# Major Permitting / Operations Challenges

- Challenges:
  - Magnitude of anticipated temperature benefit above Red Bluff need to be reassessed due to revised operational criteria
  - Discussions with Reclamation and analysis of water rights considerations on within year exchanges in Shasta are on-going
  - USFWS has announced it is updating the status review for longfin smelt and may propose it for listing under the Federal ESA but already consulting under CESA
  - Future Delta Conveyance and Voluntary Agreements may effect Sites operations and diversions but working to account for these in revised operational criteria

# Major Permitting / Operations Opportunities

- Opportunities:
  - Delta Conveyance, Voluntary Agreements, Eco Restore, and other projects present opportunities for improved fisheries conditions and for collaboration on science, monitoring and mitigation
  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

# Key Takeaways

- Permittable operations, reflecting current permitting discussions, may result in a range from 200,000 AF to 250,000 AF average annual deliveries at Holthouse
- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
- Additional detailed modeling on revised operational scenarios is needed to reduce uncertainties and refine analyses
- Additional discussions is needed with the regulatory agencies to develop and refine operational parameters to ensure they are implementable and meet the intended biological outcome



# VALUE PLANNING STATUS



# Overview

- Ad hoc representatives from the Reservoir Committee and Authority Board met on October 2 and 14, 2019 to discuss approaches that could potentially lower the cost of the project. AECOM and others conducted initial analyses on these approaches.
- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
- Appraisal level costs were developed in October 2015 dollars and escalated to 2018 dollars. These costs ranged from \$3.4 to \$4.0 billion (excluding risk management and financing costs) versus the \$5.2 billion for Alternative D.
- Authority agents developed comments on the appraisal evaluation but did not identify any “fatal flaws”.

# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

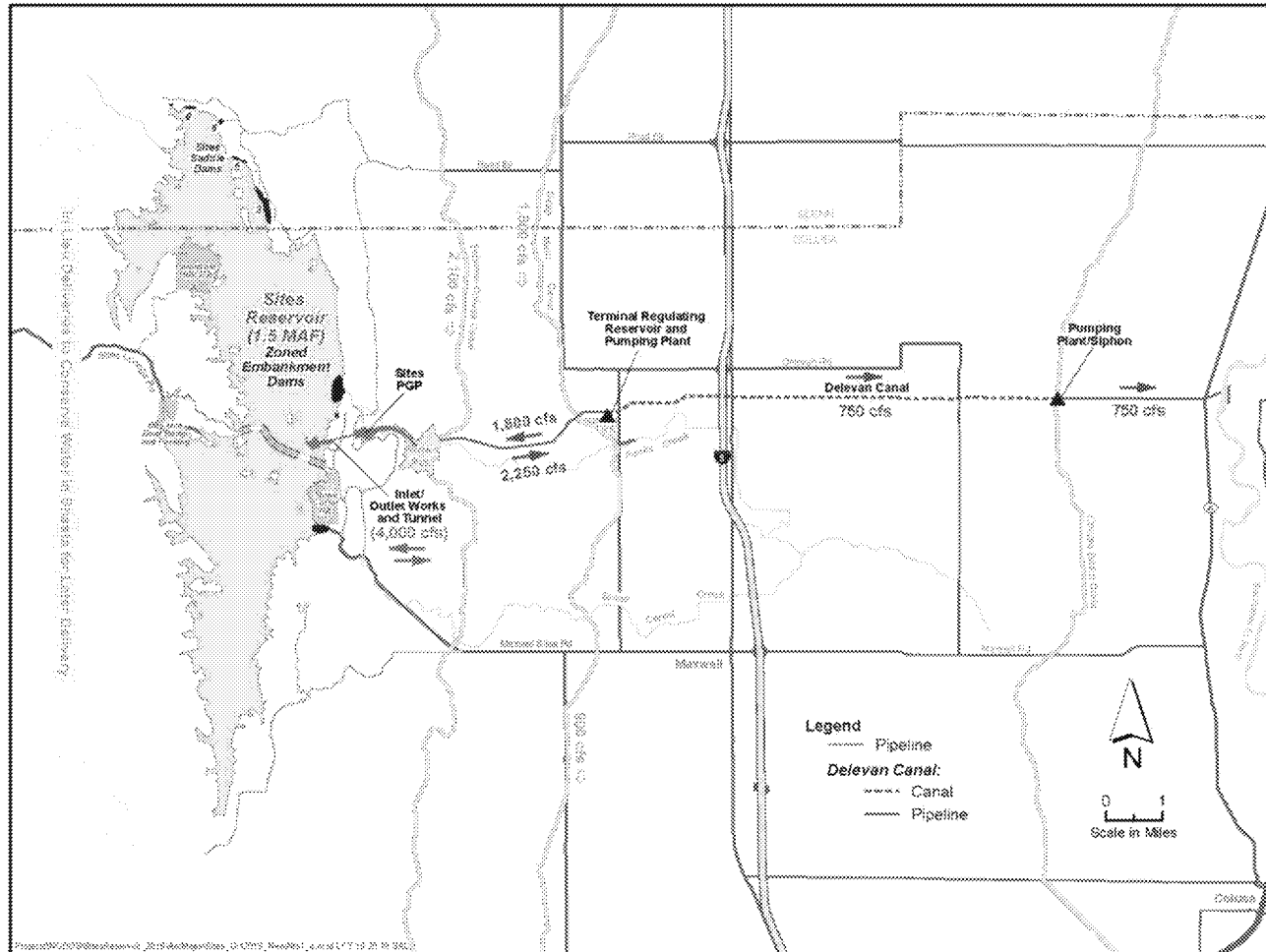
MAF = million acre feet

PGP = Pumping/Generating Plant

TCRR = Tehama-Colusa Regulating Reservoir

15 TRR = Terminal Regulating Reservoir

**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**



**Figure 1**

# Alternative 2 – Similar to Alternative 1 but uses the southern road alignment to Lodoga in place of the bridge - \$4.0B

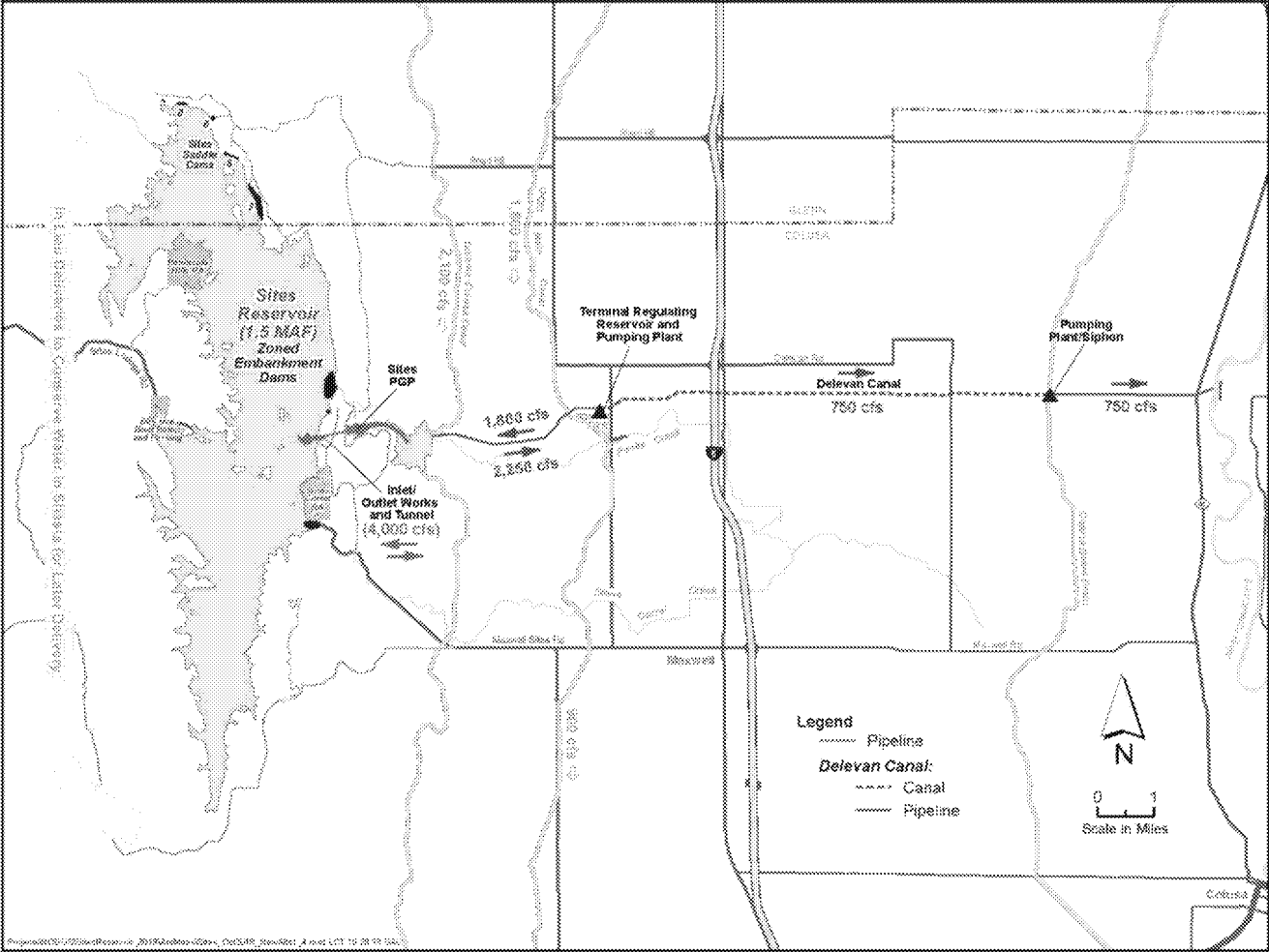


Figure 2

# Alternative 3 – Similar to Alternative 1, but replaces Sites PGP with the Tehama-Colusa Regulating Reservoir and PP and modified TRR - \$3.9B

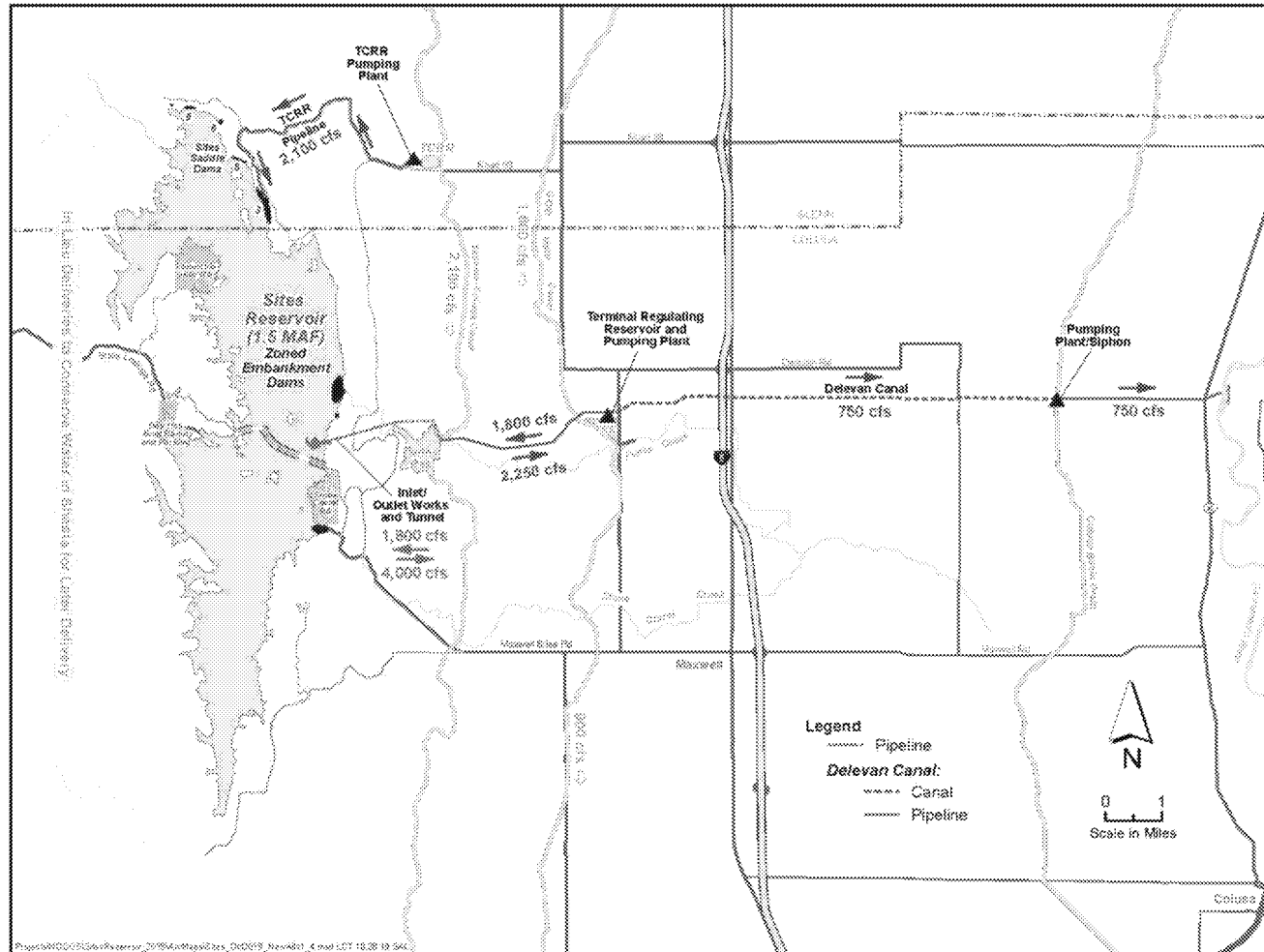


Figure 3



# Alternative 4a – Same as Alternative 1 but replaces the zoned rockfill embankment dam with an earthfill dam – \$3.8B

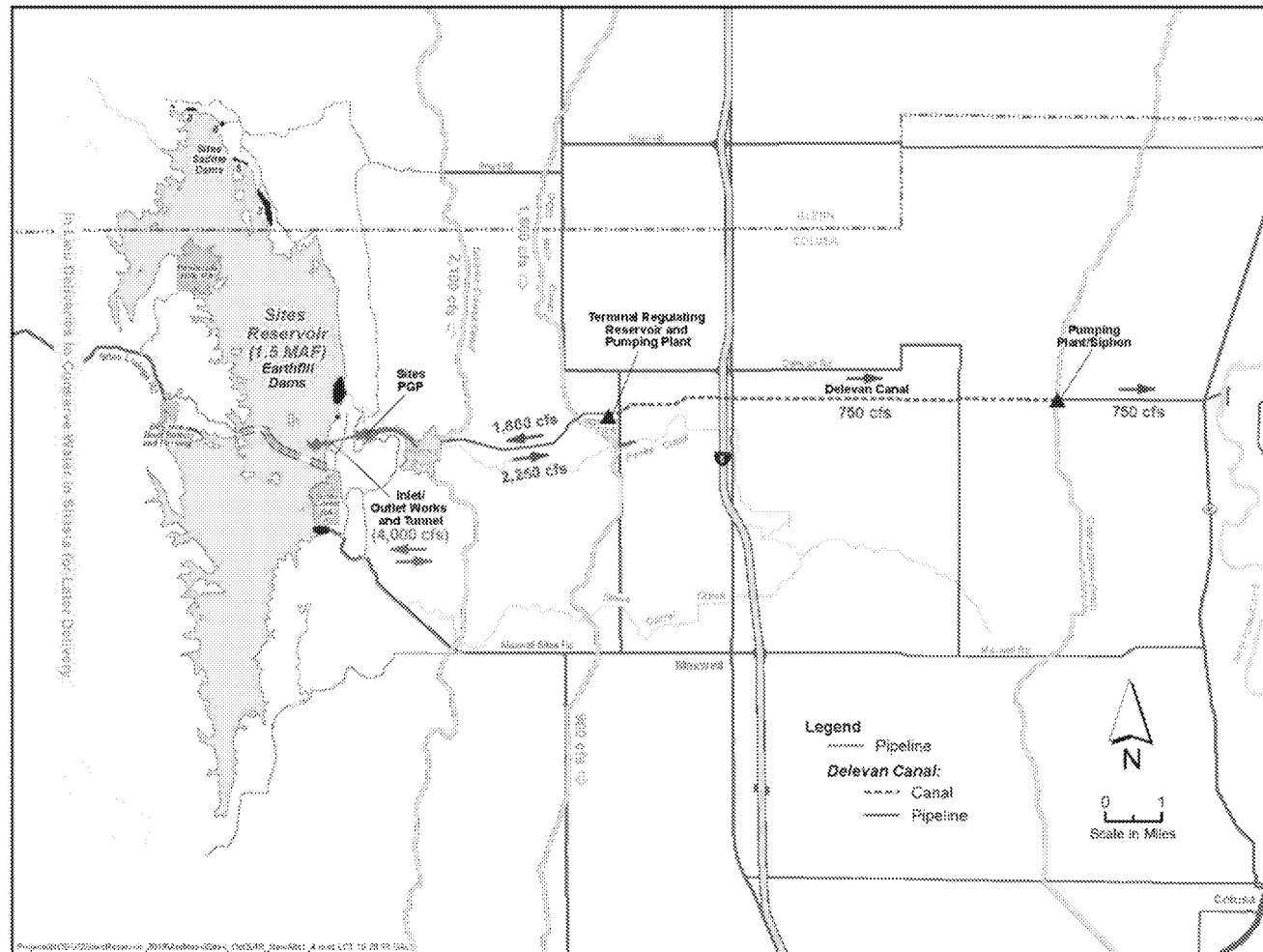


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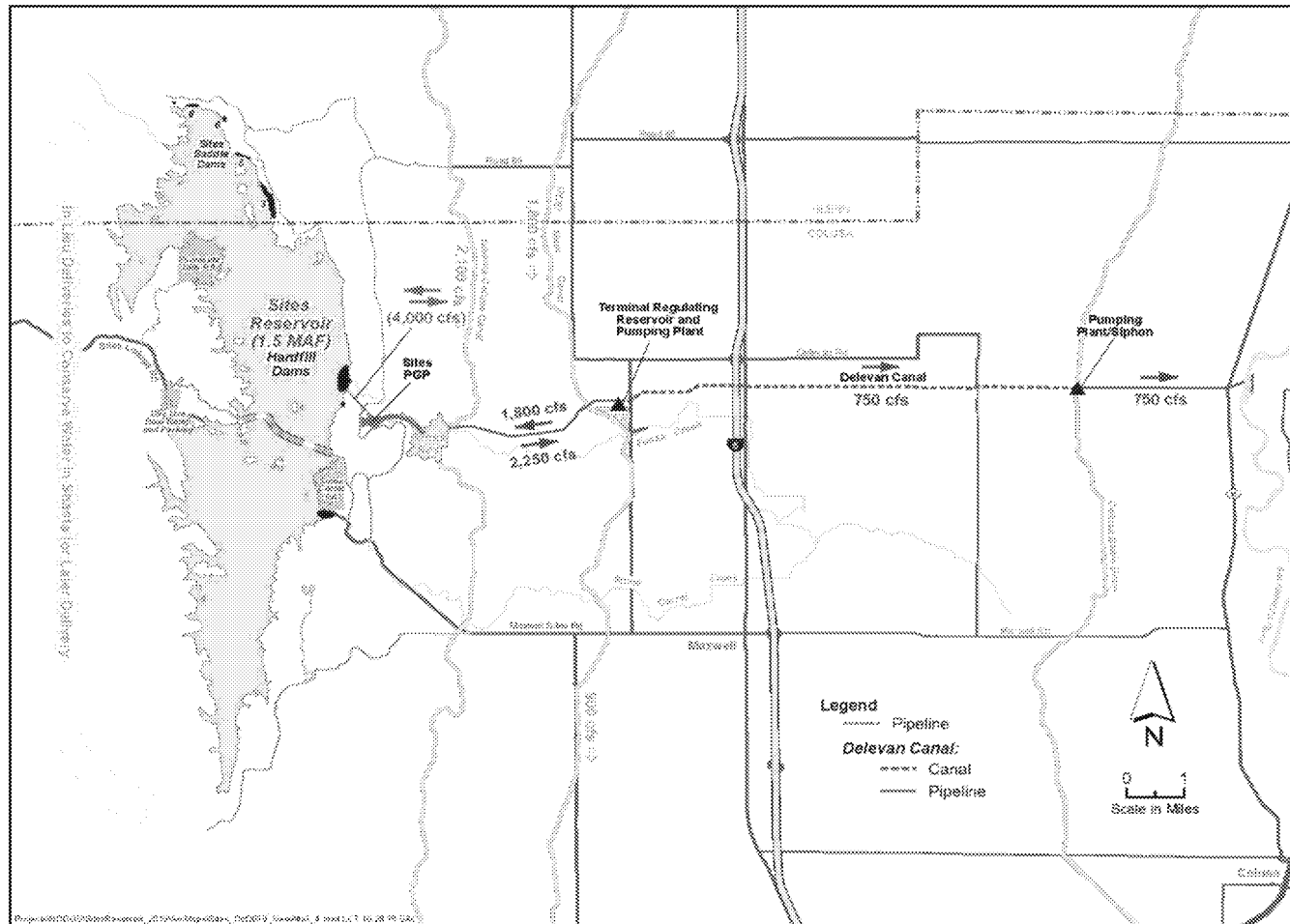
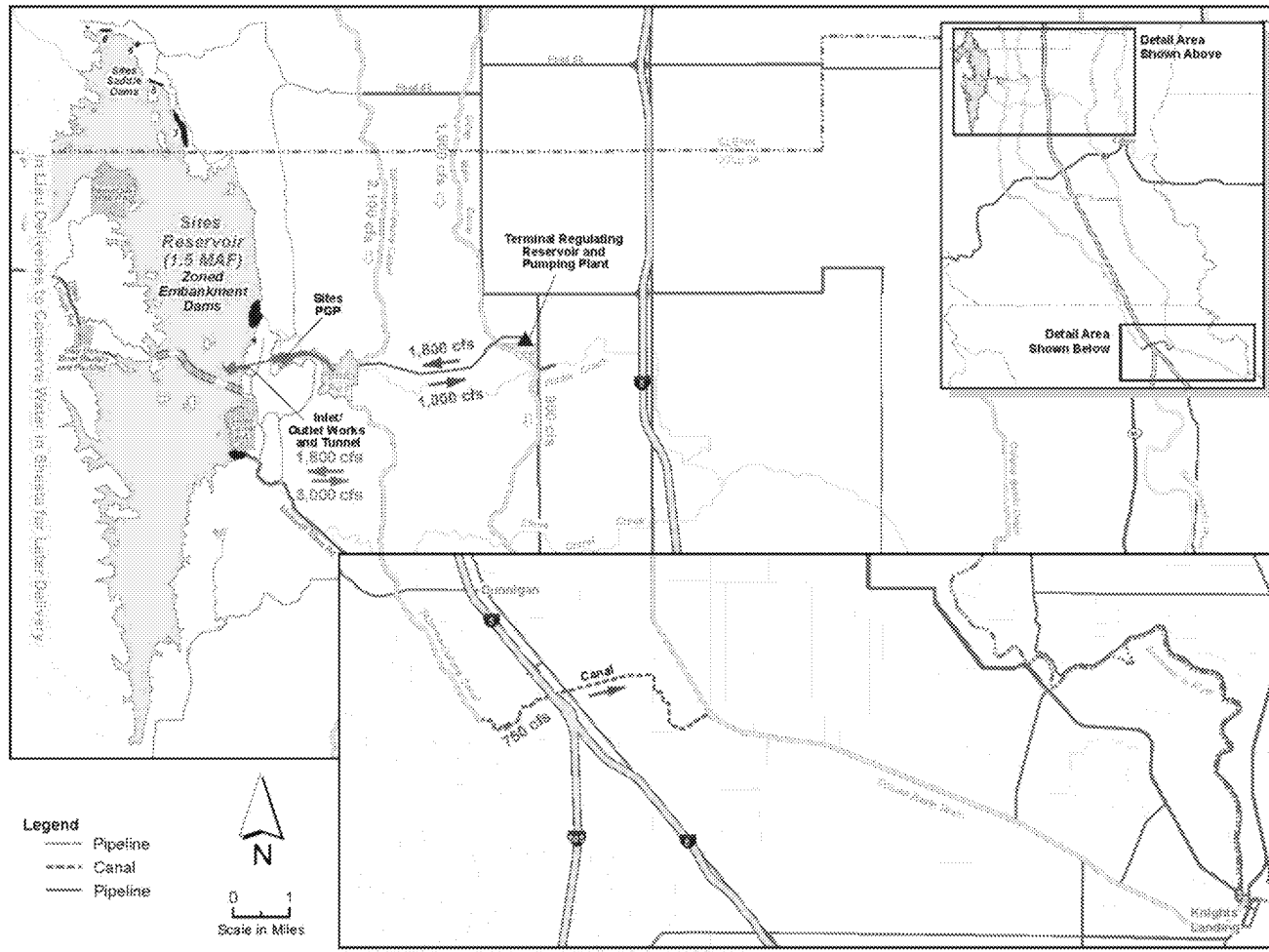


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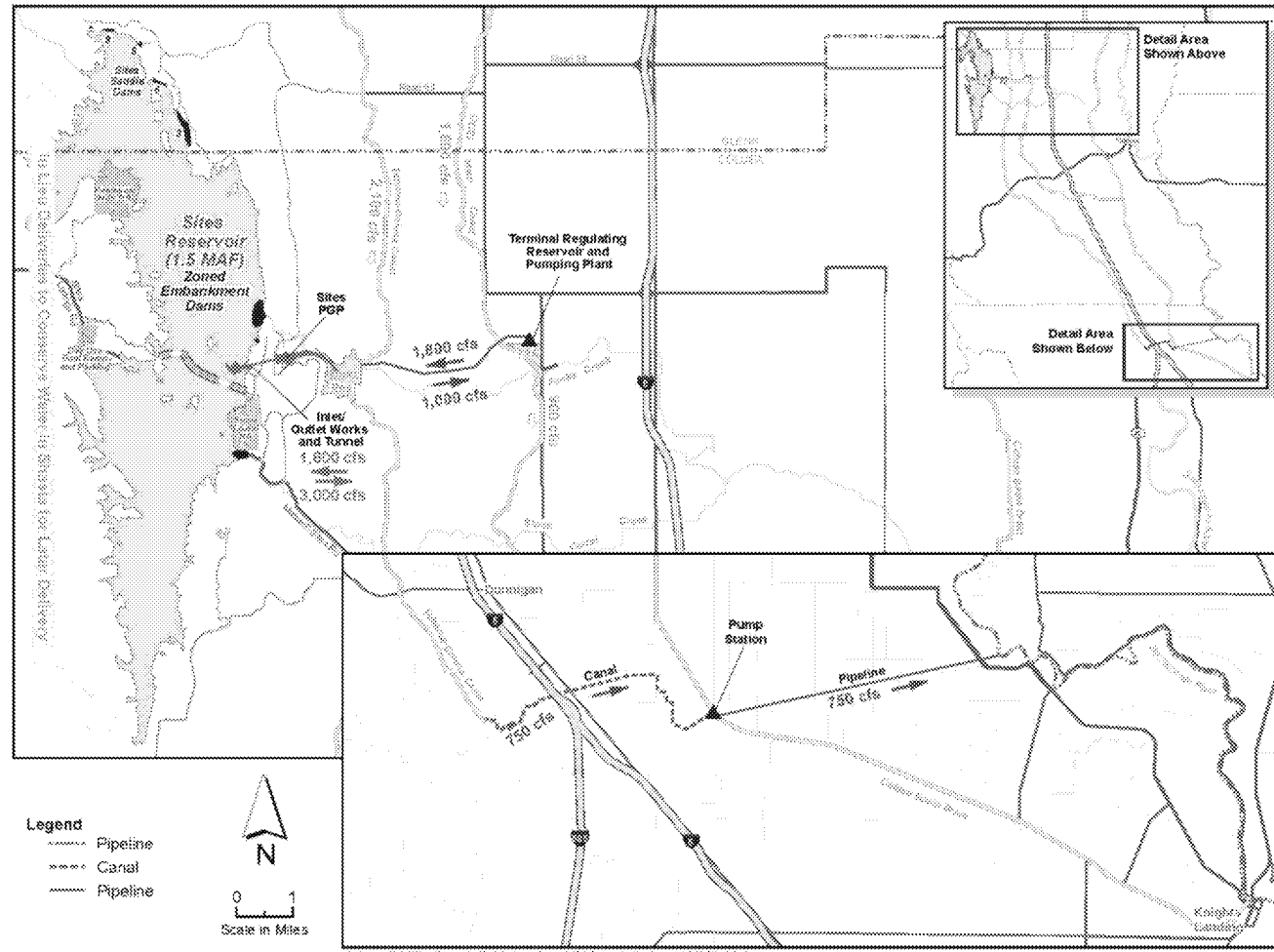


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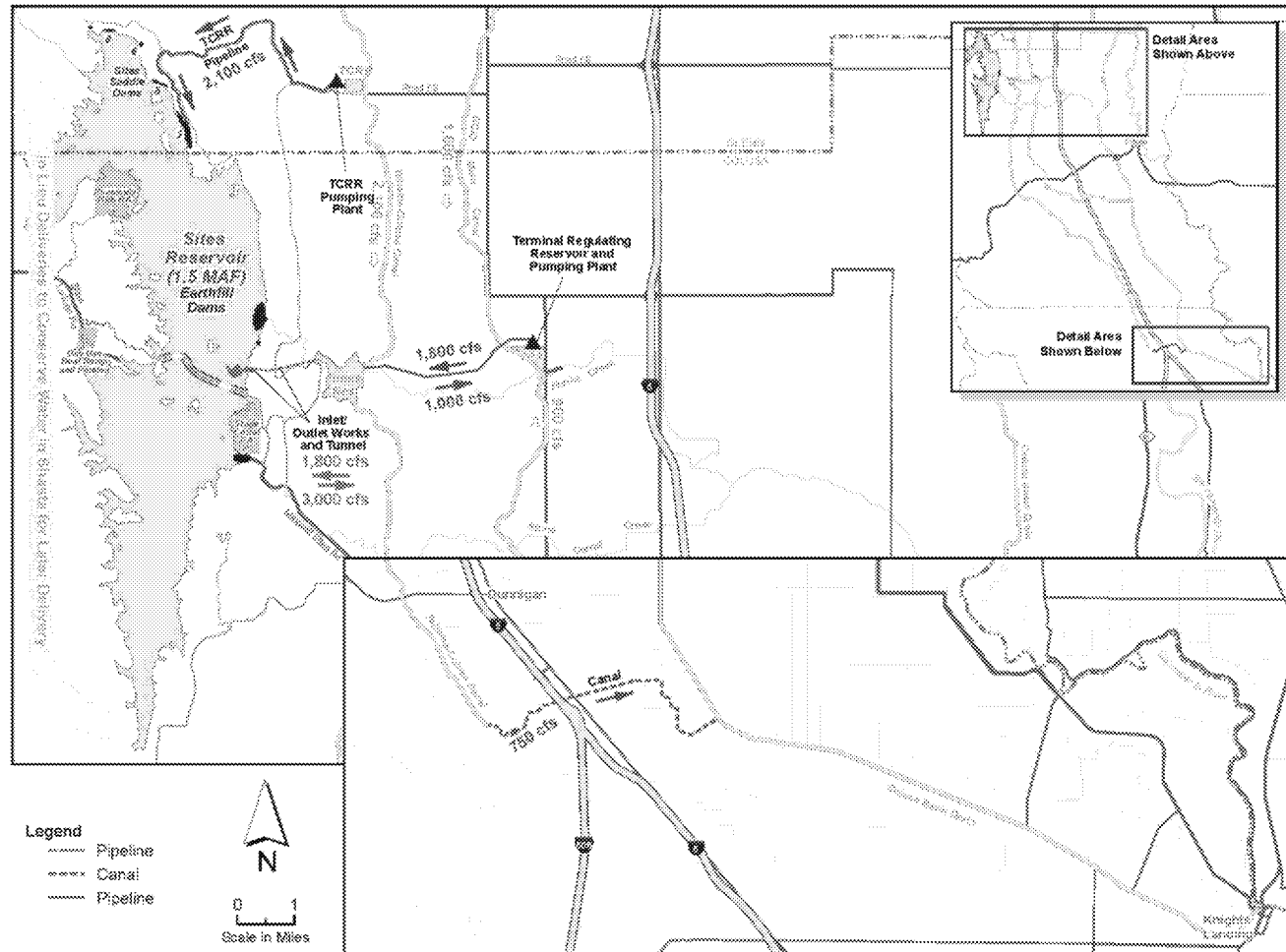
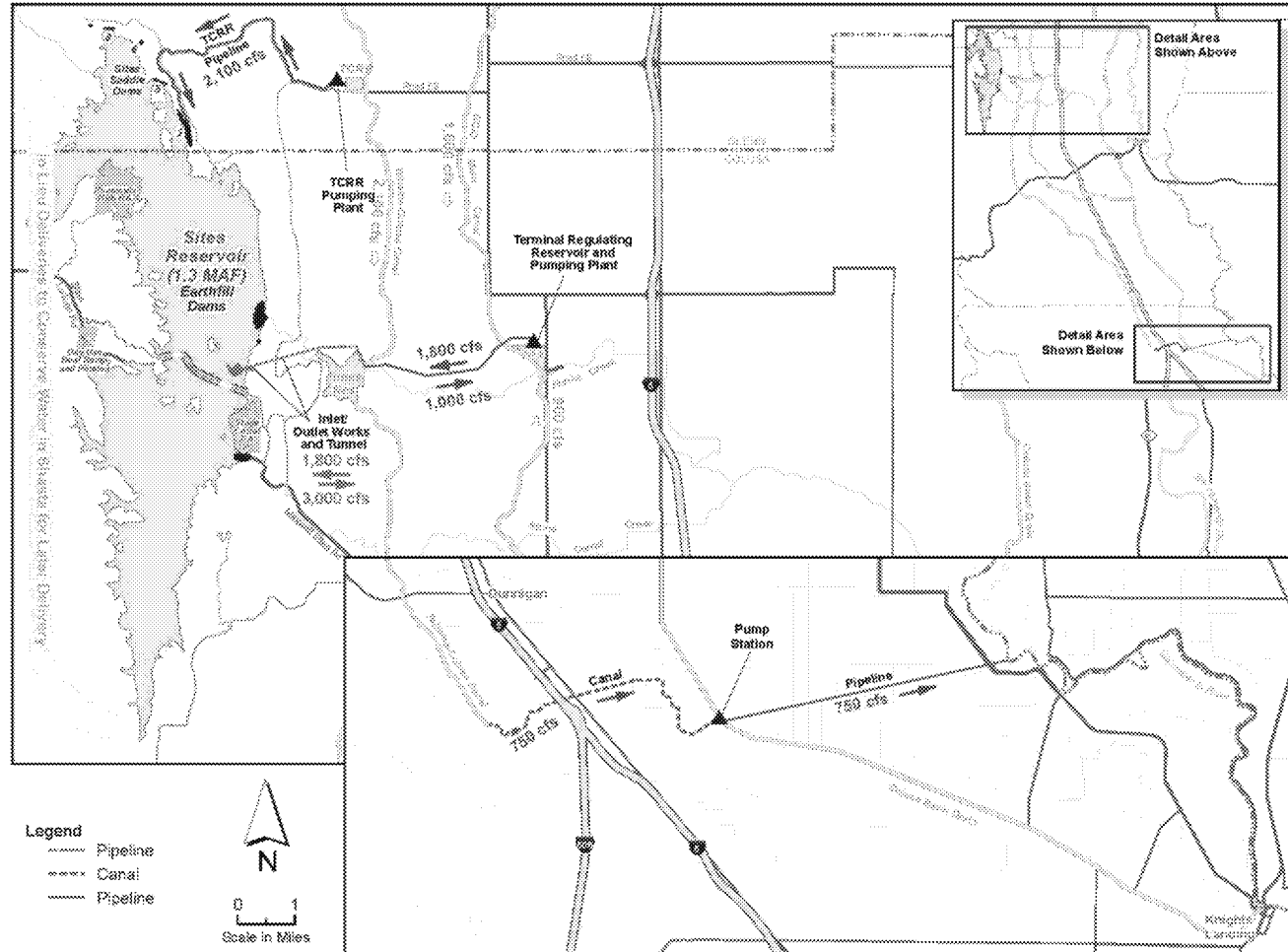


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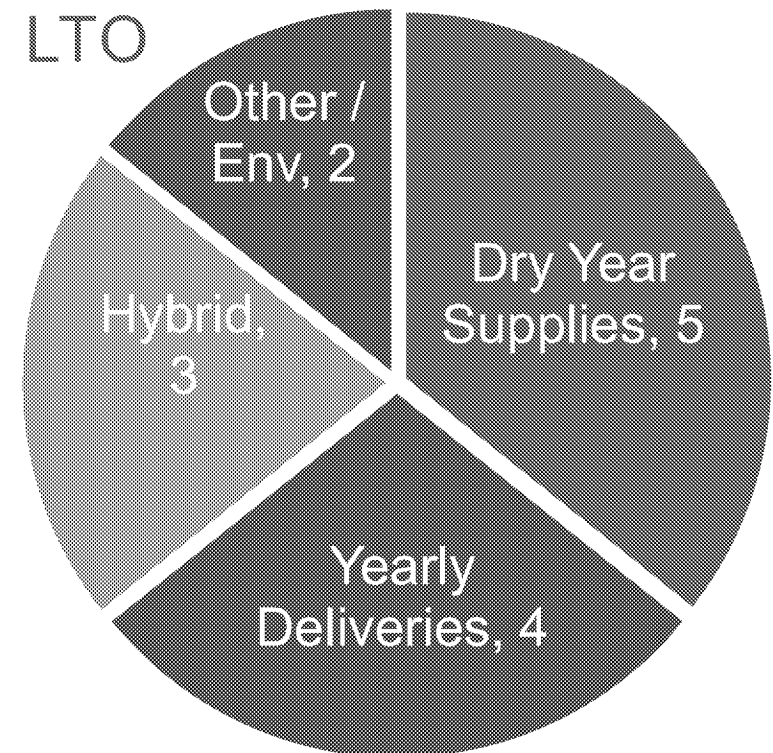
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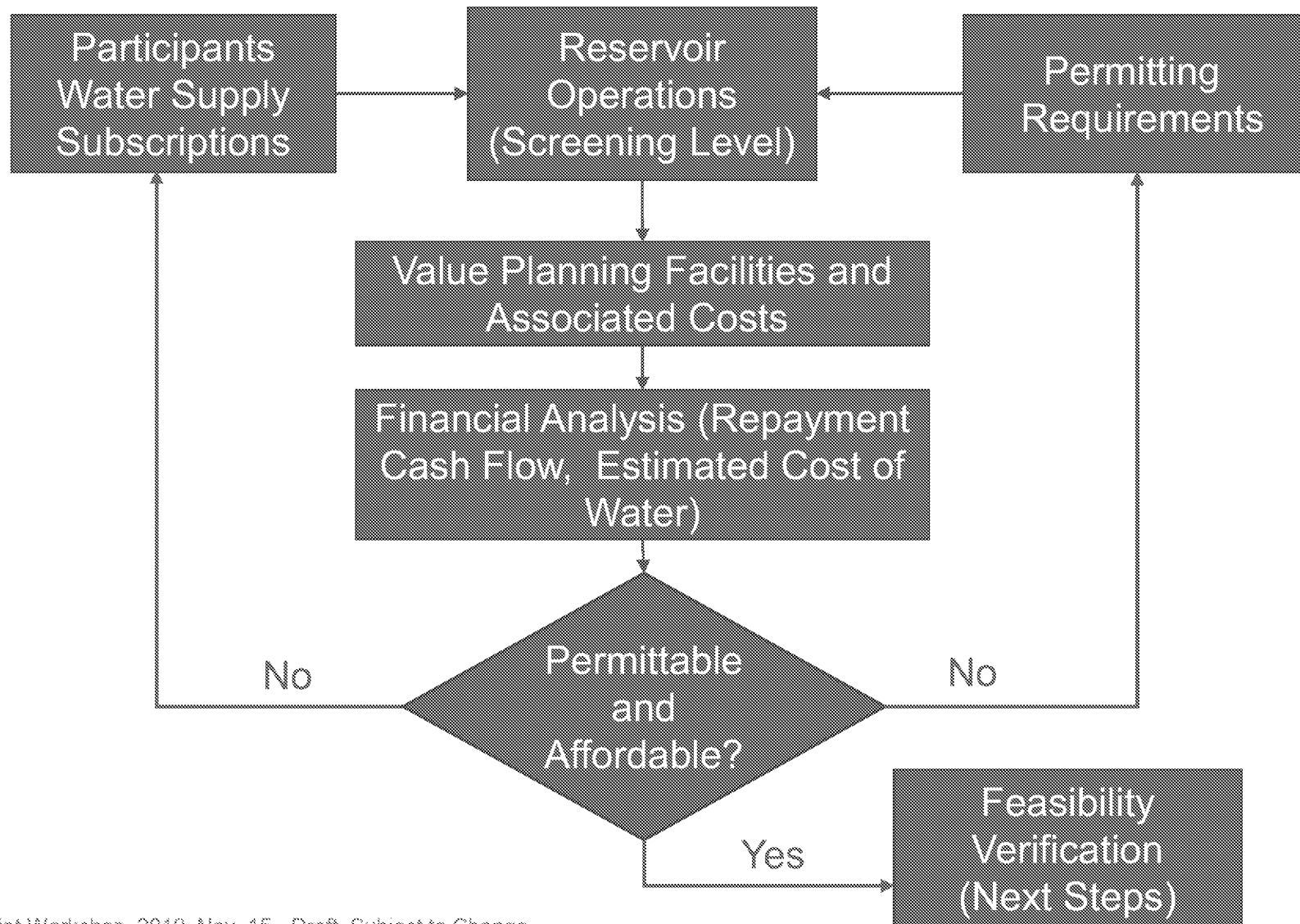
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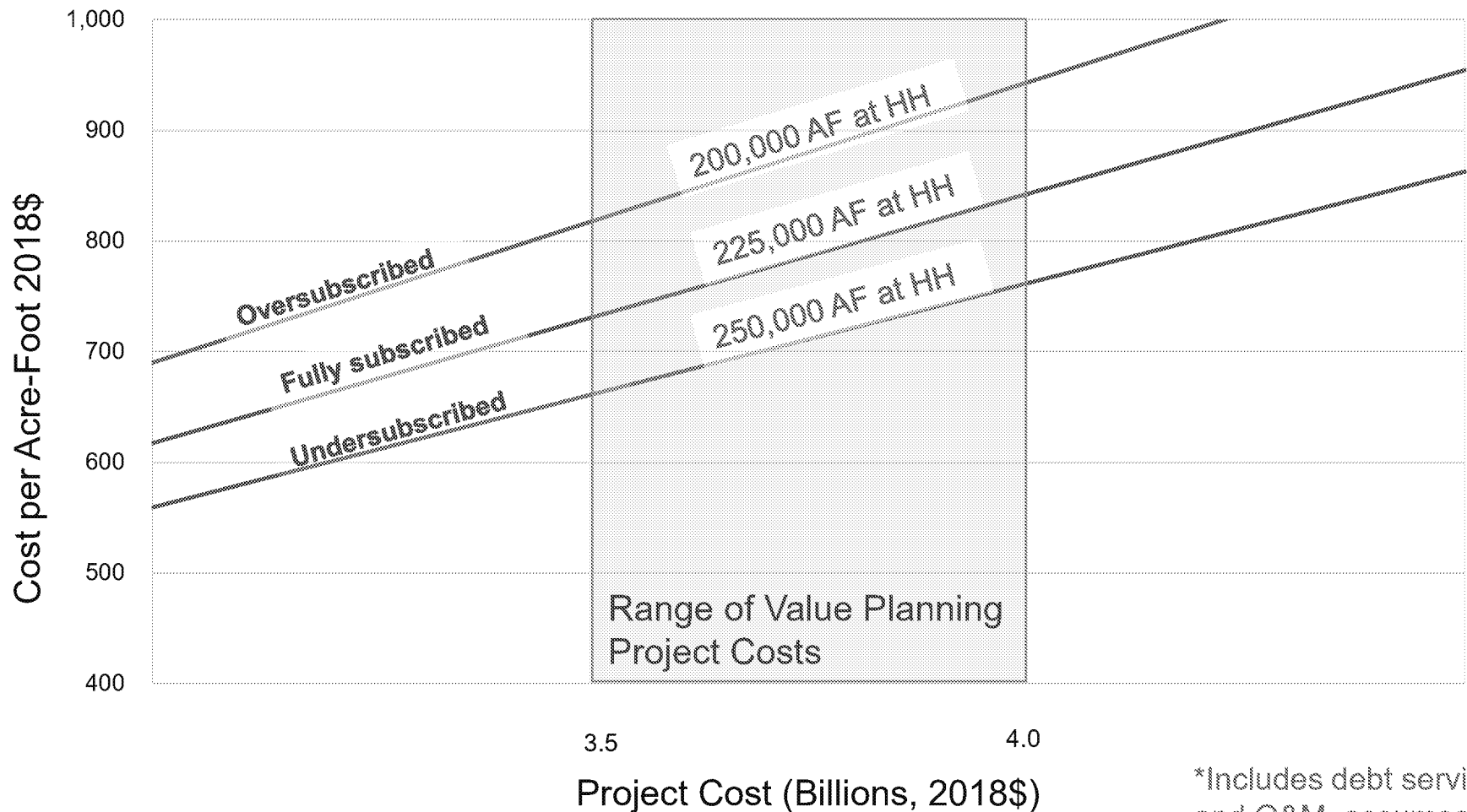
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Reservoir Committee Annualized Cost per AF



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Water Deliveries (AF)		Estimated cost per AF Released*			
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	225,000	670	780	890	1,000
	200,000	750	870	1,000	1,120
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# SIMPLIFIED REPAYMENT TOOL

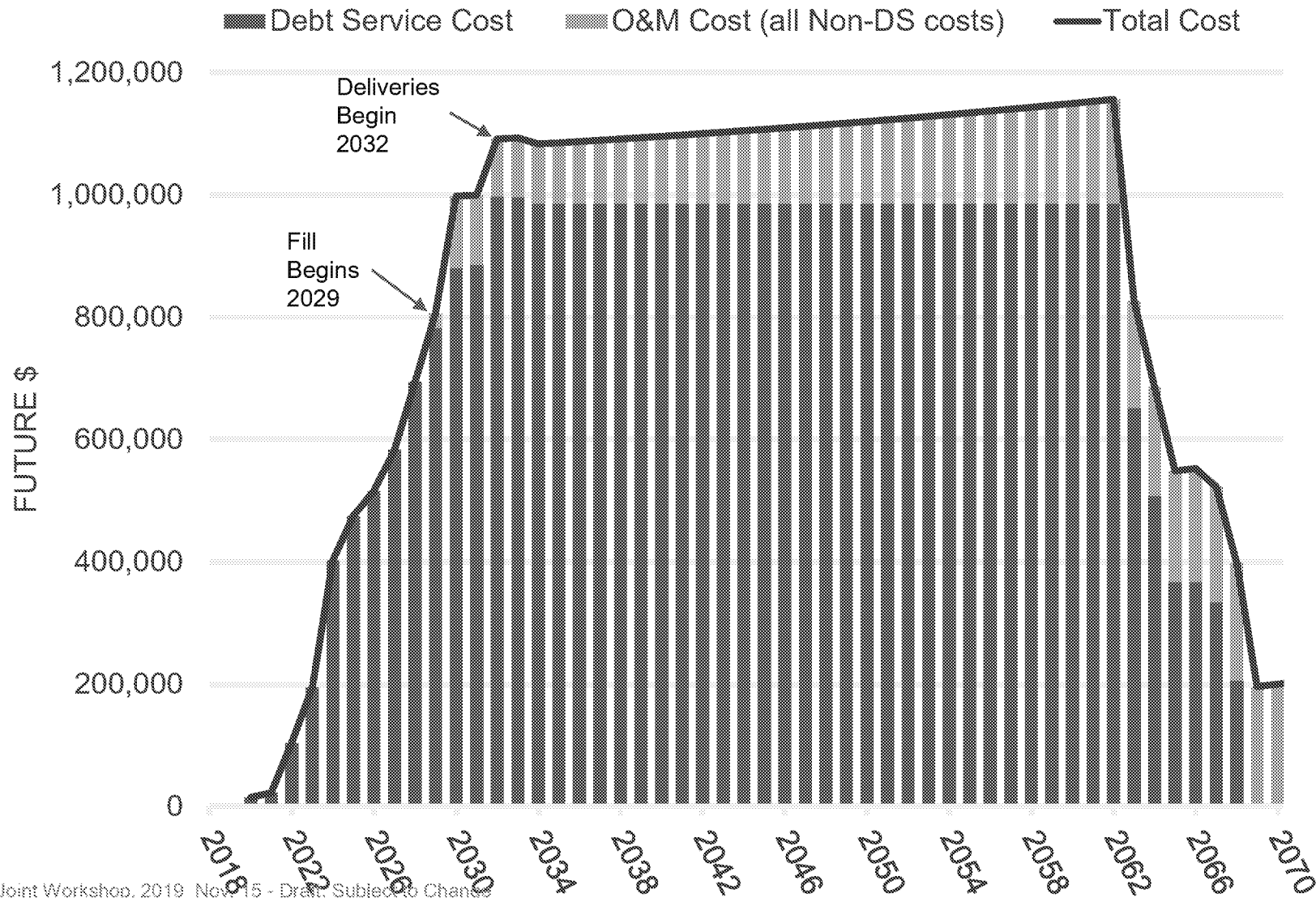


# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)



# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations



# Simplified Repayment Tool Demonstration

<b>Input in green cells</b>	<b>Reservoir Cost (\$billions, \$2018)</b>				3.5
	<b>AF Water Deliveries at Holthouse</b>				225
	<b>Include WIFIA (yes=1, no=0)?</b>				1
	<b>Participation Level</b>				1,000
<b>Water Deliveries (AF)</b>	<b>Reservoir Cost (\$2018, billions)</b>				
	3.0	3.5	4.0	4.5	
	<b>Total \$/AF Released (w/o WIFIA) (2018\$)</b>				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	<b>Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)</b>				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	



# NEAR TERM IMPLEMENTATION



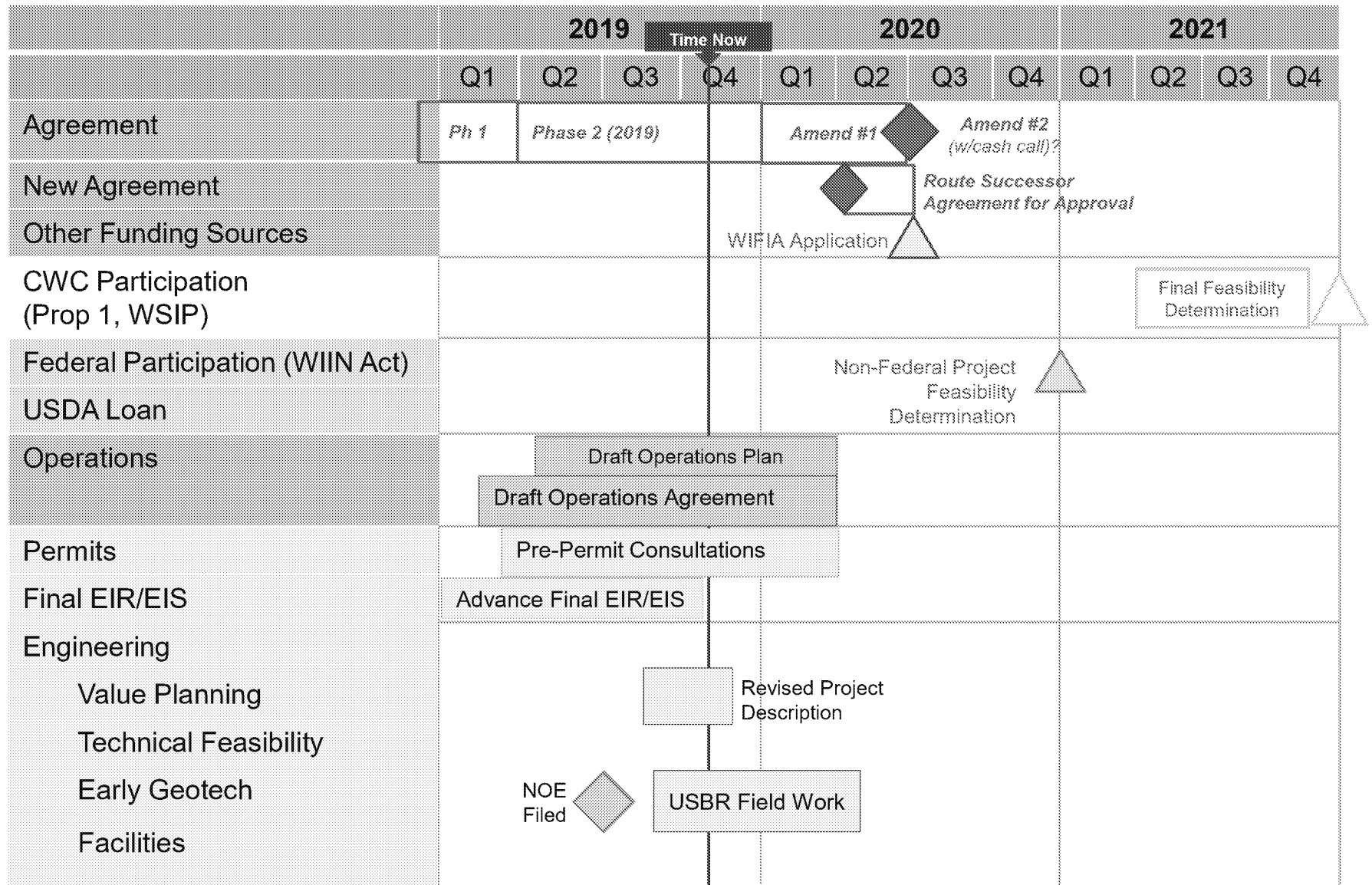
# Where does the Project go from here? (1 of 3)

- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?

# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
- Continue discussions with Reclamation regarding Operations Principles and Sites/Shasta exchanges? Work to develop a Financial Assistance Agreement for funding via the WIIN Act?
- Determine if further Value Planning should run in series with or parallel to discussions with Reclamation regarding Sites/Shasta exchanges?
- Identify criteria for, and proceed to narrow, the Alternatives?
- Determine if the Project Description should be revised and what changes are needed to the EIR/EIS?
- Update or conduct a new risk analysis for the preferred Value Planning alternatives?

# Where does the Project go from here? (3 of 3)





# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



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**Sent:** 11/18/2019 11:54:39 AM  
**To:** fhernandez@cityofamericancanyon.org; DChisam@avek.org; BenCarter@succeed.net; RCheng@cvwd.org; MJAzevedo@countyofcolusa.org; CCwd2@frontiernet.net; MKrause@dwa.org; TBettner@gcid.net; RNeudeck@mwdh2o.com; WVanderwaal@rd108.org; dough@sbvmwd.com; JDavis@sgpwa.com; CKao@valleywater.org; DMarks@SCVWA.org; JimP@chiconut.com; Jamie@tnpfarms.com; WVanderwaal@rd108.org; Zachary@CanalFarms.com; flylegacy@yahoo.com; RKunde@wrmsd.com; AFlores@zone7water.com; JHolley@cityofamericancanyon.org; rhendryx@cityofamericancanyon.org; DFlory@ppeng.com; AnnCarter4@comcast.net; IReyburn@cvwd.org; ILuna@cvwd.org; JBarrett@cvwd.org; GEvans@countyofcolusa.org; 1cjm@frontiernet.net; SBaca@dwa.org; SJohnson@dwa.org; Donald.Bransford@gmail.com; KHightower@gcid.net; dmichum@gcid.net; cchilmakuri@mwdh2o.com; LBair@RD108.org; BobT@sbvmwd.com; LillianH@sbvmwd.com; DMelville@ppeng.com; ELeitterman@valleywater.org; scole@SCVWA.org; jamie@tnpfarms.com; jspoonerfarms@gmail.com; Ken@CanalFarms.com; DRuiz@westsidewd.com; SNicholas@wrmsd.com; wmercado@zone7water.com; carol@zone7water.com; Donald.bransford@gmail.com; gevens@countyofcolusa.org; fritz.durst@gmail.com; 1cjm@frontiernet.net; lmcdaniel@countyofglenn.net; jsutton@tccanal.com; jdparker@frontiernet.net; glallen@surewest.net; SchmitzK@SacCounty.net; logan@canalfarms.com; MJAzevedo@countyofcolusa.org; sean@dohertyfarms.com; dkorchards@frontiernet.net; jviogas@countyofglenn.net; blakevann@vannbros.com; Zachary@CanalFarms.com; jalpine@hotmail.com; PetersonMi@SacCounty.net; Jsharris@cityofsacramento.org; asanger@cityofsacramento.org; jamie@tnpfarms.com; greg@greatrice.com; Zachary@CanalFarms.com; ted@westerncanal.com; jamie@tnpfarms.com; Jim Watson, General Manager [jwatson@sitesproject.org]; Kevin Spesert (kspesert@sitesproject.org) [kspesert@sitesproject.org]; Joe Trapasso [jtrapasso@sitesproject.org]; Rob Thomson, Asst. GM [rthomson@sitesproject.org]; Ali Forsythe [aforsythe@sitesproject.org]; Lee Frederiksen (Lee.Frederiksen@hdrinc.com) [Lee.Frederiksen@hdrinc.com]; Yolanda Tirado [ytirado@sitesproject.org]; mkivett@sitesproject.com; skuney@youngwooldridge.com  
**Attachments:** 20191115 Workshop Presentation.pdf; Sites Annual Cash Flow Tool V1.0.xlsx

Good Morning Authority Board and Reservoir Committee members,

**Presentation:** Attached is the presentation that is nearly ready for distribution. Please let me know if you have any changes by 10am today (it is as-presented, with comments and hidden slides deleted). **Ali:** the only other change I am aware of is the changing of the word "Narrowing" on slide 42, recommended by Gary Evans. Can you please send me back a revised version this morning so we can get this out?

**Cash Flow Tool:** I have attached the latest cash flow tool for distribution. I have cc'd Doug and Brian to have on last look as well. Importantly, I have added a tab to show the limitations and the version history. I can see us having multiple versions and improving this over time. I also created a bug / improvement tracking sheet. The link to that form is [here](#). I have pasted the "Limitations" statement I came up with here for convenience. Please provide input if you have any as this is important to be clear.

Have a wonderful day,

Marcia

Marcia Kivett  
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# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# Purpose of Workshop

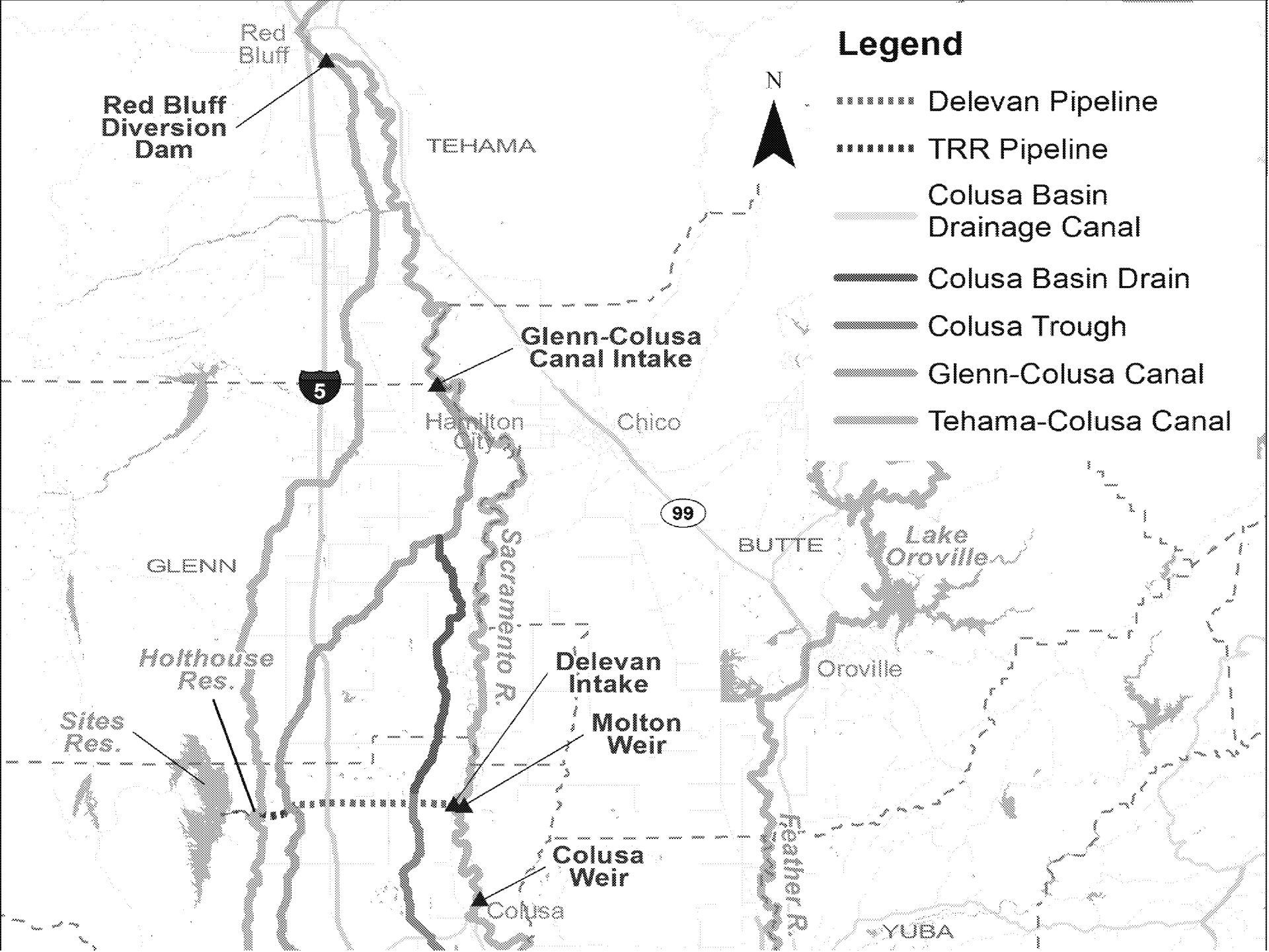
- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

# OPERATIONAL CONSIDERATIONS STATUS

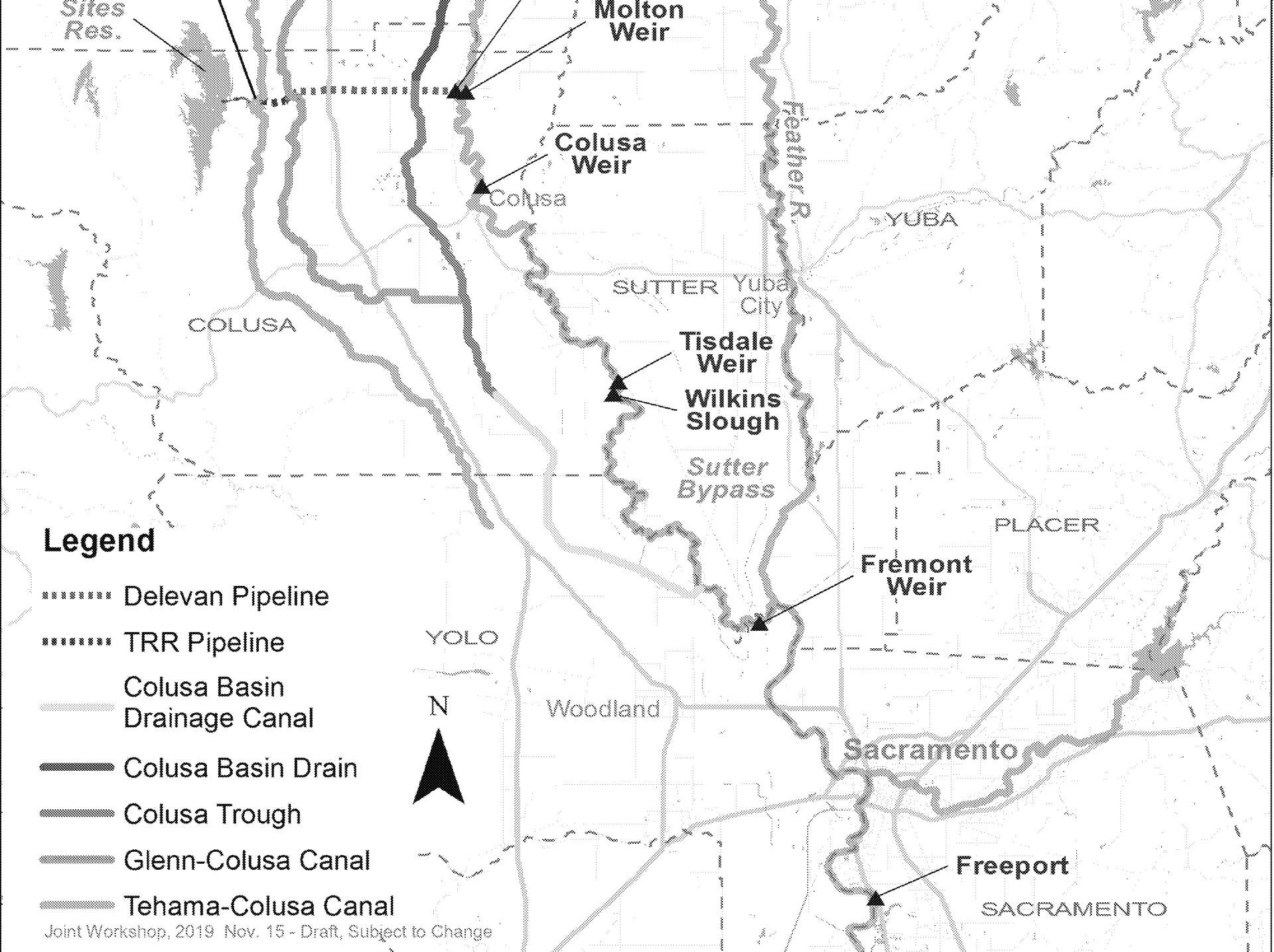


# Key Operational Activities

- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges







**Legend**

- ..... Delevan Pipeline
- ..... TRR Pipeline
- Colusa Basin Drainage Canal
- Colusa Basin Drain
- Colusa Trough
- Glenn-Colusa Canal
- Tehama-Colusa Canal

Joint Workshop, 2019 Nov. 15 - Draft, Subject to Change

# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
- Fremont Weir Notch
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Flows into the Sutter Bypass System
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Freeport Bypass Flow
  - Indicator of Delta survival for juvenile salmonids
- Net Delta Outflow Index (NDOI)
  - Spring NDOI directly correlates to fall longfin smelt population



# Recent Operations Modeling

- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
  - Incorporate ROC on LTO and new requirements from the NMFS Biological Opinion in the baseline

# Summary of Operational Scenarios Currently Being Discussed

Criteria	8,000 Wilkins with WaterFix Criteria	Scaled Diversion with WaterFix Criteria	Potential Revised Project – Sept 2019
Reservoir Size	1.5 MAF	1.5 MAF	1.5 MAF
Delevan Intake	Not included; Outlet only facility	Not included; Outlet only facility	Not included; Outlet only facility
Wilkins Slough Bypass Flow	8,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion
Fremont Weir Notch	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative
Flows into the Sutter Bypass System	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale
Freeport Bypass Flow	Modeled WaterFix Criteria (applied daily)	Modeled WaterFix Criteria (applied daily)	15,000 cfs Jan-March; 13,000 cfs in December; 11,000 cfs all other times (monthly average)
Net Delta Outflow Index (NDOI) Prior to Project Diversions	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	None; Minor changes in X2; Mitigation proposed
Total Deliveries (Average / Dry Year)	~220 TAF ~302 TAF	~234 TAF ~312 TAF	~332 TAF ~477 TAF

Potential Deliveries Range from 200,000 AF to 250,000 AF

# Major Permitting / Operations Challenges

- Challenges:
  - Magnitude of anticipated temperature benefit above Red Bluff need to be reassessed due to revised operational criteria
  - Discussions with Reclamation and analysis of water rights considerations on within year exchanges in Shasta are on-going
  - USFWS has announced it is updating the status review for longfin smelt and may propose it for listing under the Federal ESA but already consulting under CESA
  - Future Delta Conveyance and Voluntary Agreements may effect Sites operations and diversions but working to account for these in revised operational criteria

# Major Permitting / Operations Opportunities

- Opportunities:
  - Delta Conveyance, Voluntary Agreements, Eco Restore, and other projects present opportunities for improved fisheries conditions and for collaboration on science, monitoring and mitigation
  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

# Key Takeaways

- Permittable operations, reflecting current permitting discussions, may result in a range from 200,000 AF to 250,000 AF average annual deliveries at Holthouse
- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
- Additional detailed modeling on revised operational scenarios is needed to reduce uncertainties and refine analyses
- Additional discussions is needed with the regulatory agencies to develop and refine operational parameters to ensure they are implementable and meet the intended biological outcome

# VALUE PLANNING STATUS





# Overview

- Ad hoc representatives from the Reservoir Committee and Authority Board met on October 2 and 14, 2019 to discuss approaches that could potentially lower the cost of the project. AECOM and others conducted initial analyses on these approaches.
- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
- Appraisal level costs were developed in October 2015 dollars and escalated to 2018 dollars. These costs ranged from \$3.4 to \$4.0 billion (excluding risk management and financing costs) versus the \$5.2 billion for Alternative D.
- Authority agents developed comments on the appraisal evaluation but did not identify any “fatal flaws”.



# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

MAF = million acre feet

PGP = Pumping/Generating Plant

TCRR = Tehama-Colusa Regulating Reservoir

15 TRR = Terminal Regulating Reservoir

**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**

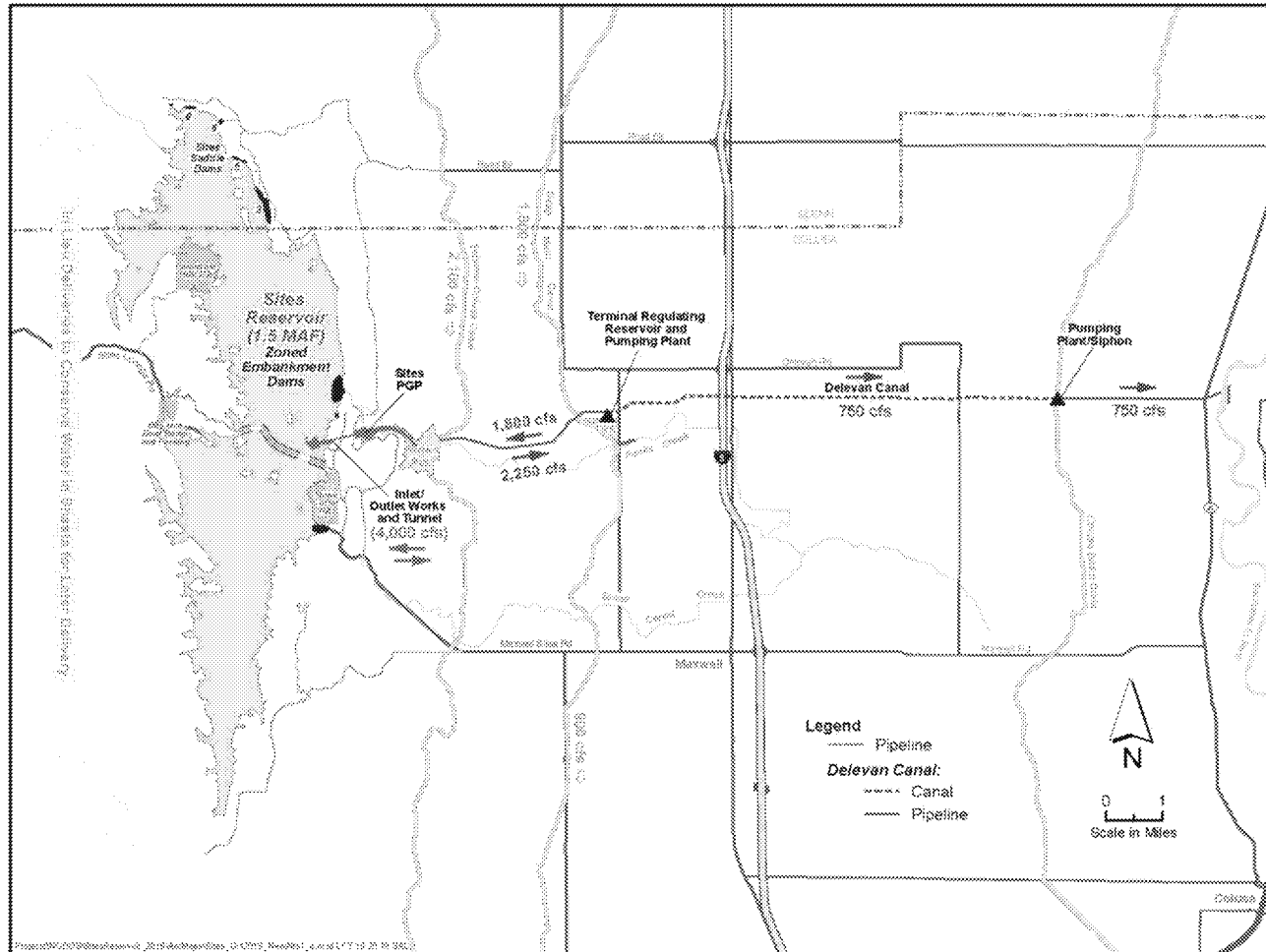


Figure 1

# Alternative 2 – Similar to Alternative 1 but uses the southern road alignment to Lodoga in place of the bridge - \$4.0B

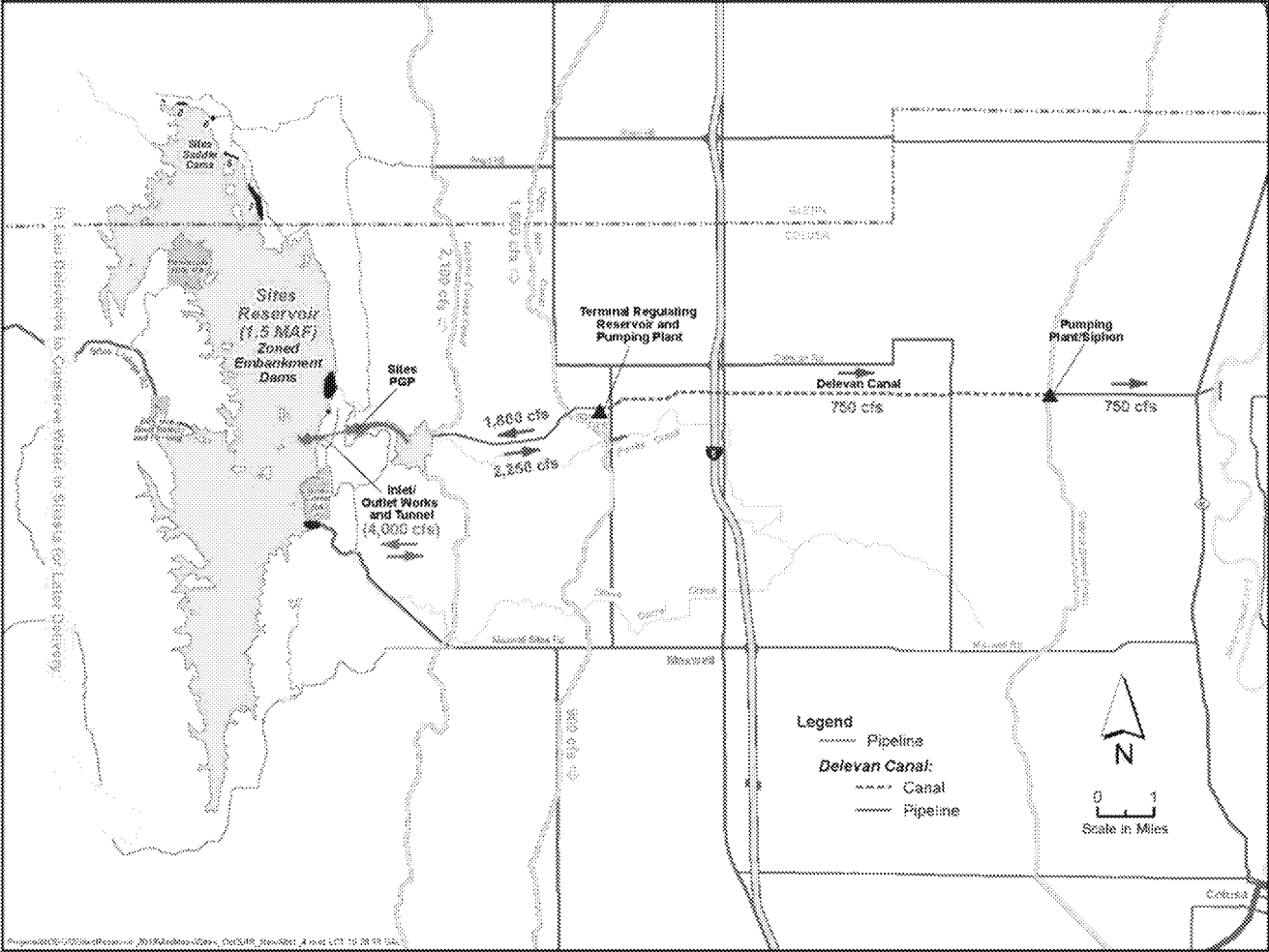


Figure 2

# Alternative 3 – Similar to Alternative 1, but replaces Sites PGP with the Tehama-Colusa Regulating Reservoir and PP and modified TRR - \$3.9B

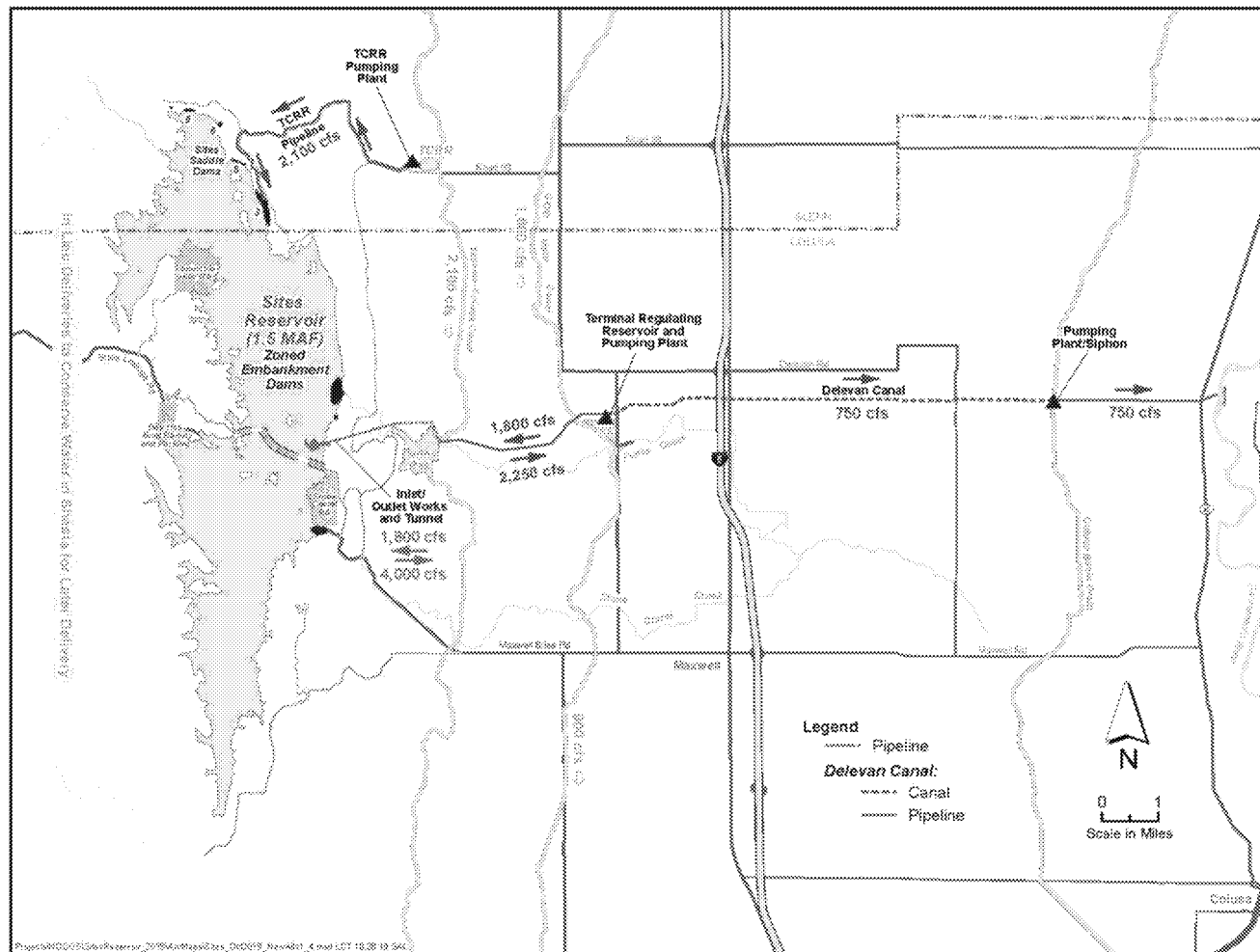


Figure 3

# Alternative 4a – Same as Alternative 1 but replaces the zoned rockfill embankment dam with an earthfill dam – \$3.8B

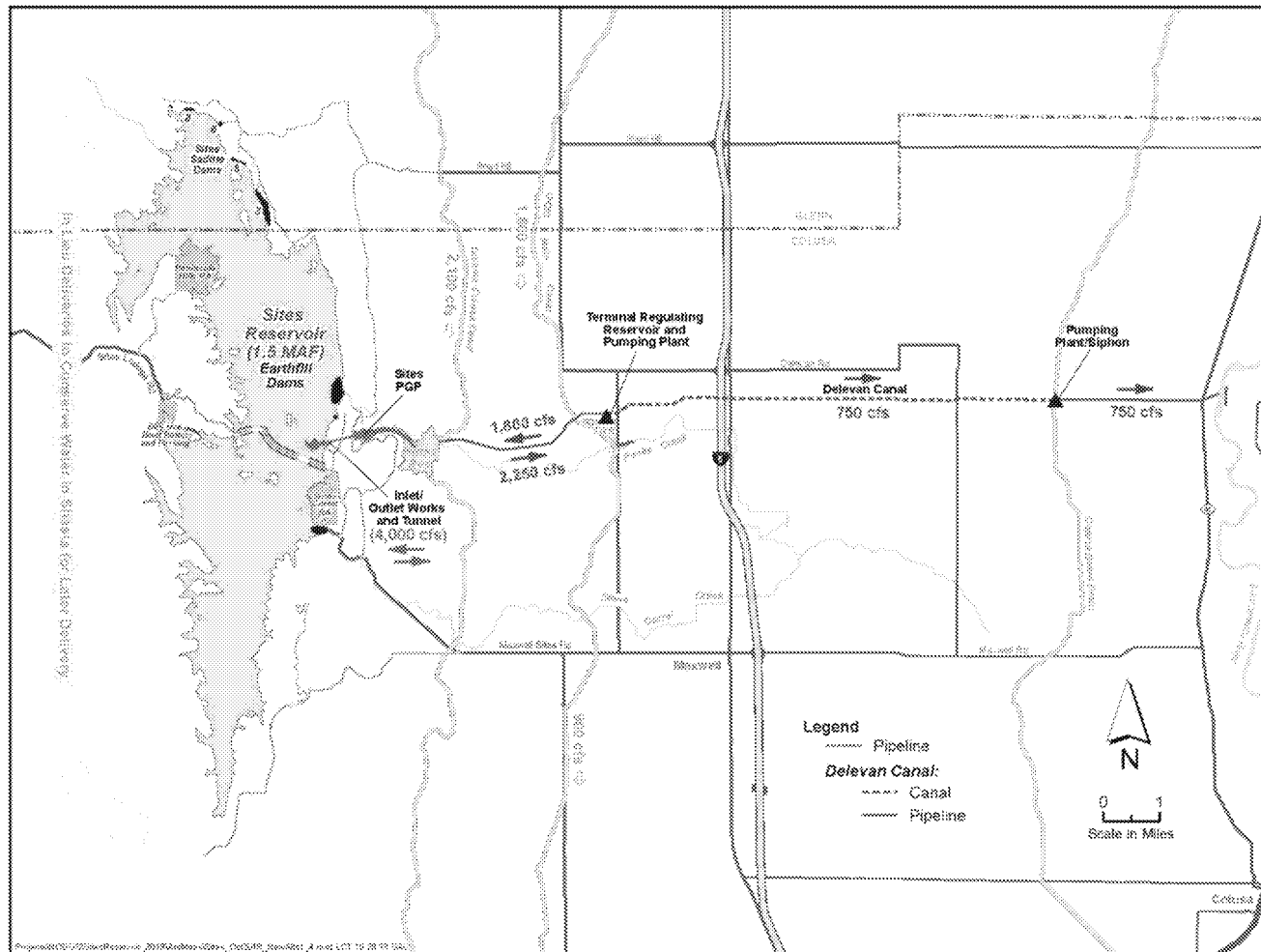


Figure 4a

# Alternative 4b – Same as Alternative 1 but replaces the zoned rockfill embankment dam with a hardfill dam – \$3.9B

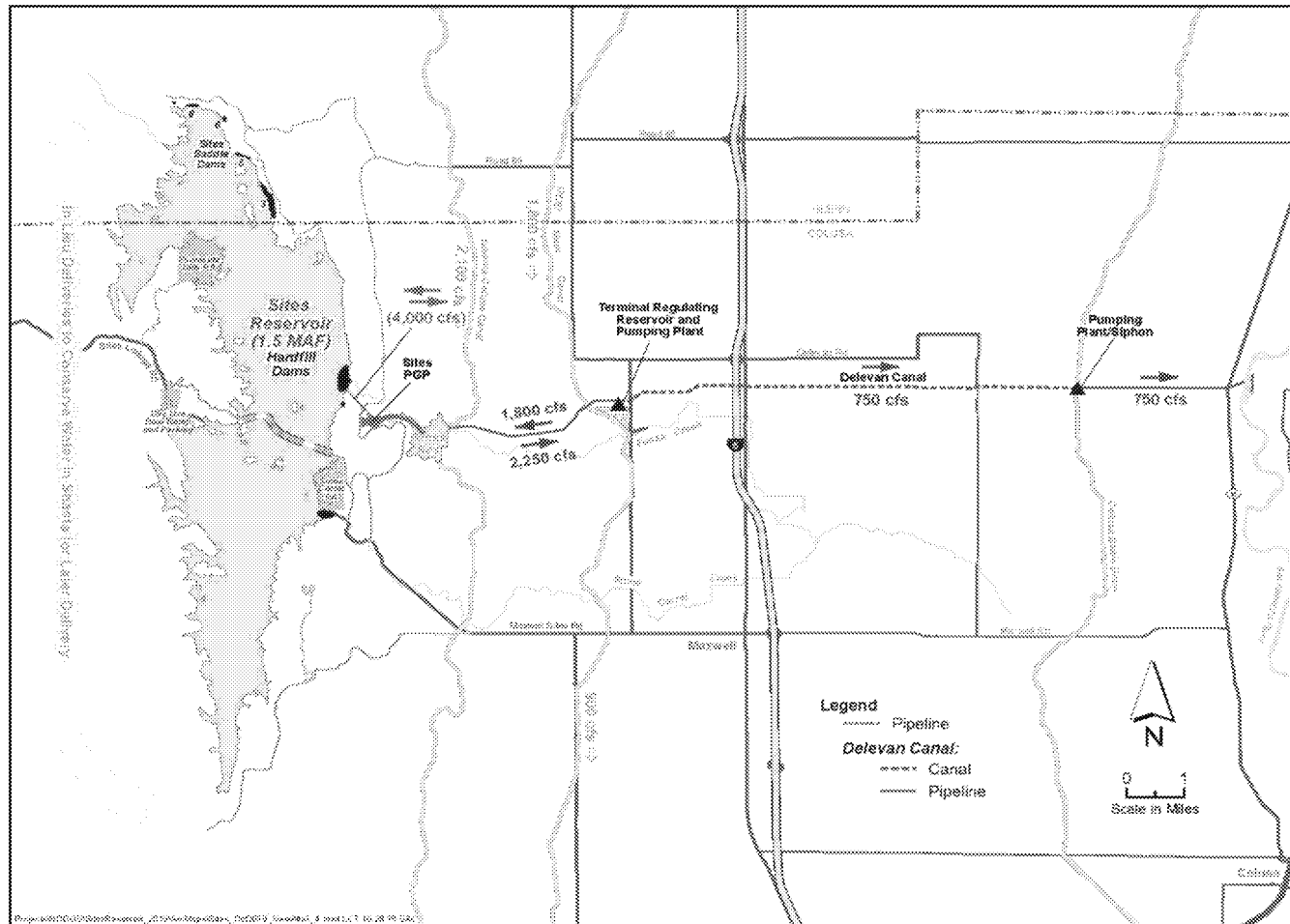


Figure 4b

# Alternative 5a – Similar to Alt 1, but replaces Delevan Canal/ Pipeline with pipeline/canal release from the Dunnigan Canal to the Colusa Basin Drain, thence through the lower portion of the Colusa Basis Drain to the Sacramento River - \$3.5B

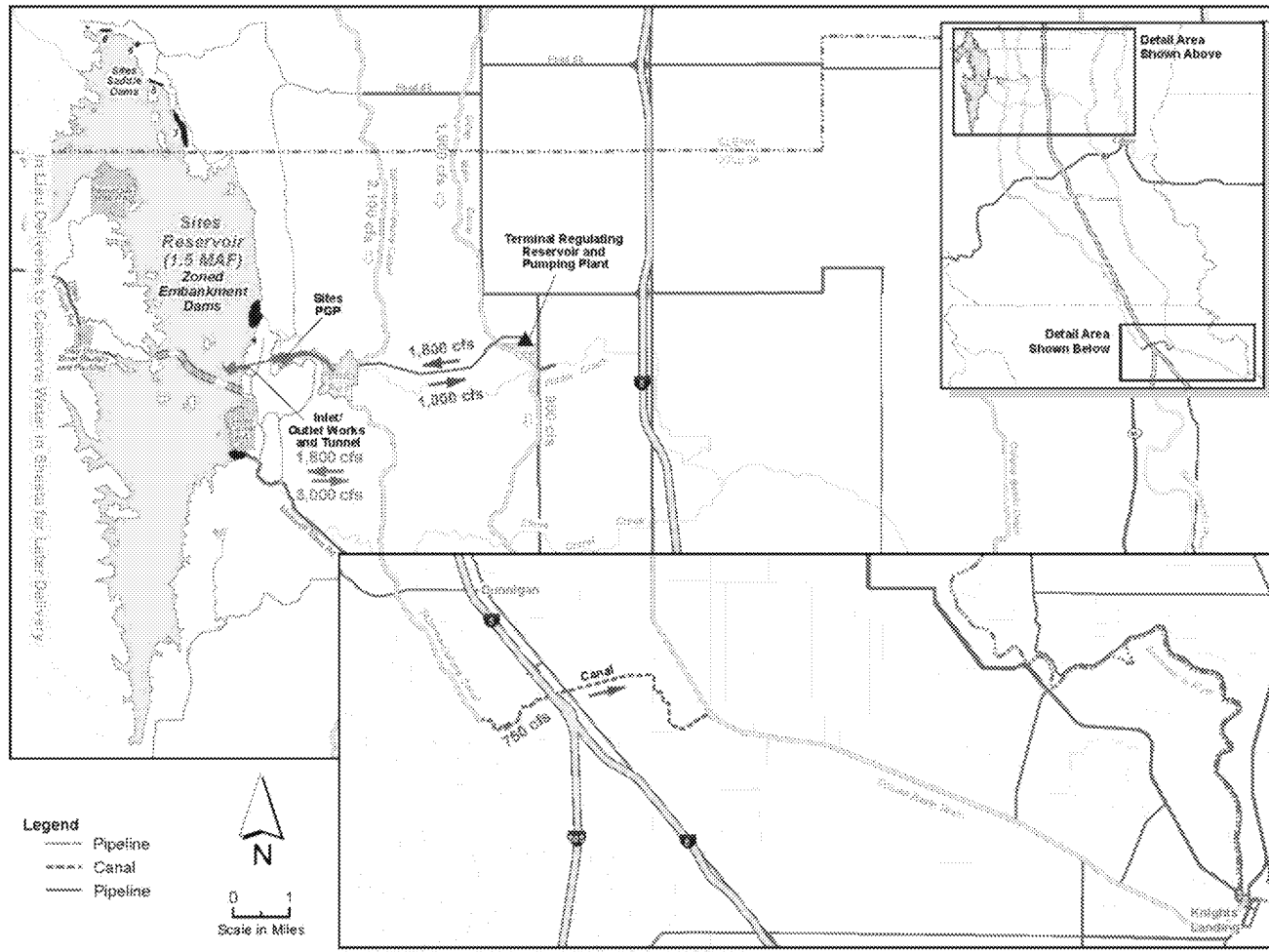


Figure 5a



# Alternative 5b - Similar to Alternative 5a but releases water from Dunnigan Canal to the Sacramento River via a canal, siphon and pumping plant - \$3.9B

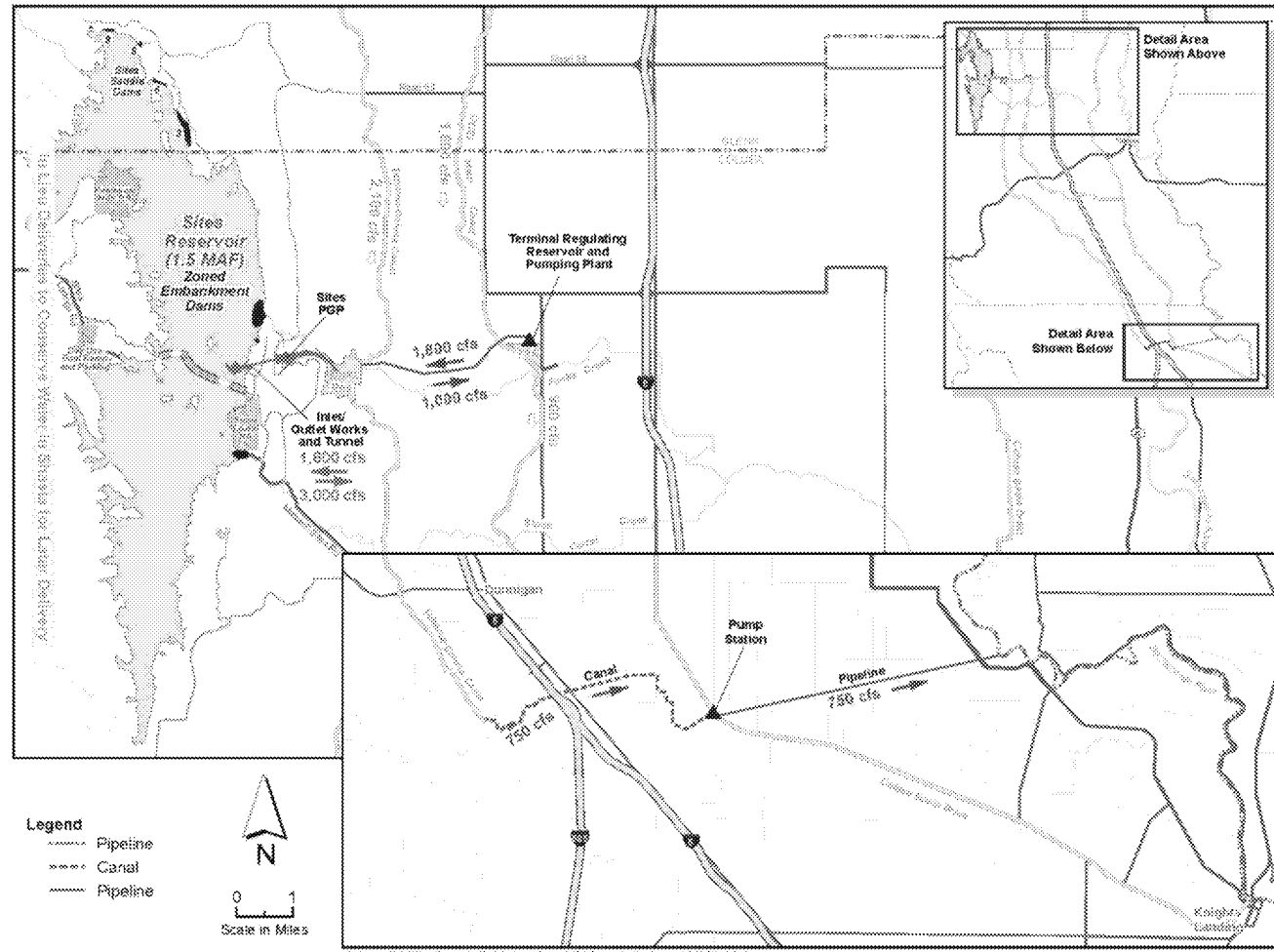
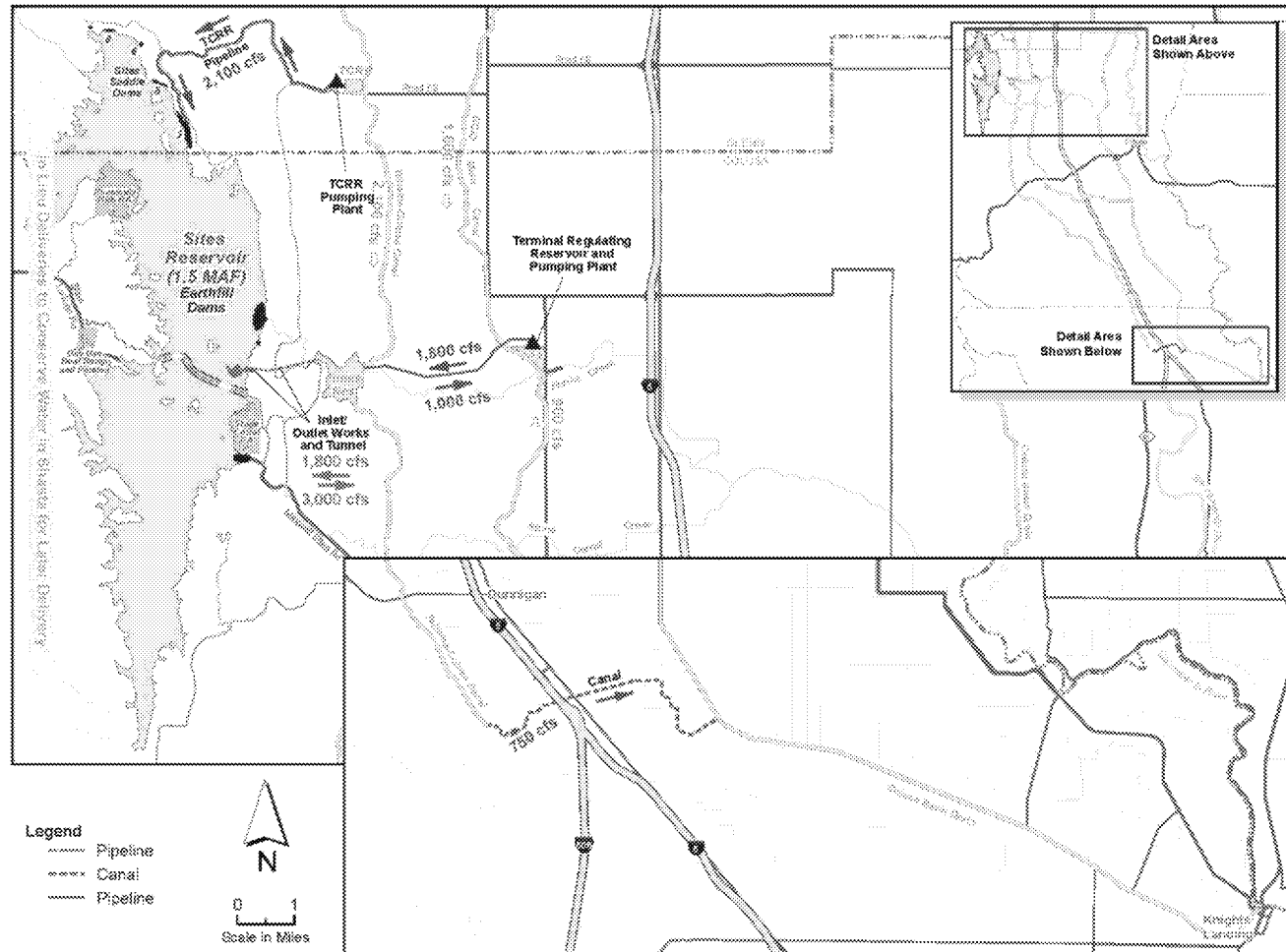


Figure 5b

# Alternative 6a – Lowest cost combination of Alt 3, 4 and 5a – replace Sites PGP with 2 smaller facilities, Dunnigan release to the CBD, and an earthfill dam - \$3.4B



# Alternative 6b – Similar to Alternative 6a, but reduces Reservoir to 1.3MAF and releases water from the Dunnigan Canal to the CBD - \$3.6B

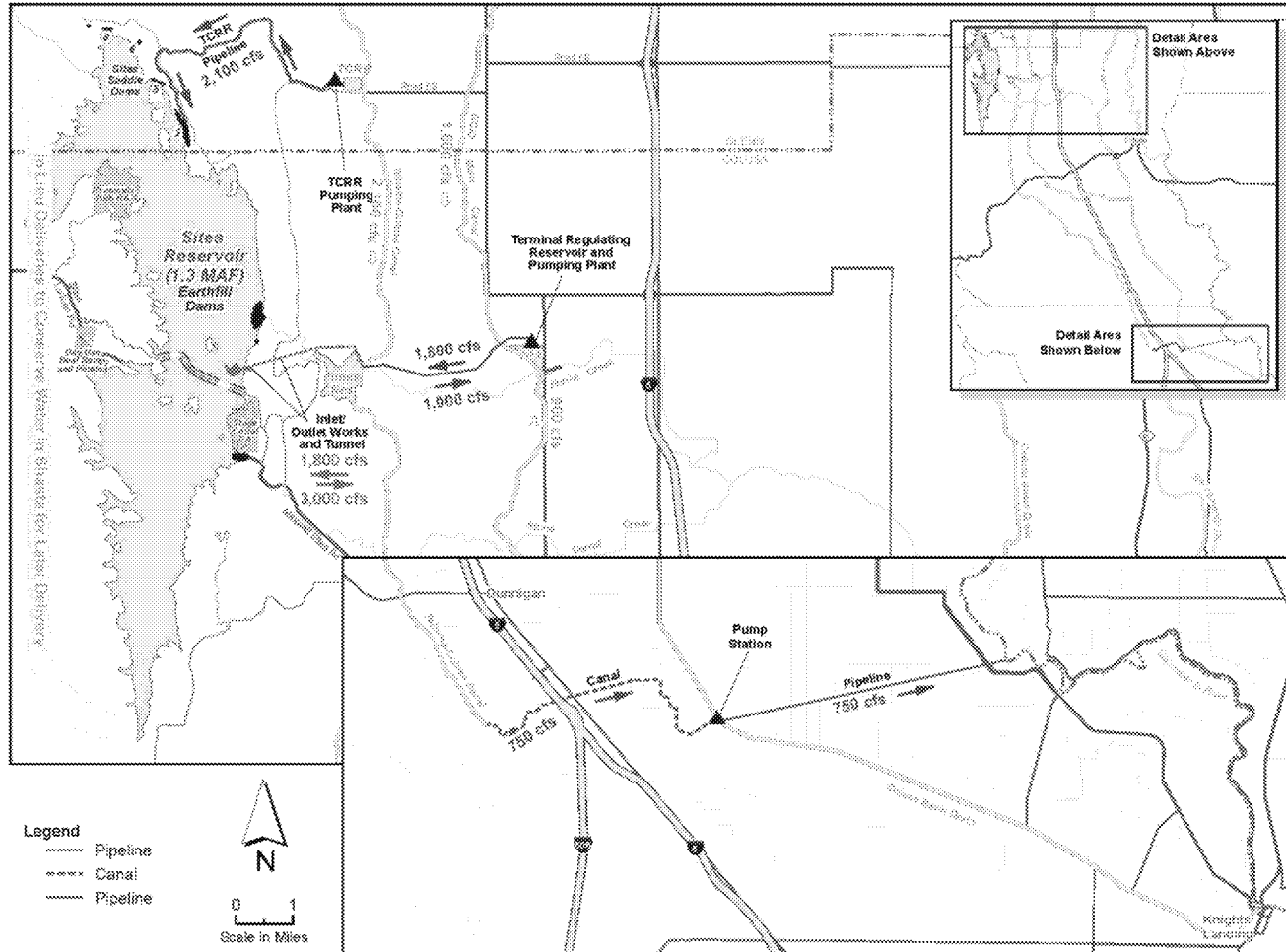


Figure 6b

# Estimated Project Costs

Alternative	Estimated Costs (\$2018) (financing cost not included)	Cost Reduction from Alternative D
Alternative D	\$5,235 million	0%
Alternative 1	\$3,970 million	24%
Alternative 2	\$3,988 million	24%
Alternative 3	\$3,868 million	26%
Alternative 4a	\$3,828 million	27%
Alternative 4b	\$3,861 million	26%
Alternative 5a	\$3,548 million	32%
Alternative 5b	\$3,876 million	26%
Alternative 6a	\$3,417 million	35%
Alternative 6b	\$3,584 million	32%

- Alternative Project Costs Range from \$3.4 to \$4.0B versus \$5.2B for Alternative D
- Alternative D includes \$218M of Risk (4.2%) from the February 2018 Risk Analysis. Value Planning estimates do not include risk adjustment or analysis.

# Value Planning Uncertainties

- Screening-level cost estimates have an expected variation range of (Association for Advancement of Cost Engineering):
  - Low range: -20% to +30%
  - High range: -50% to +100%
- But some facilities (especially the dams) have far more cost certainty than -50% to +100%. The higher percentages DO APPLY to facilities not included in Alternative D (e.g., a new regulating reservoir for the T-C Canal and a southern conveyance from Dunnigan).
- The entire project does NOT have a -50% to +100% estimate level. We don't have an \$8B project.
- Final project features and costs will vary from those presented.

# Key Elements of Success for Value Planning

- Permitting - identify the reasonable range of CDFW permitting outcomes
- Shasta Exchange - in cooperation with Reclamation, develop parameters and quantities for drier year exchanging Sites water into Shasta so that the Sites release facilities can be downsized / relocated
- Operations Plan – update the operations assumed for the WSIP application to reflect the above and current conditions
- Project Description – revise (if necessary) to reflect Value Planning outcomes



# OPERATIONS AND REPAYMENT STATUS

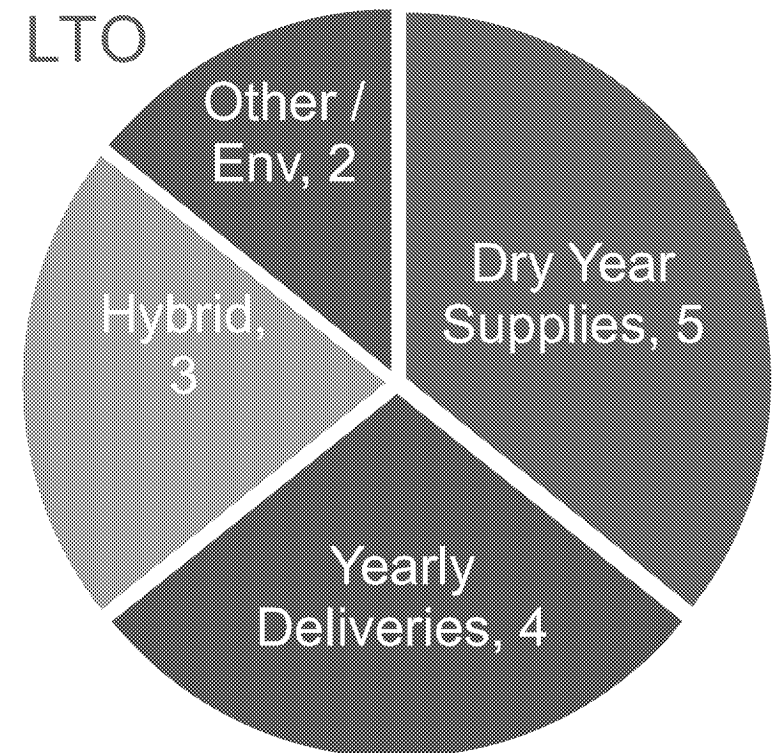




# Informal Survey Results

(2019 August)

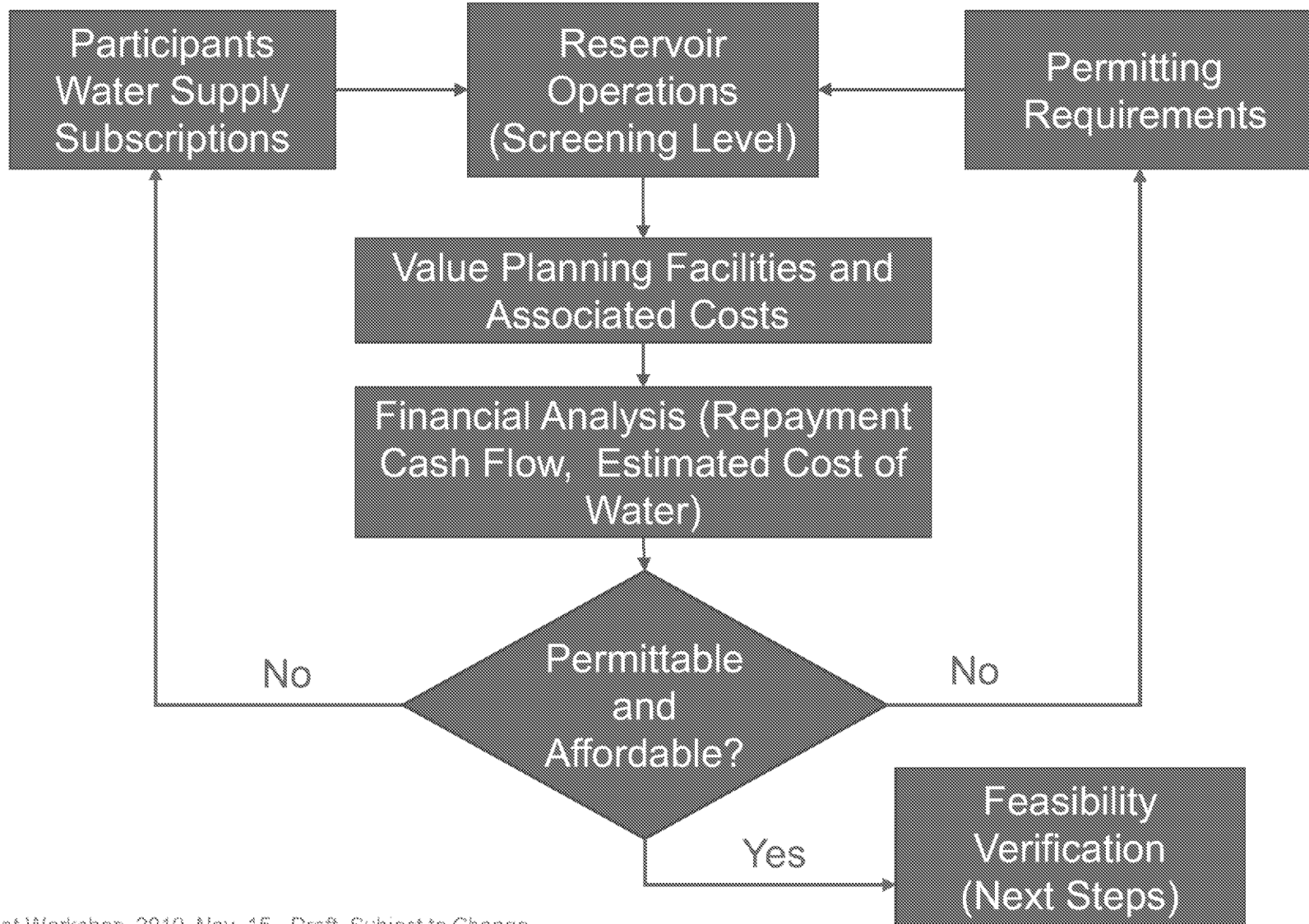
- Responses: 14 of 21  
(108,442 AF of Participation = 56%)
- Diverse set of drivers  
(Cost, permitting, ROC on LTO  
CVP/SWP, VA's)
- Participation increases as  
costs decrease,  
particularly below  
\$750/AF



# Purpose of the Operations and Repayment Analysis

- Provide information regarding the potential range of cost of water in terms of annual repayment and operational costs
- Provide information regarding the potential range of annual cash flow requirements

# Operations and Repayment Analysis Process (Background)



# Participation Assumptions

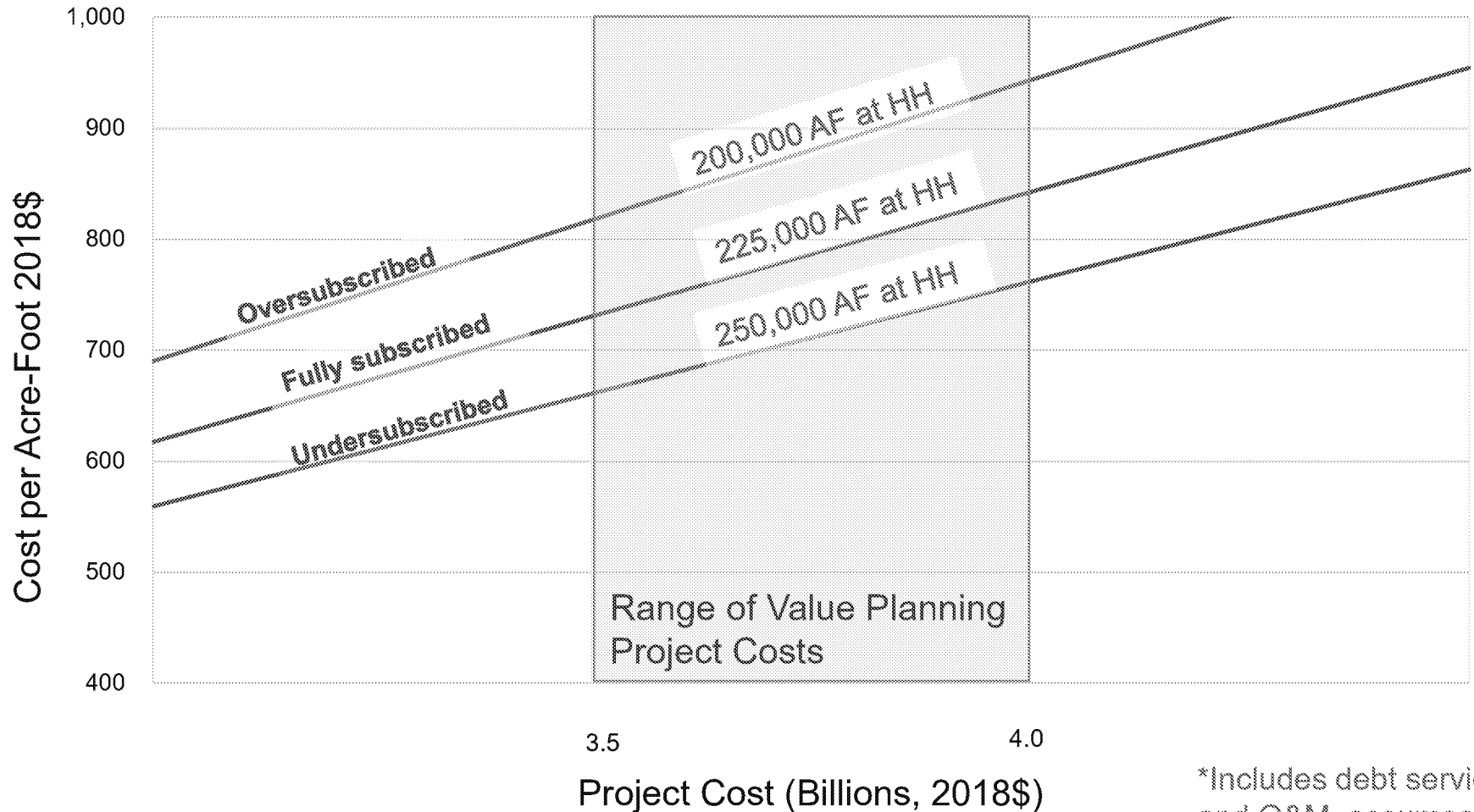
- Participant current subscription level = 192,812 AFY
- State based on Proposition 1 WSIP funding:
  - Total funding is \$816M
  - Deduct \$241.8M flood control and recreation benefits
  - Portion for environmental water supply is ~16,000 to 35,000 AFY
  - Assumes a separate storage account is used to cover O&M for environmental water

# Financial Working Assumptions

Item	Value
<b>Interim Loan</b>	
Interest Rate	3.00%
Unutilized Rate	0.75%
<b>Revenue Bonds</b>	
Interest Rate	5.00%
DSRF% of Maximum Annual Debt Service	50%
DSRF Earnings Rate	4.00%
Bond Fund Interest Earnings Rate	2.00%
First Maturity	12/1/2032
Final Maturity	6/1/2066
<b>USDA Loan</b>	
Interest Rate	3.875%
<b>WIFIA Loan</b>	
Interest Rate	3.500%
Construction Risk Mitigation Percentage	4.20%
<b>Inflation Escalators</b>	
Pre-Construction Escalation/year	1.50%
Construction Escalation/year	2.02%
Labor Inflation Rate/year	2.00%
Non-Labor inflation rate/year	2.00%
Electrical Generation Price Escalation/year	2.00%
Months for Generation post COD	24

# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan



# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.



# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	610	710	810	910	
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Rounded to the nearest \$10.

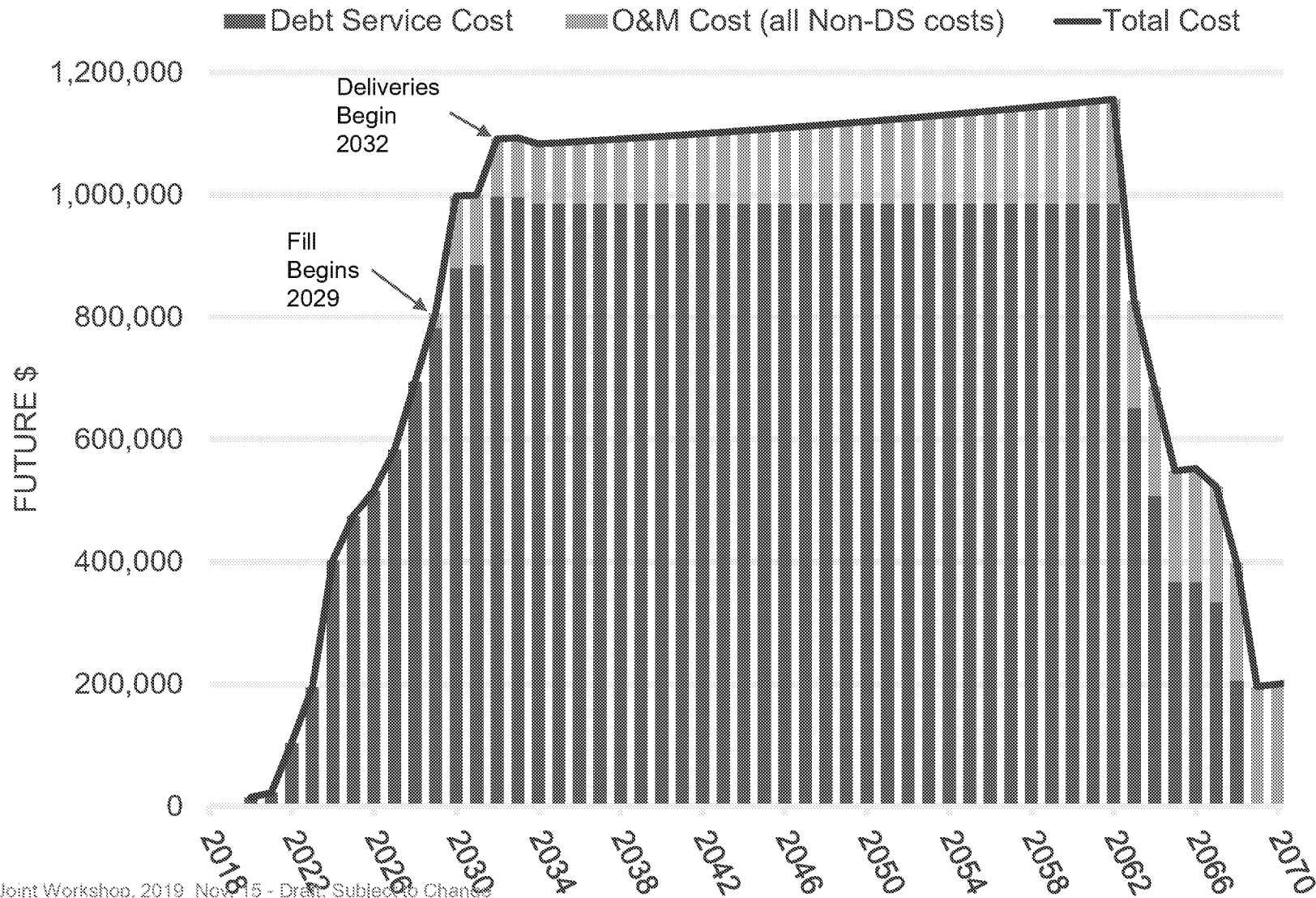
# SIMPLIFIED REPAYMENT TOOL



# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)

# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations



# Simplified Repayment Tool Demonstration

Input in green cells	Reservoir Cost (\$billions, \$2018)				3.5
	AF Water Deliveries at Holthouse				225
	Include WIFIA (yes=1, no=0)?				1
	Participation Level				1,000
Water Deliveries (AF)	Reservoir Cost (\$2018, billions)				
	3.0	3.5	4.0	4.5	
	Total \$/AF Released (w/o WIFIA) (2018\$)				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	



# NEAR TERM IMPLEMENTATION



# Where does the Project go from here? (1 of 3)

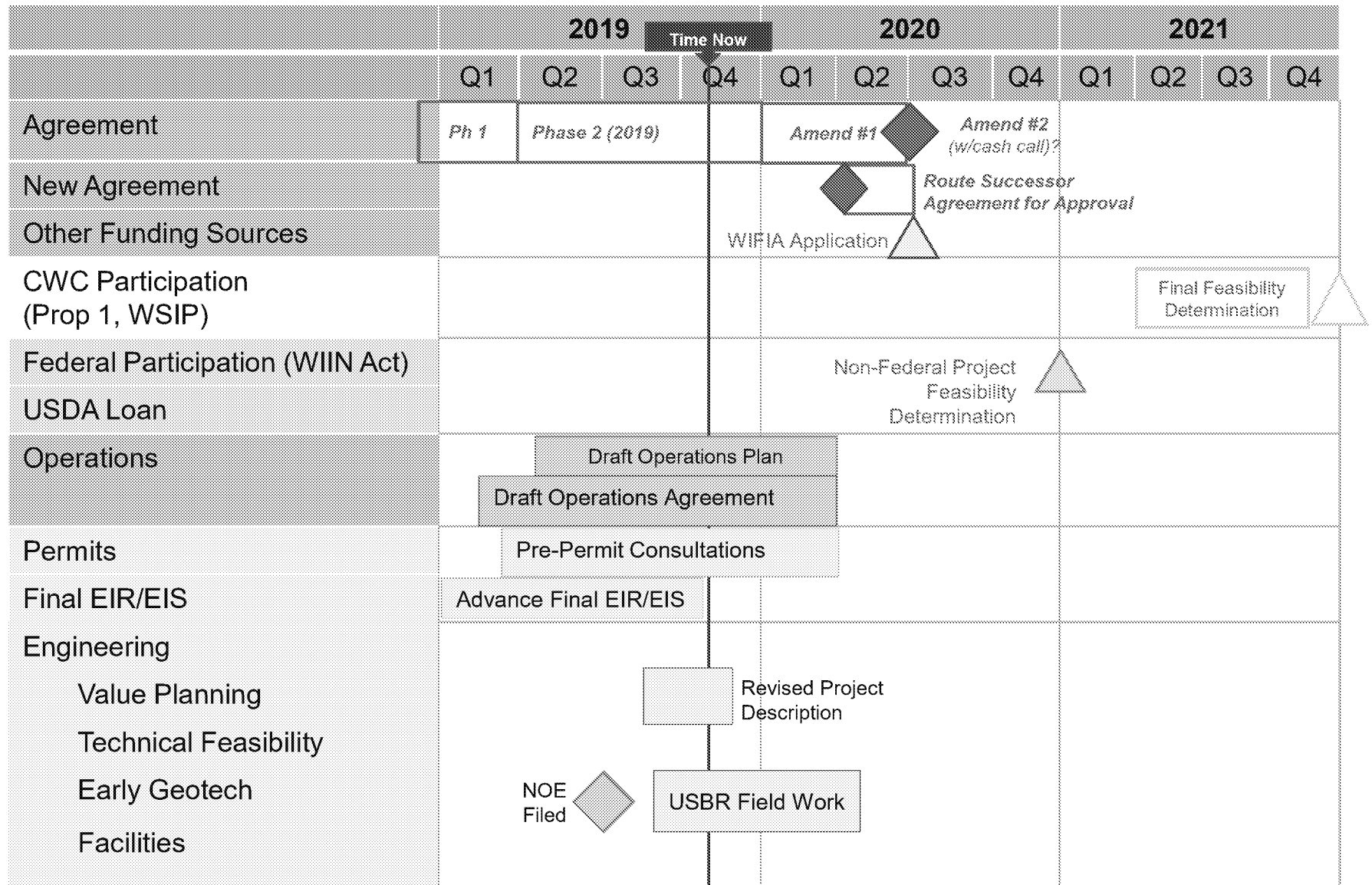
- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?



# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
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# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

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# Purpose of Workshop

- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

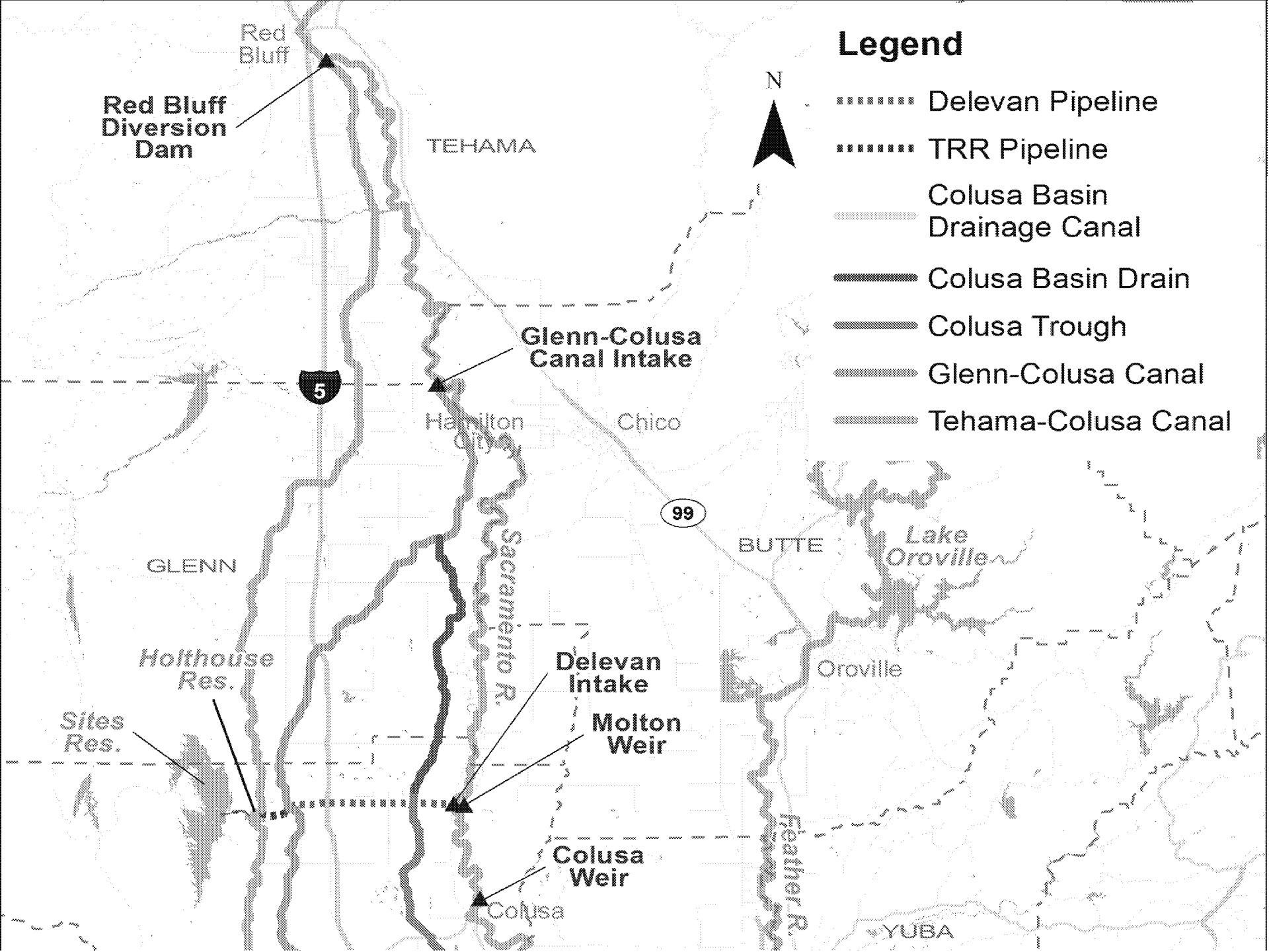
# OPERATIONAL CONSIDERATIONS STATUS

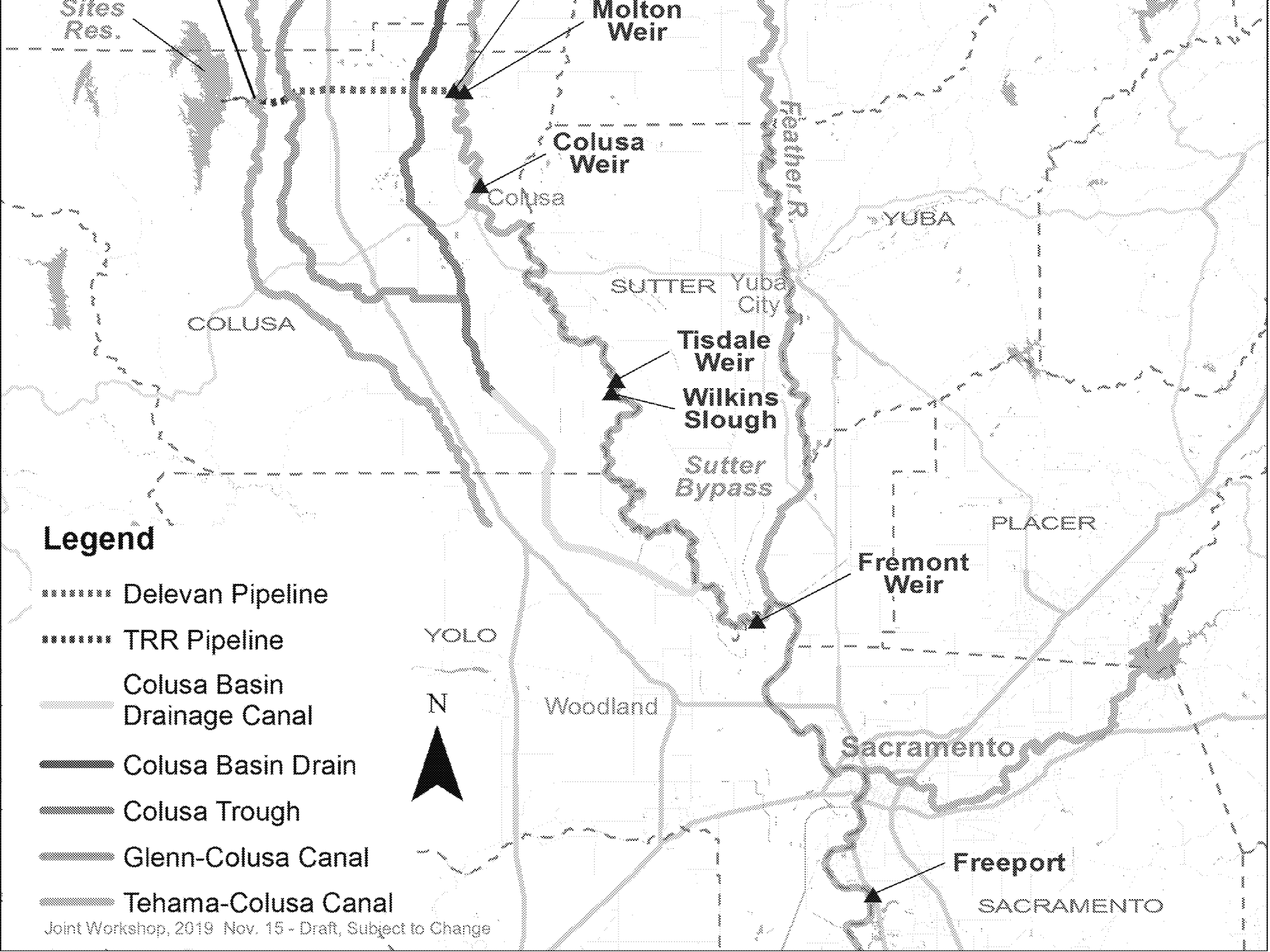




# Key Operational Activities

- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges





# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
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  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
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- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
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# Summary of Operational Scenarios Currently Being Discussed

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Potential Deliveries Range from 200,000 AF to 250,000 AF



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- Challenges:
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  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

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- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
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# Overview

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- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
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# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

MAF = million acre feet

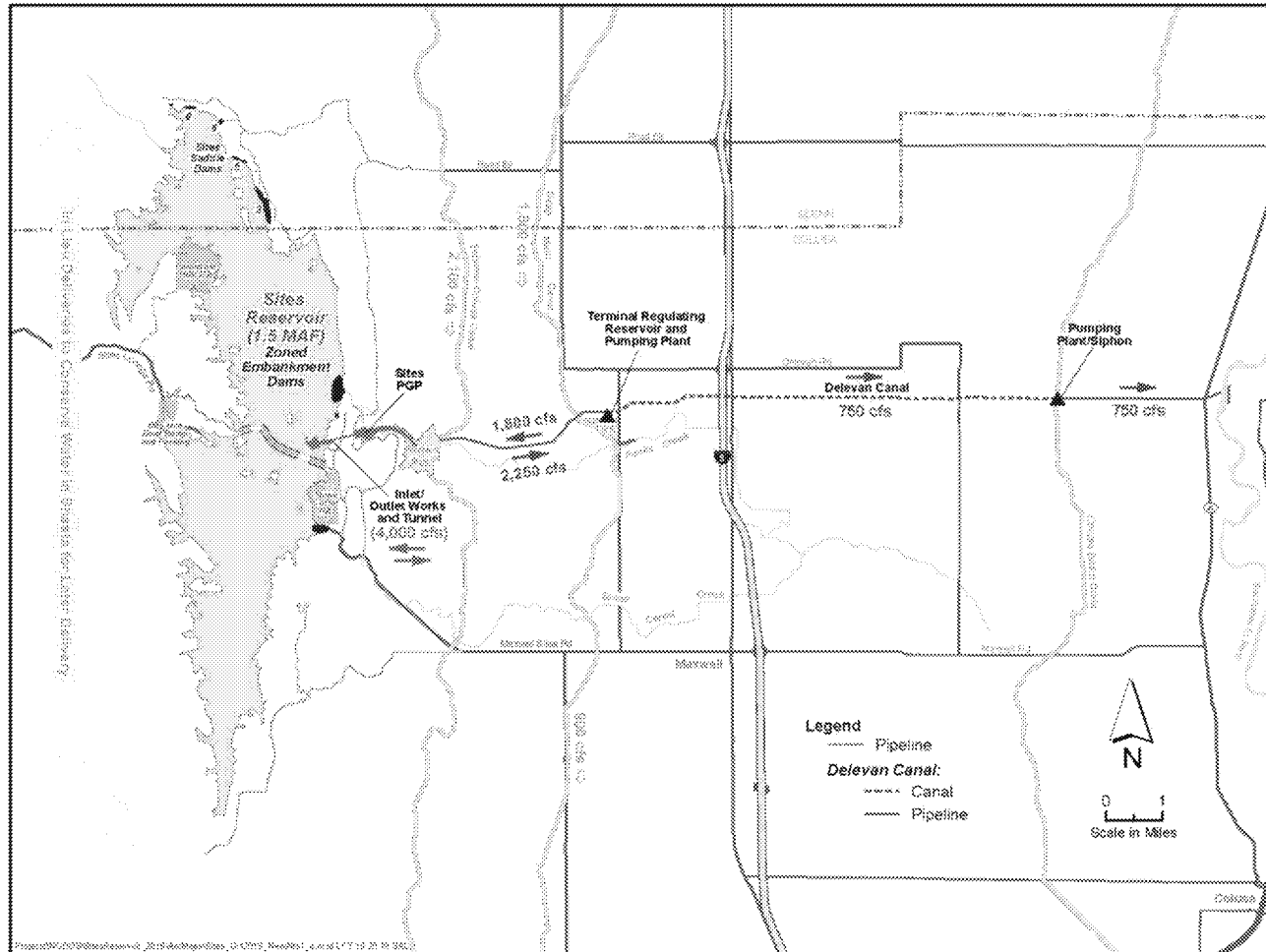
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**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**



**Figure 1**

# Alternative 2 – Similar to Alternative 1 but uses the southern road alignment to Lodoga in place of the bridge - \$4.0B

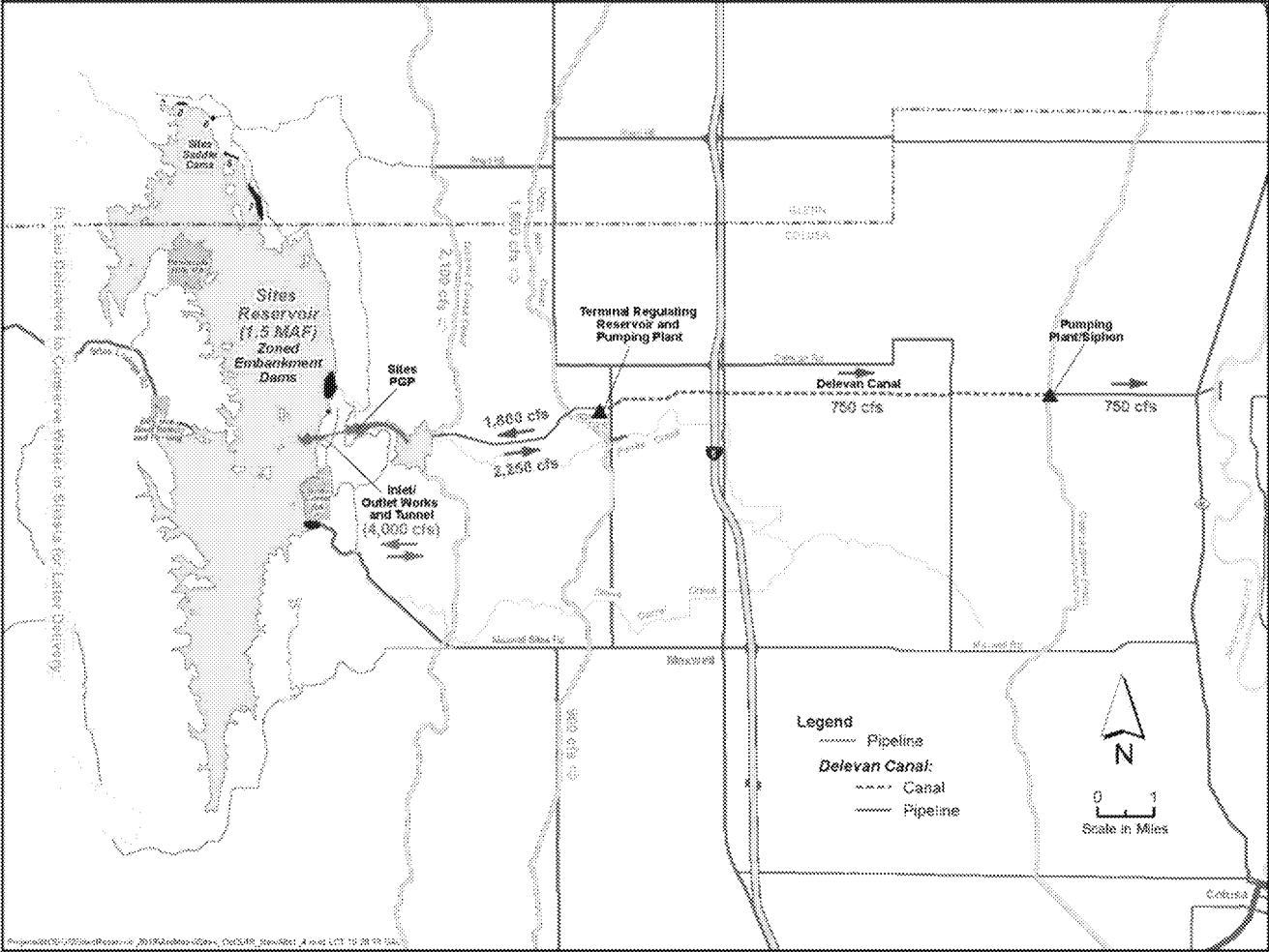


Figure 2



# Alternative 4a – Same as Alternative 1 but replaces the zoned rockfill embankment dam with an earthfill dam – \$3.8B

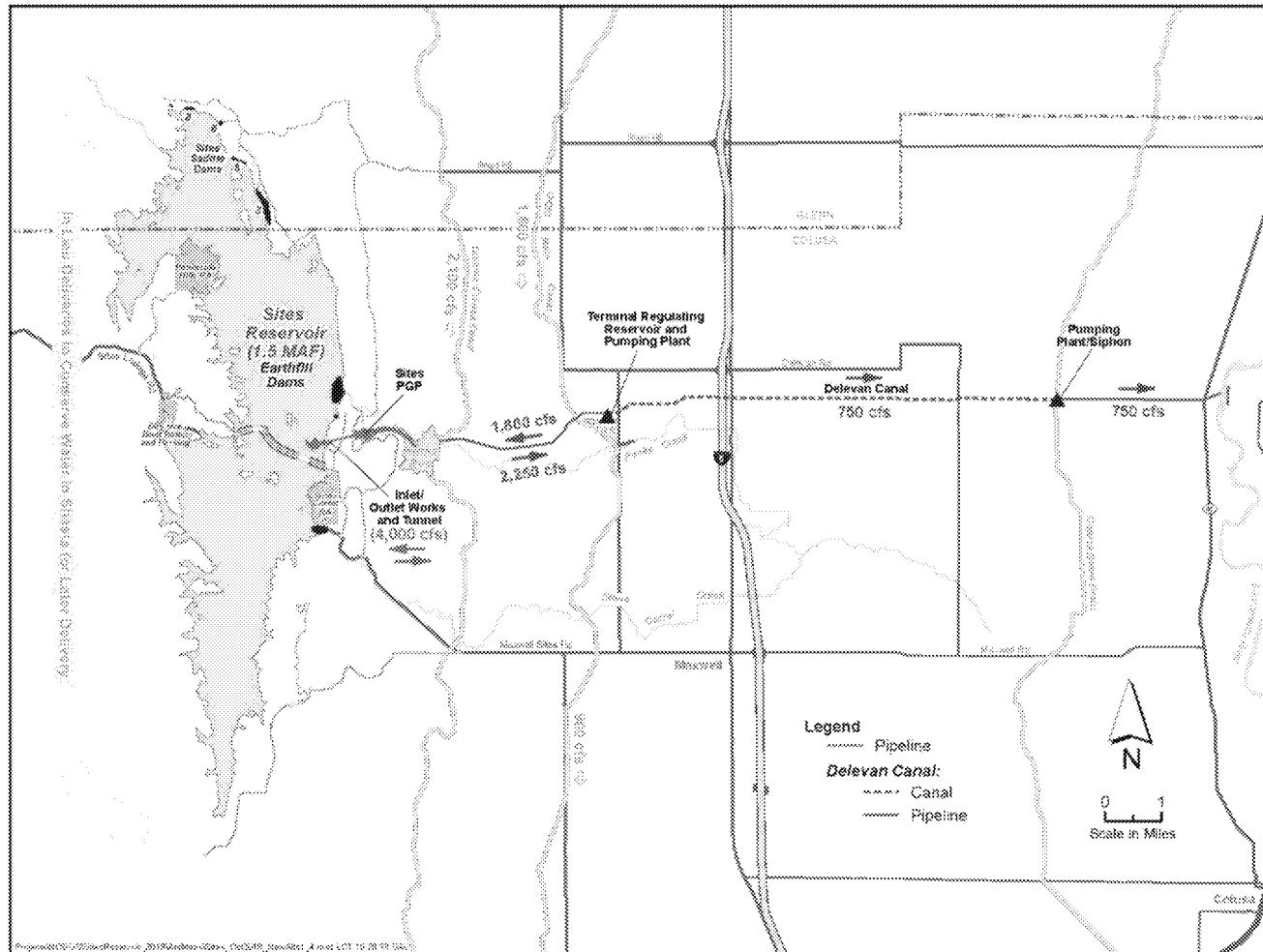


Figure 4a

# Alternative 4b – Same as Alternative 1 but replaces the zoned rockfill embankment dam with a hardfill dam – \$3.9B

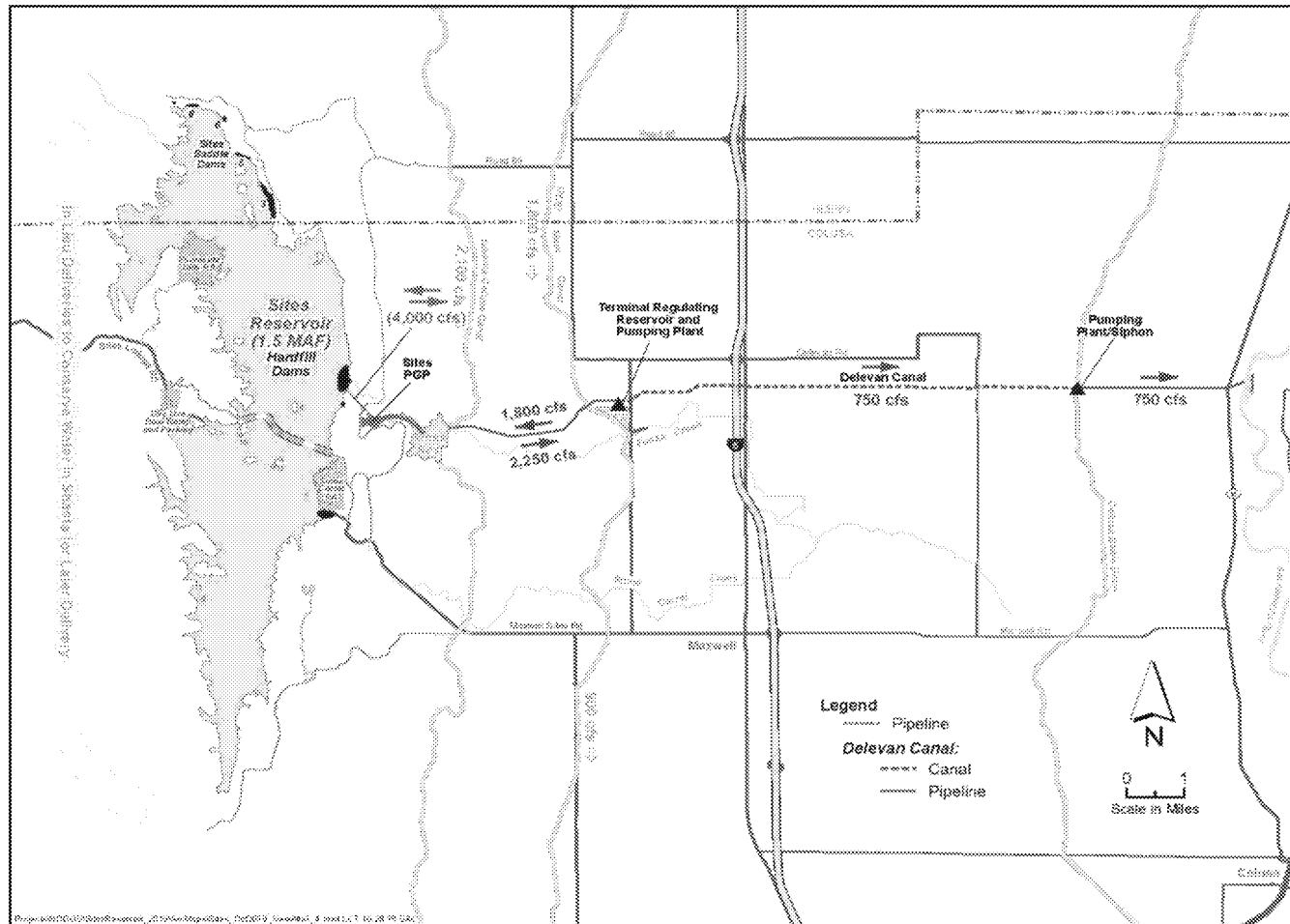
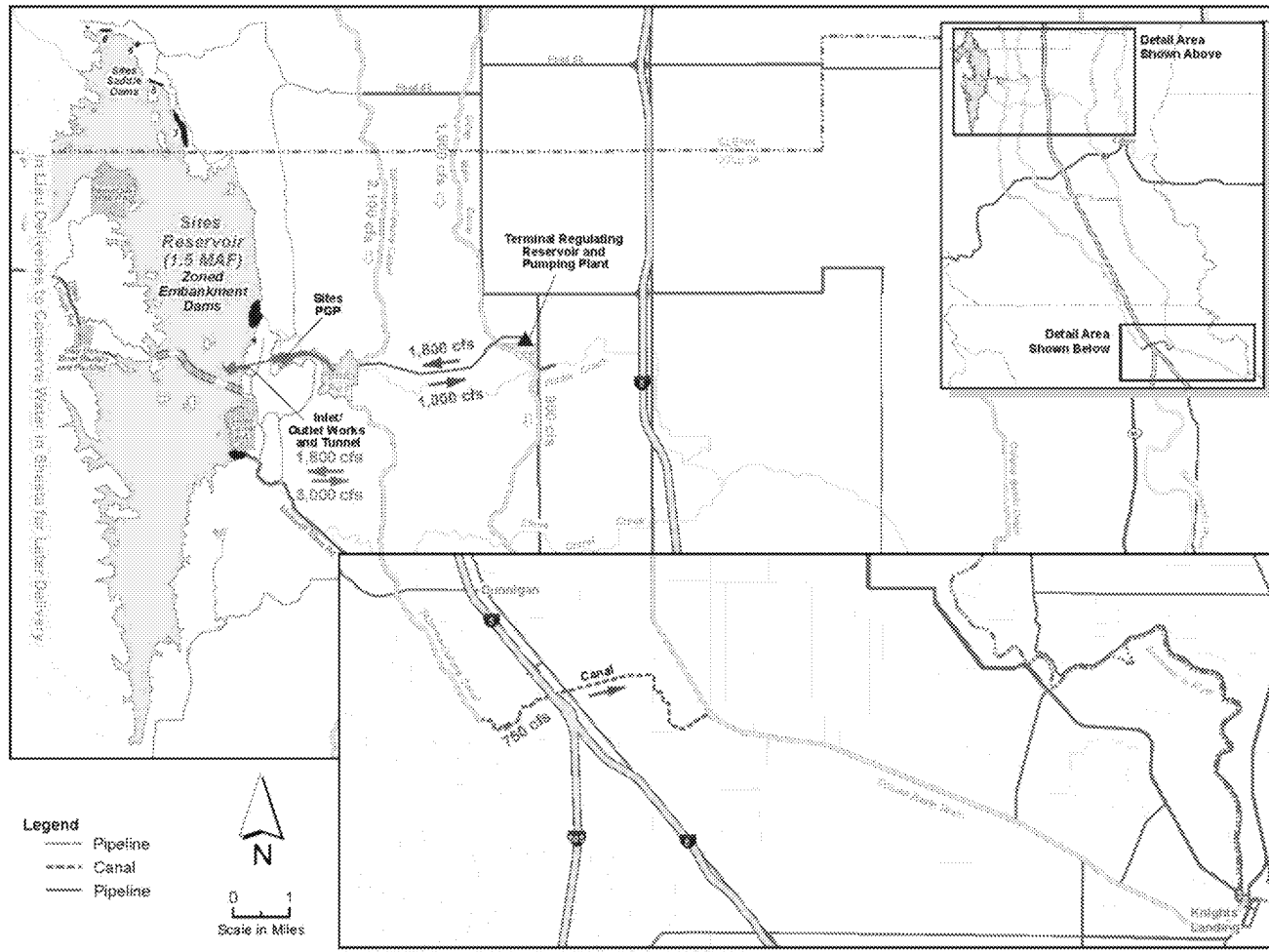


Figure 4b

# Alternative 5a – Similar to Alt 1, but replaces Delevan Canal/ Pipeline with pipeline/canal release from the Dunnigan Canal to the Colusa Basin Drain, thence through the lower portion of the Colusa Basis Drain to the Sacramento River - \$3.5B





# Alternative 5b - Similar to Alternative 5a but releases water from Dunnigan Canal to the Sacramento River via a canal, siphon and pumping plant - \$3.9B

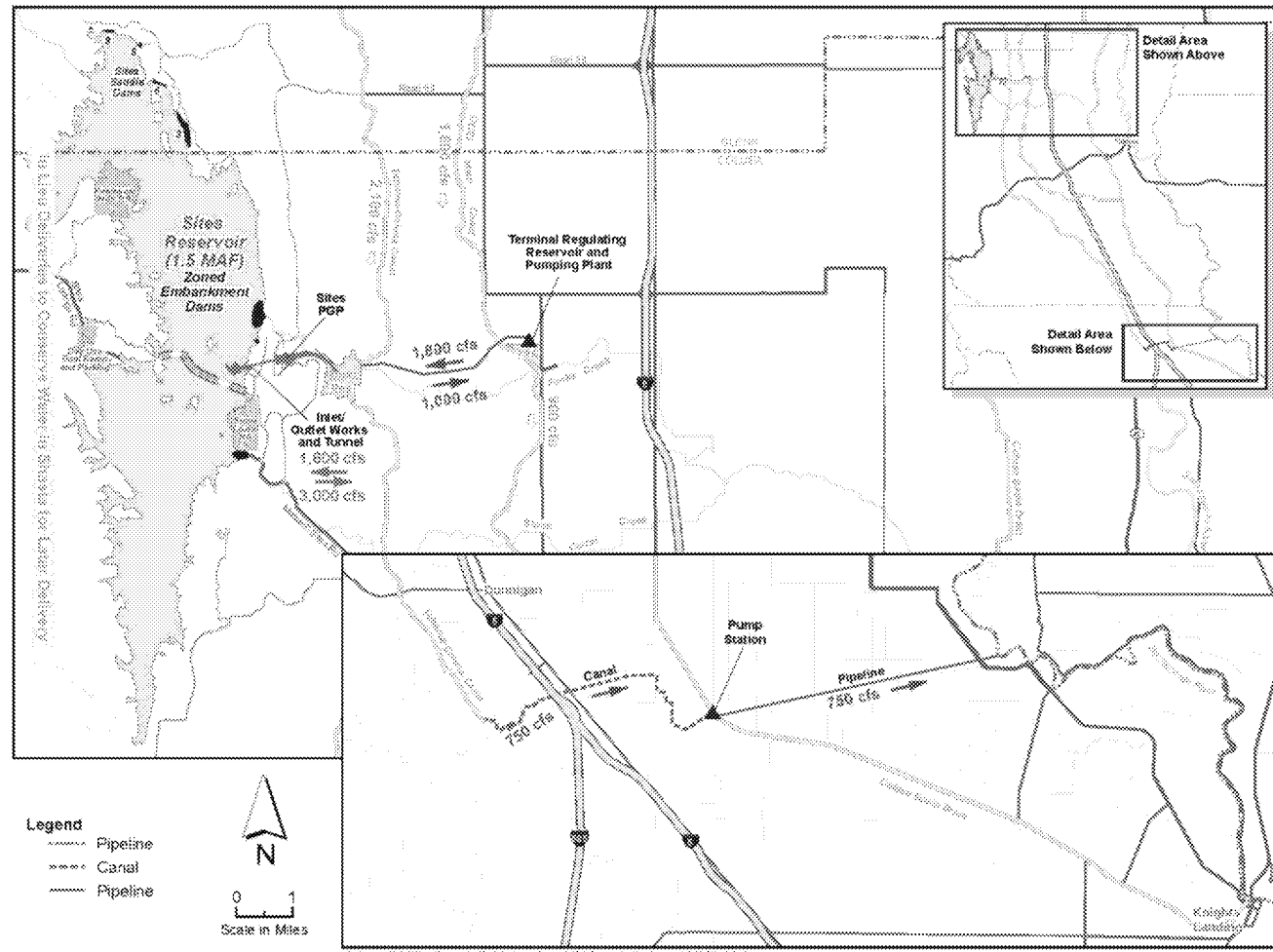


Figure 5b

# Alternative 6a – Lowest cost combination of Alt 3, 4 and 5a – replace Sites PGP with 2 smaller facilities, Dunnigan release to the CBD, and an earthfill dam - \$3.4B

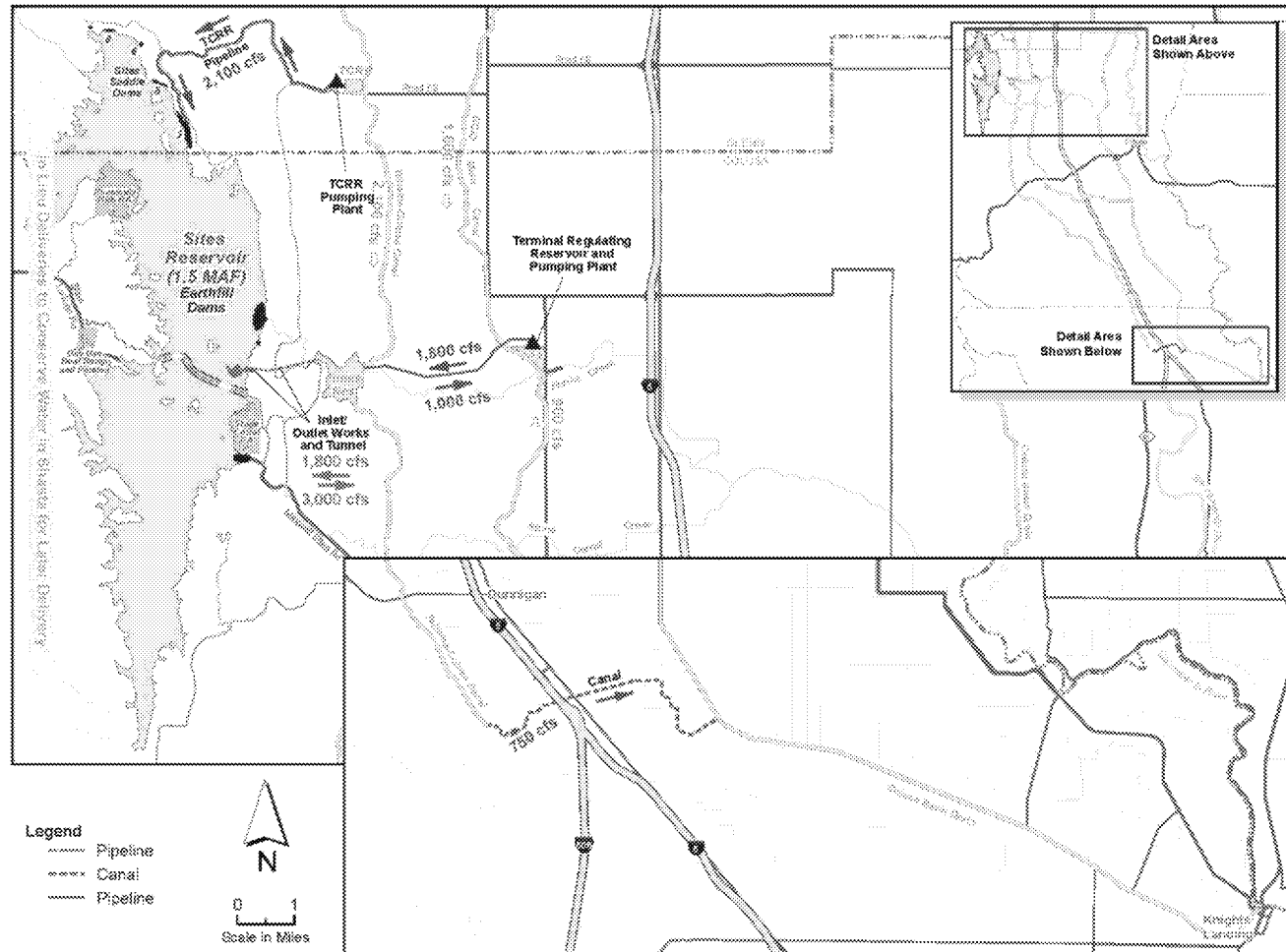
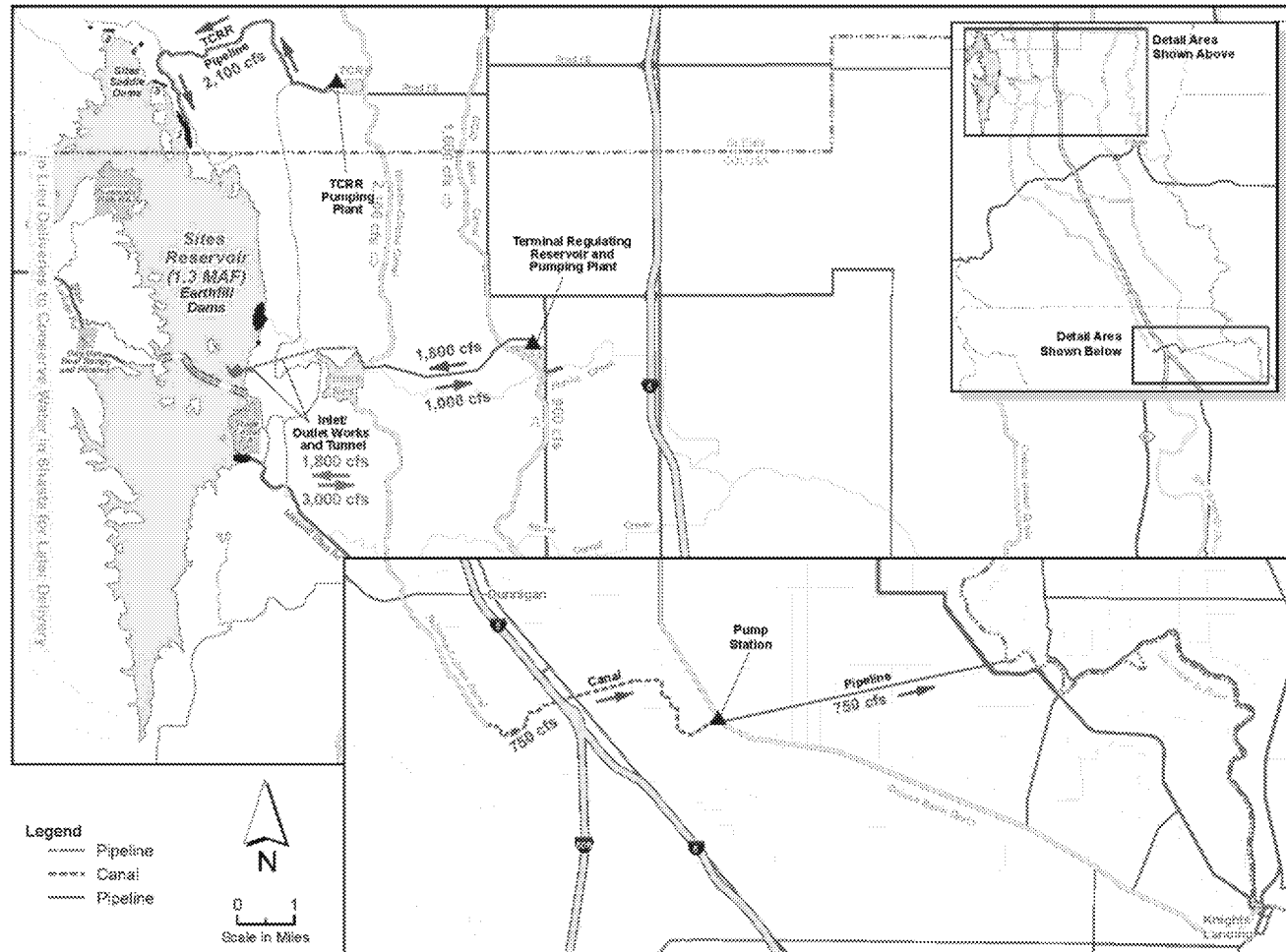


Figure 6a

# Alternative 6b – Similar to Alternative 6a, but reduces Reservoir to 1.3MAF and releases water from the Dunnigan Canal to the CBD - \$3.6B



# Estimated Project Costs

Alternative	Estimated Costs (\$2018) (financing cost not included)	Cost Reduction from Alternative D
Alternative D	\$5,235 million	0%
Alternative 1	\$3,970 million	24%
Alternative 2	\$3,988 million	24%
Alternative 3	\$3,868 million	26%
Alternative 4a	\$3,828 million	27%
Alternative 4b	\$3,861 million	26%
Alternative 5a	\$3,548 million	32%
Alternative 5b	\$3,876 million	26%
Alternative 6a	\$3,417 million	35%
Alternative 6b	\$3,584 million	32%

- Alternative Project Costs Range from \$3.4 to \$4.0B versus \$5.2B for Alternative D
- Alternative D includes \$218M of Risk (4.2%) from the February 2018 Risk Analysis. Value Planning estimates do not include risk adjustment or analysis.

# Value Planning Uncertainties

- Screening-level cost estimates have an expected variation range of (Association for Advancement of Cost Engineering):
  - Low range: -20% to +30%
  - High range: -50% to +100%
- But some facilities (especially the dams) have far more cost certainty than -50% to +100%. The higher percentages DO APPLY to facilities not included in Alternative D (e.g., a new regulating reservoir for the T-C Canal and a southern conveyance from Dunnigan).
- The entire project does NOT have a -50% to +100% estimate level. We don't have an \$8B project.
- Final project features and costs will vary from those presented.

# Key Elements of Success for Value Planning

- Permitting - identify the reasonable range of CDFW permitting outcomes
- Shasta Exchange - in cooperation with Reclamation, develop parameters and quantities for drier year exchanging Sites water into Shasta so that the Sites release facilities can be downsized / relocated
- Operations Plan – update the operations assumed for the WSIP application to reflect the above and current conditions
- Project Description – revise (if necessary) to reflect Value Planning outcomes



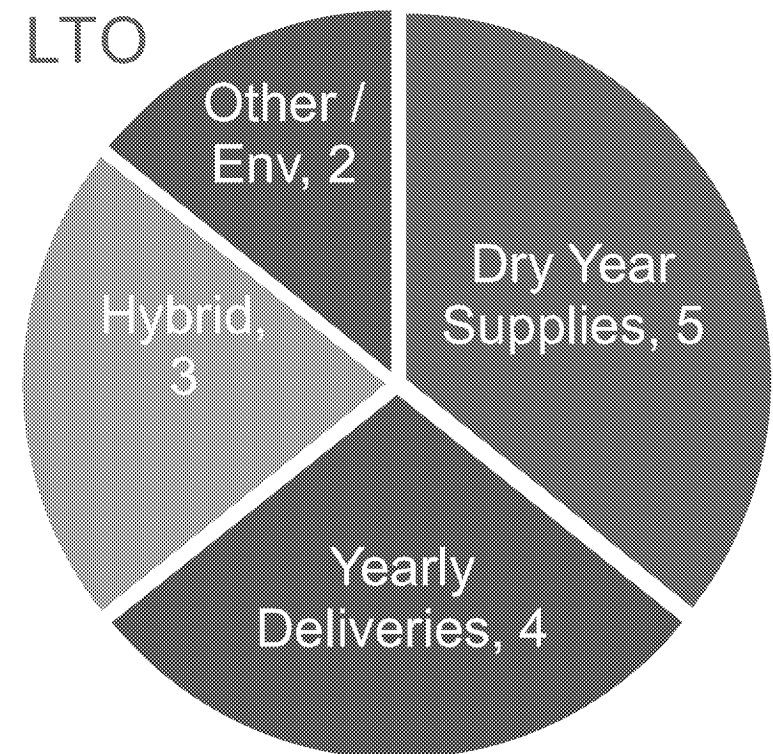
# OPERATIONS AND REPAYMENT STATUS



# Informal Survey Results

(2019 August)

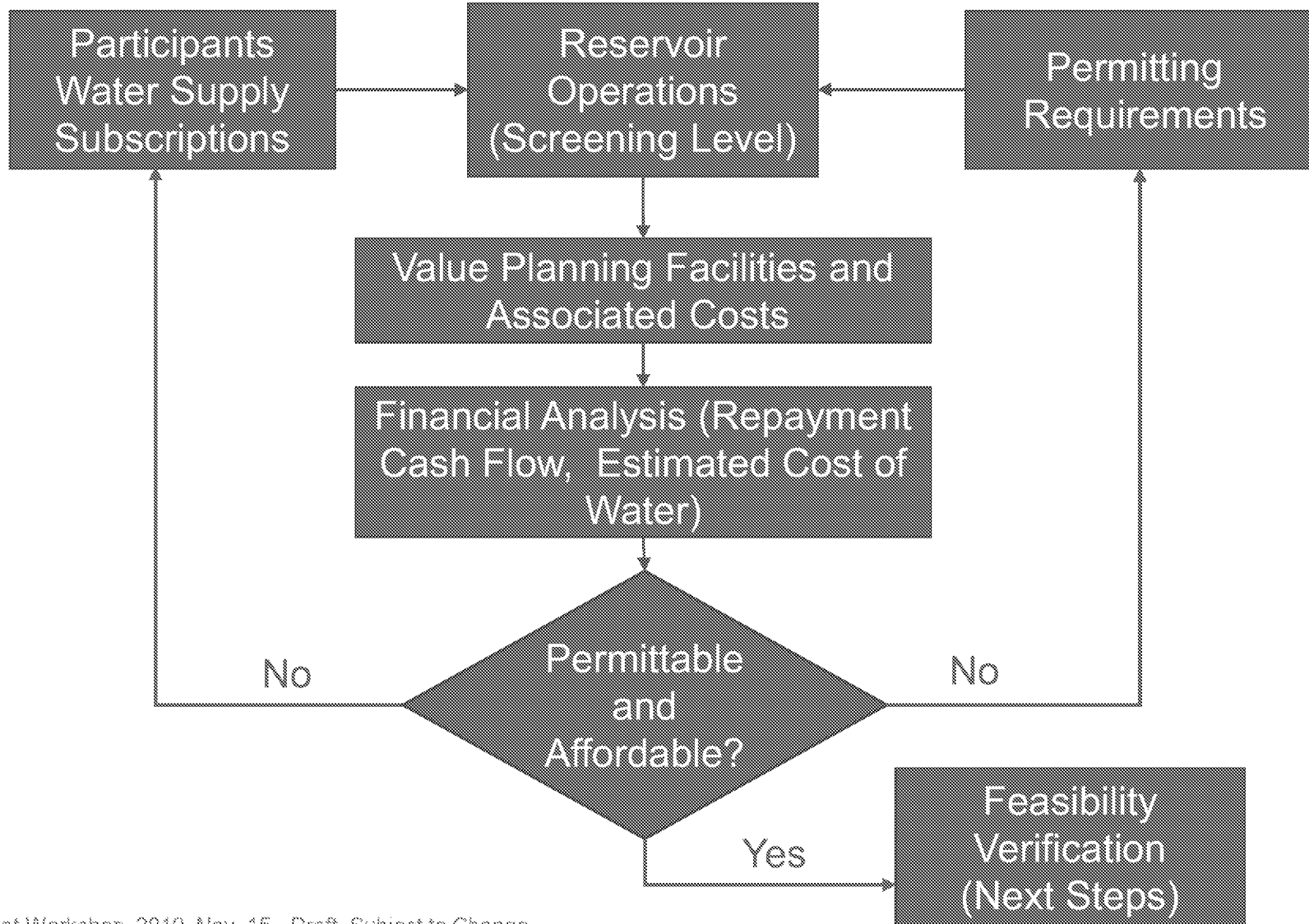
- Responses: 14 of 21  
(108,442 AF of Participation = 56%)
- Diverse set of drivers  
(Cost, permitting, ROC on LTO  
CVP/SWP, VA's)
- Participation increases as  
costs decrease,  
particularly below  
\$750/AF



# Purpose of the Operations and Repayment Analysis

- Provide information regarding the potential range of cost of water in terms of annual repayment and operational costs
- Provide information regarding the potential range of annual cash flow requirements

# Operations and Repayment Analysis Process (Background)



# Participation Assumptions

- Participant current subscription level = 192,812 AFY
- State based on Proposition 1 WSIP funding:
  - Total funding is \$816M
  - Deduct \$241.8M flood control and recreation benefits
  - Portion for environmental water supply is ~16,000 to 35,000 AFY
  - Assumes a separate storage account is used to cover O&M for environmental water



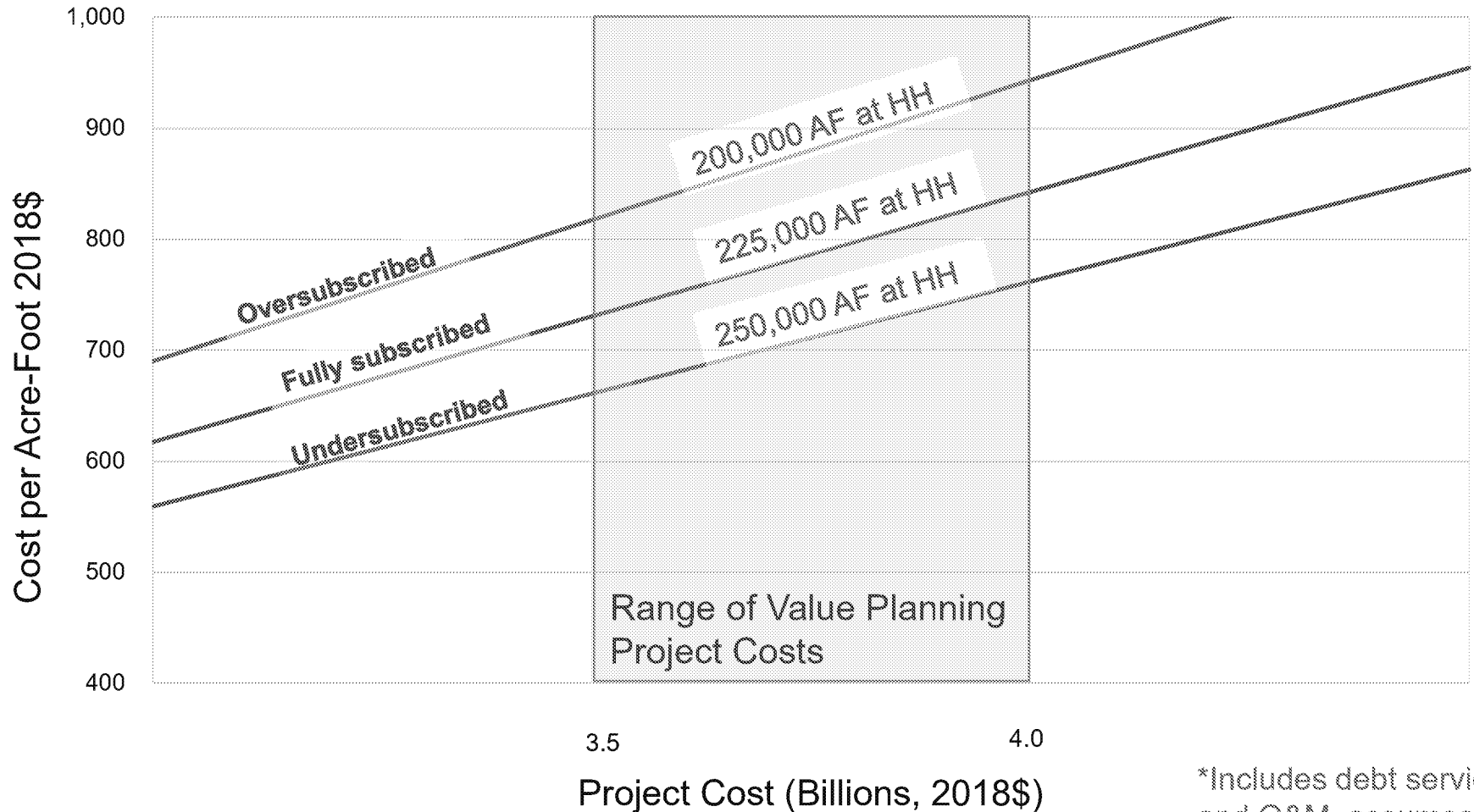
# Financial Working Assumptions

Item	Value
<b>Interim Loan</b>	
Interest Rate	3.00%
Unutilized Rate	0.75%
<b>Revenue Bonds</b>	
Interest Rate	5.00%
DSRF% of Maximum Annual Debt Service	50%
DSRF Earnings Rate	4.00%
Bond Fund Interest Earnings Rate	2.00%
First Maturity	12/1/2032
Final Maturity	6/1/2066
<b>USDA Loan</b>	
Interest Rate	3.875%
<b>WIFIA Loan</b>	
Interest Rate	3.500%
Construction Risk Mitigation Percentage	4.20%
<b>Inflation Escalators</b>	
Pre-Construction Escalation/year	1.50%
Construction Escalation/year	2.02%
Labor Inflation Rate/year	2.00%
Non-Labor inflation rate/year	2.00%
Electrical Generation Price Escalation/year	2.00%
Months for Generation post COD	24



# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan

# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	610	710	810	910	
225,000	670	780	890	1,000	
200,000	750	870	1,000	1,120	
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# SIMPLIFIED REPAYMENT TOOL

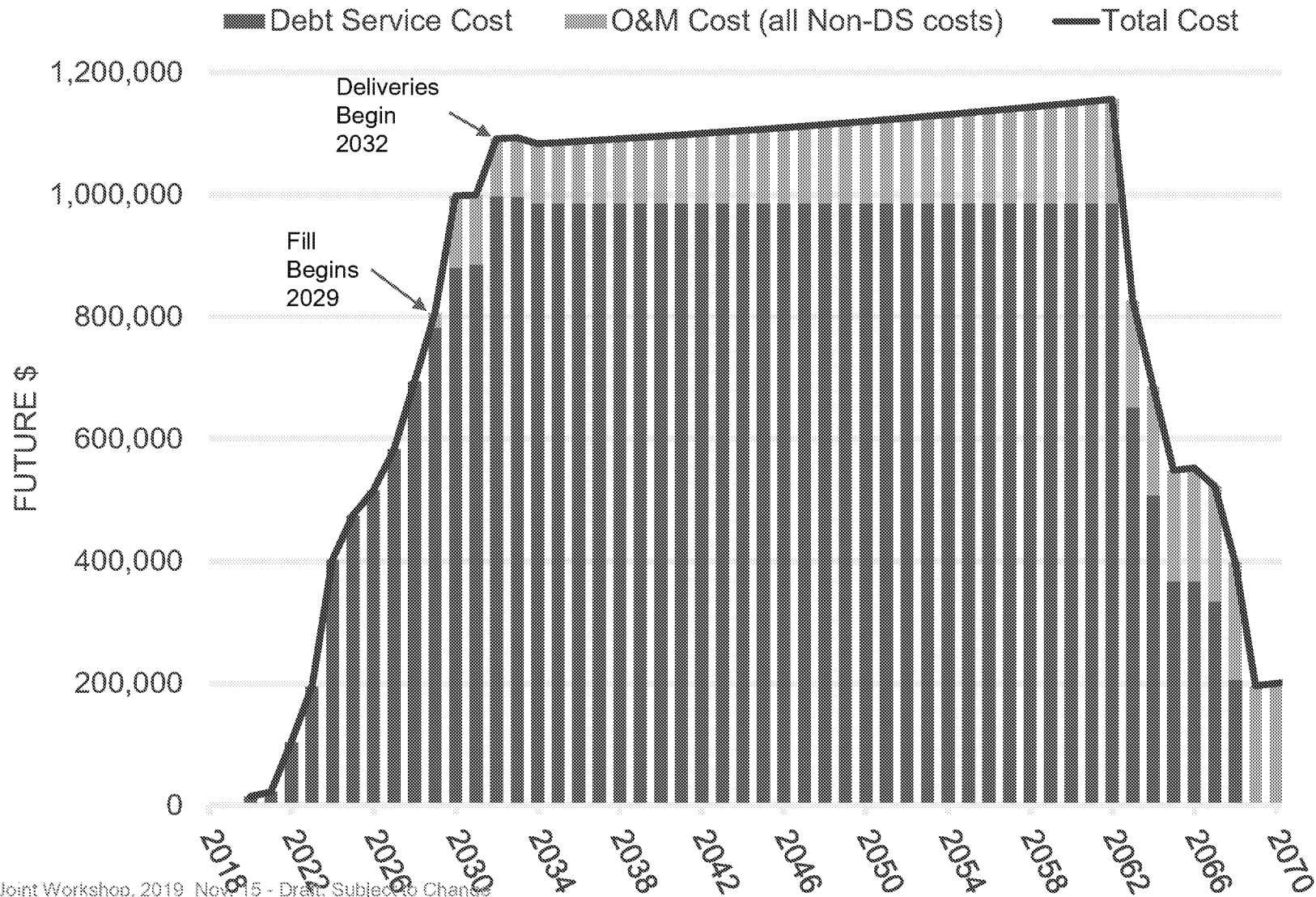


# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)



# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations





# Simplified Repayment Tool Demonstration

<b>Input in green cells</b>	<b>Reservoir Cost (\$billions, \$2018)</b>				3.5
	<b>AF Water Deliveries at Holthouse</b>				225
	<b>Include WIFIA (yes=1, no=0)?</b>				1
	<b>Participation Level</b>				1,000
<b>Water Deliveries (AF)</b>	<b>Reservoir Cost (\$2018, billions)</b>				
	3.0	3.5	4.0	4.5	
	<b>Total \$/AF Released (w/o WIFIA) (2018\$)</b>				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	<b>Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)</b>				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	

# NEAR TERM IMPLEMENTATION



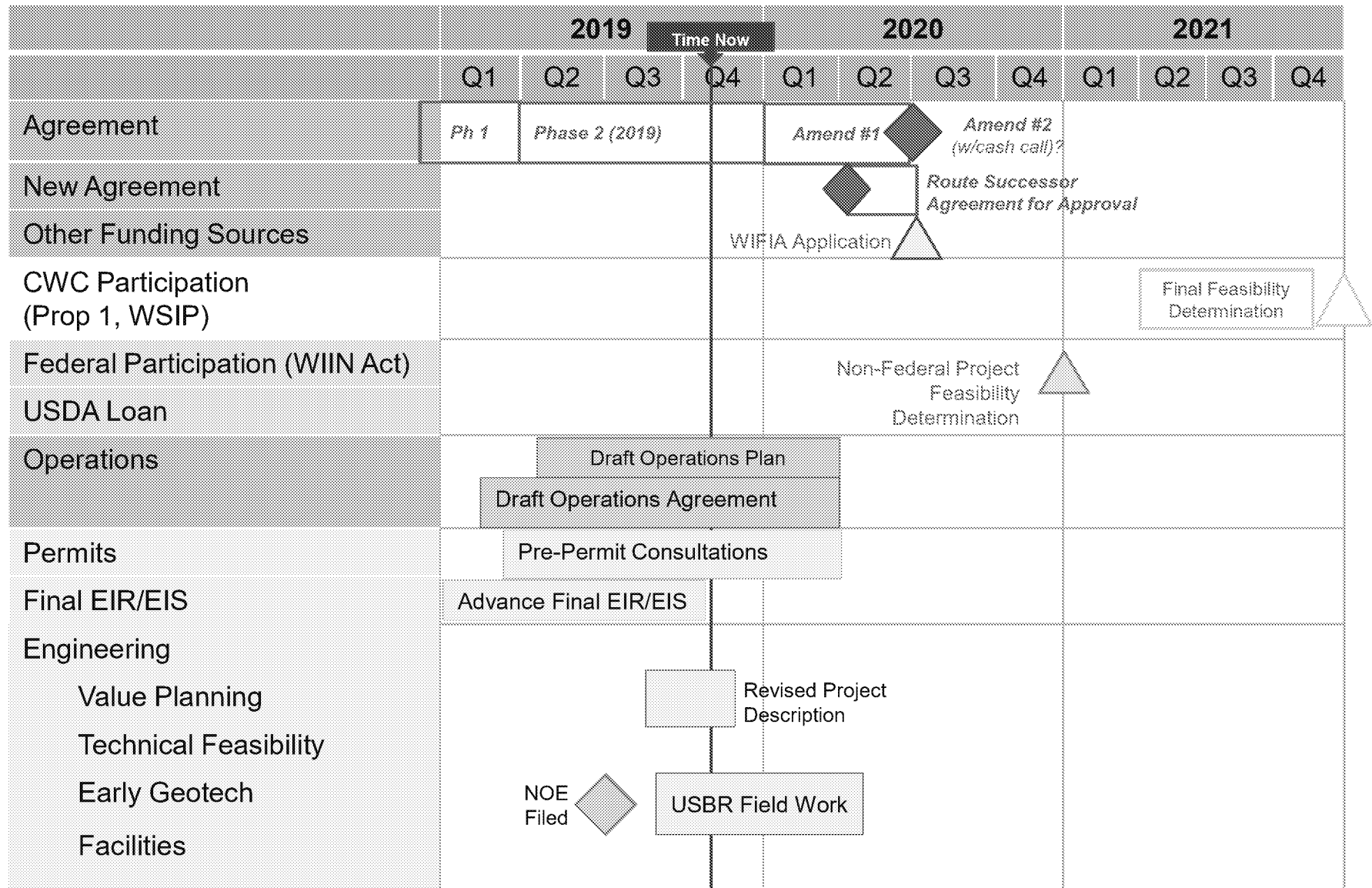
# Where does the Project go from here? (1 of 3)

- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?

# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
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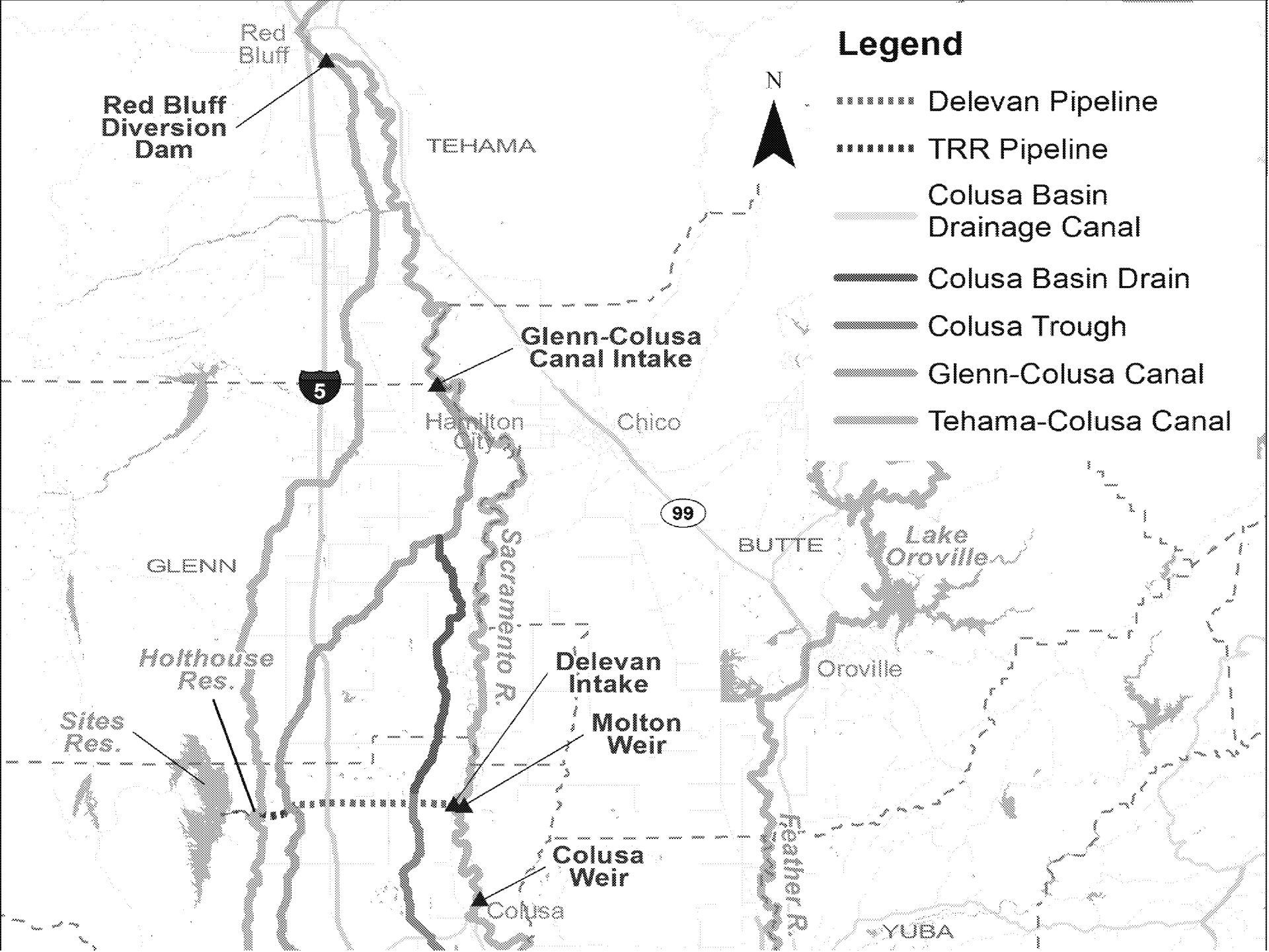
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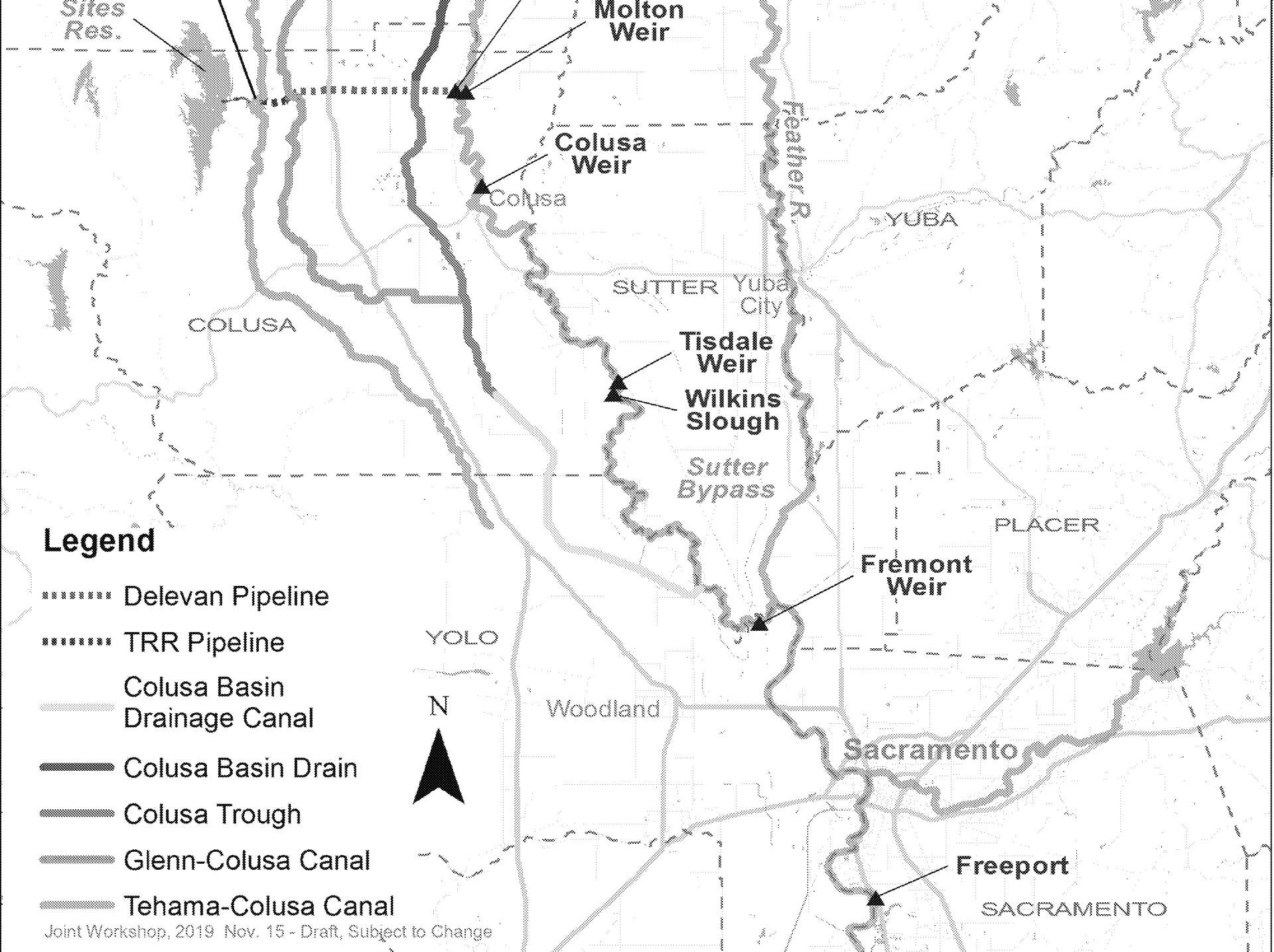


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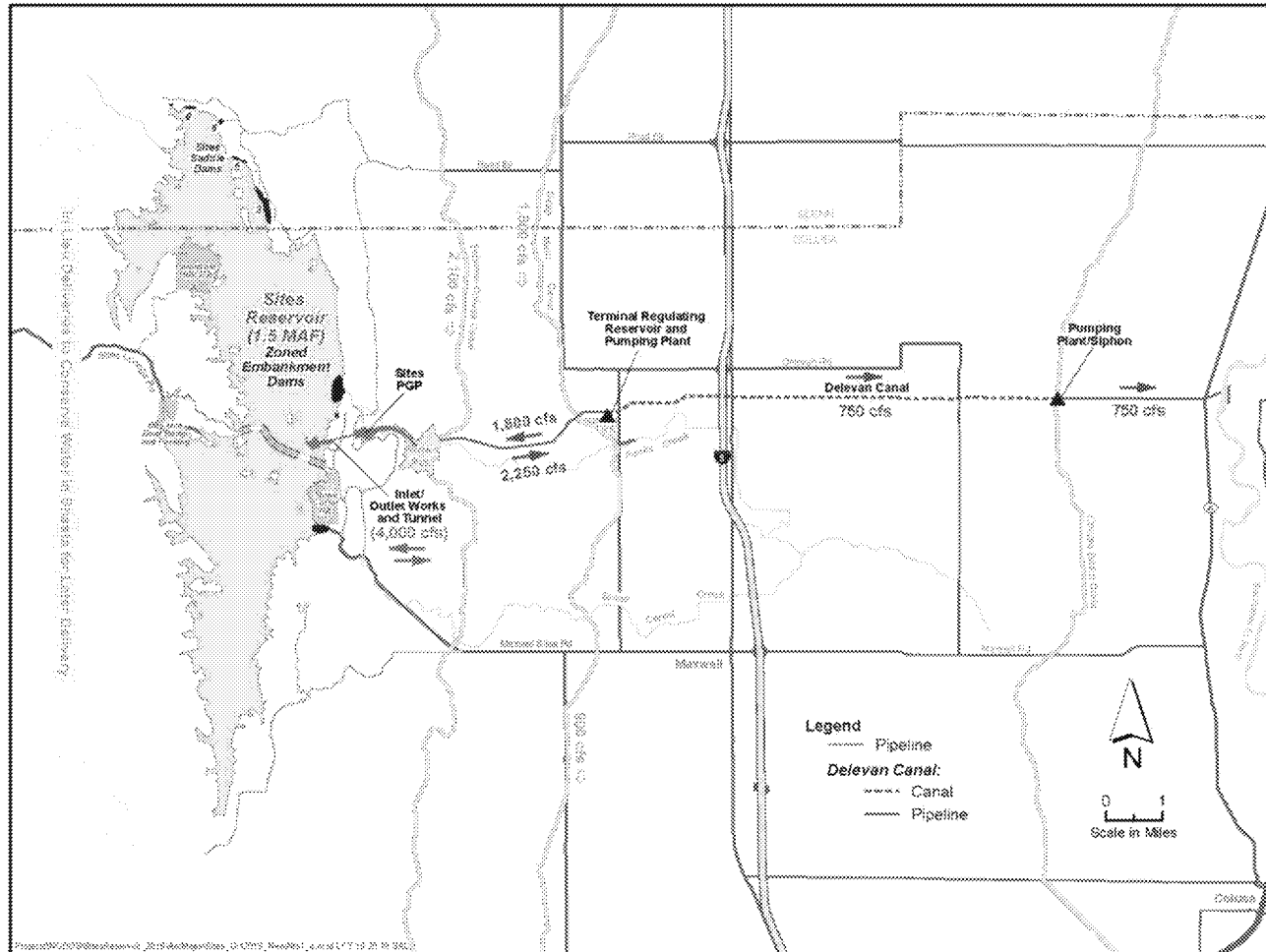


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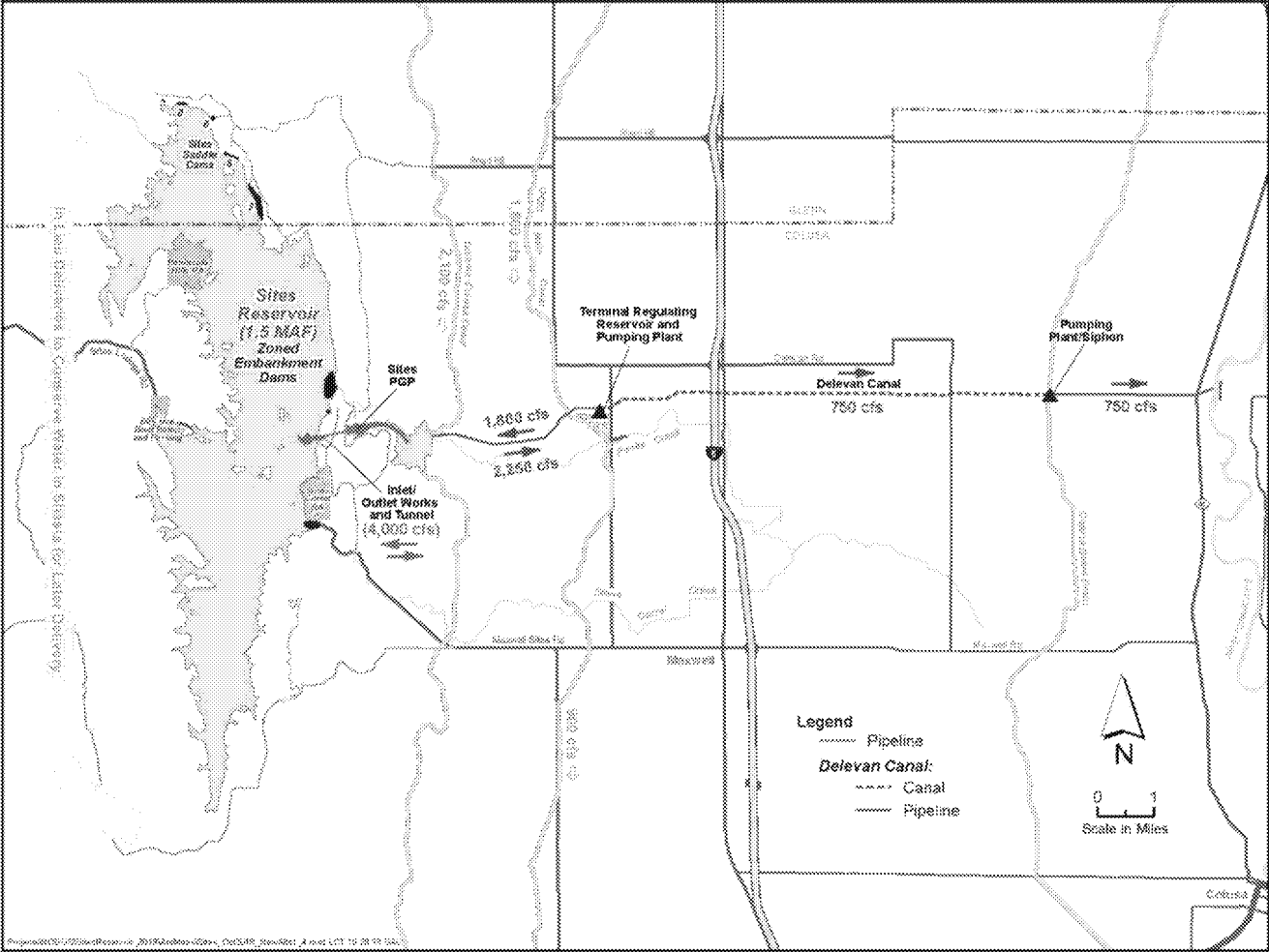


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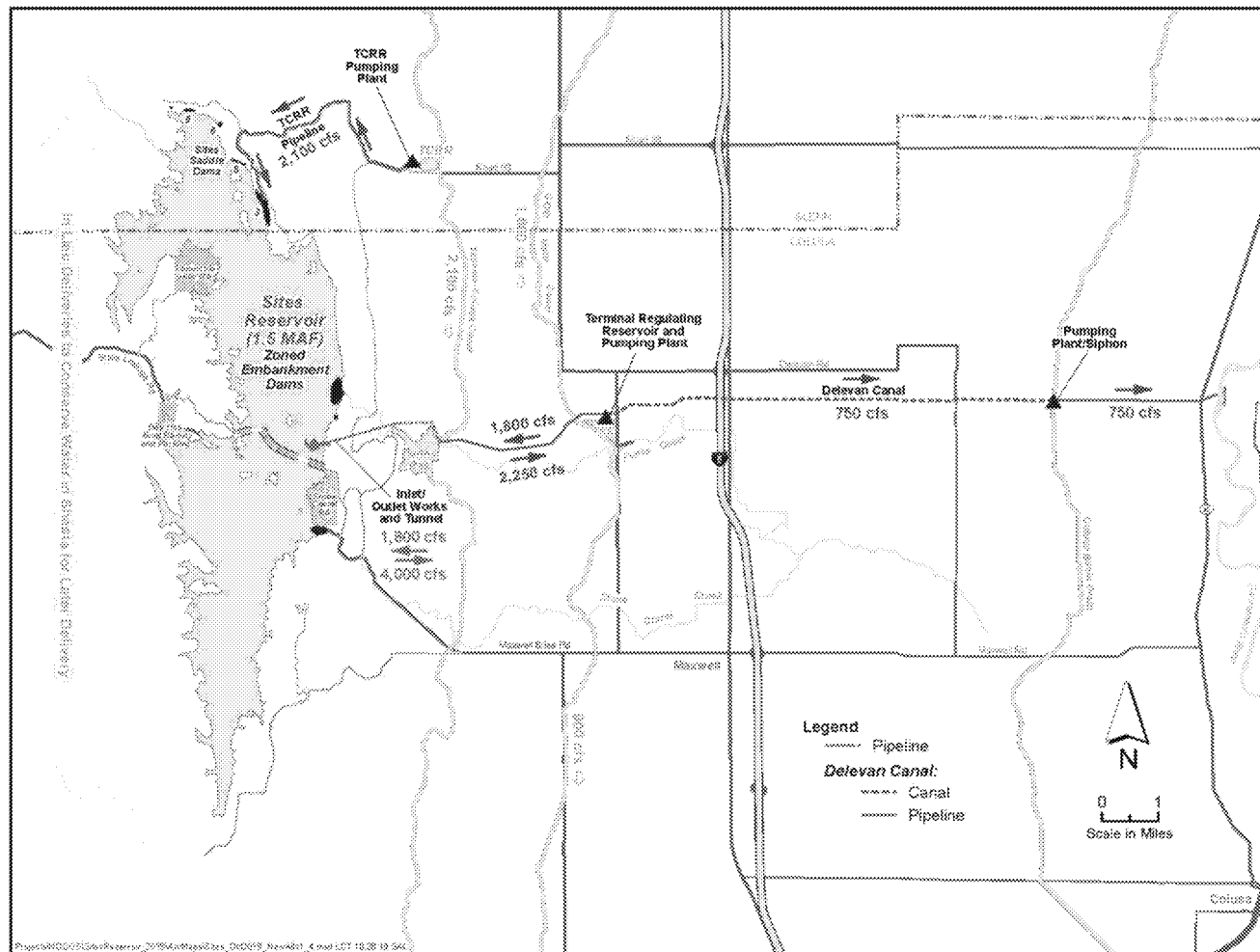


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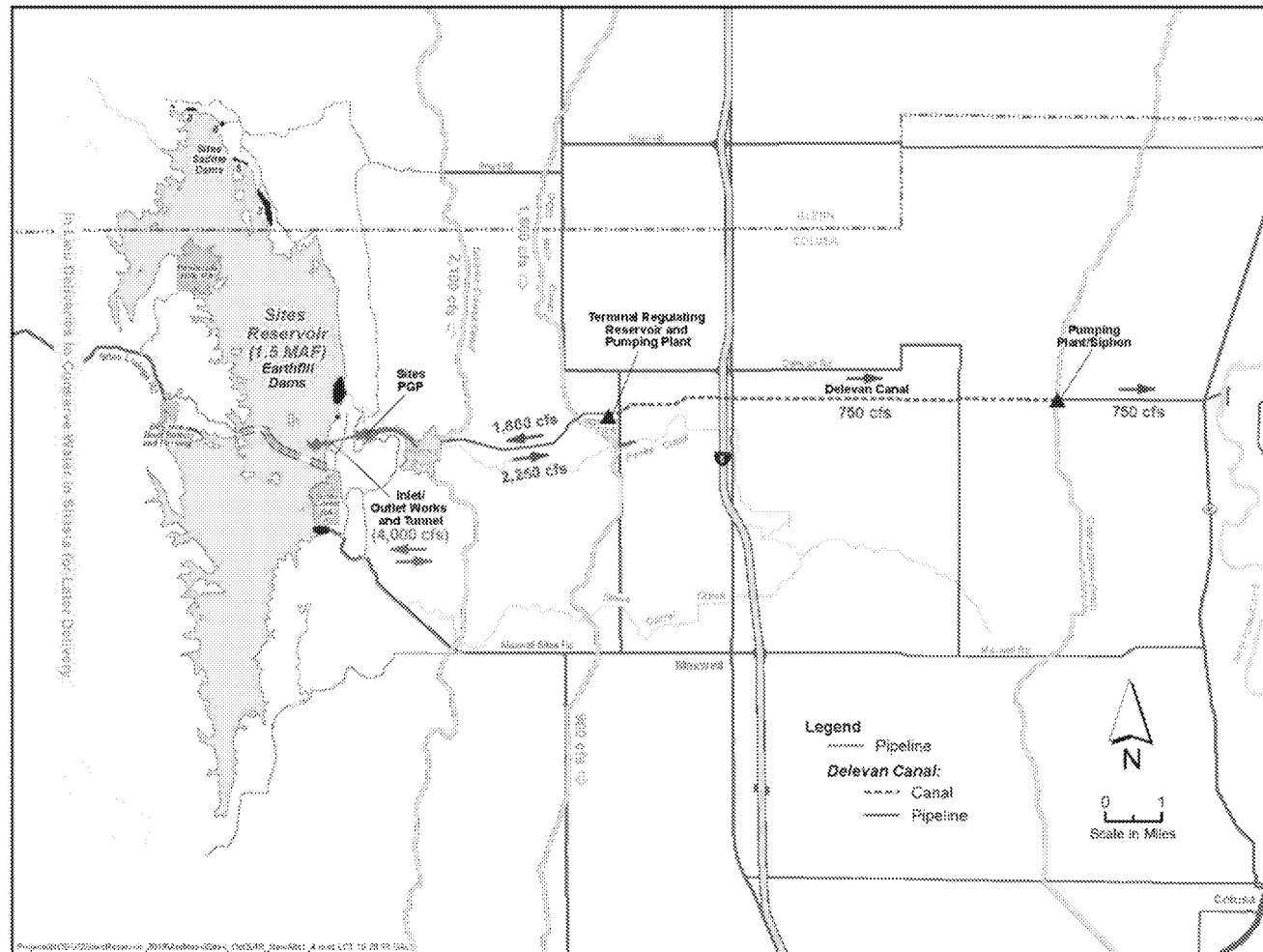


Figure 4a

# Alternative 4b – Same as Alternative 1 but replaces the zoned rockfill embankment dam with a hardfill dam – \$3.9B

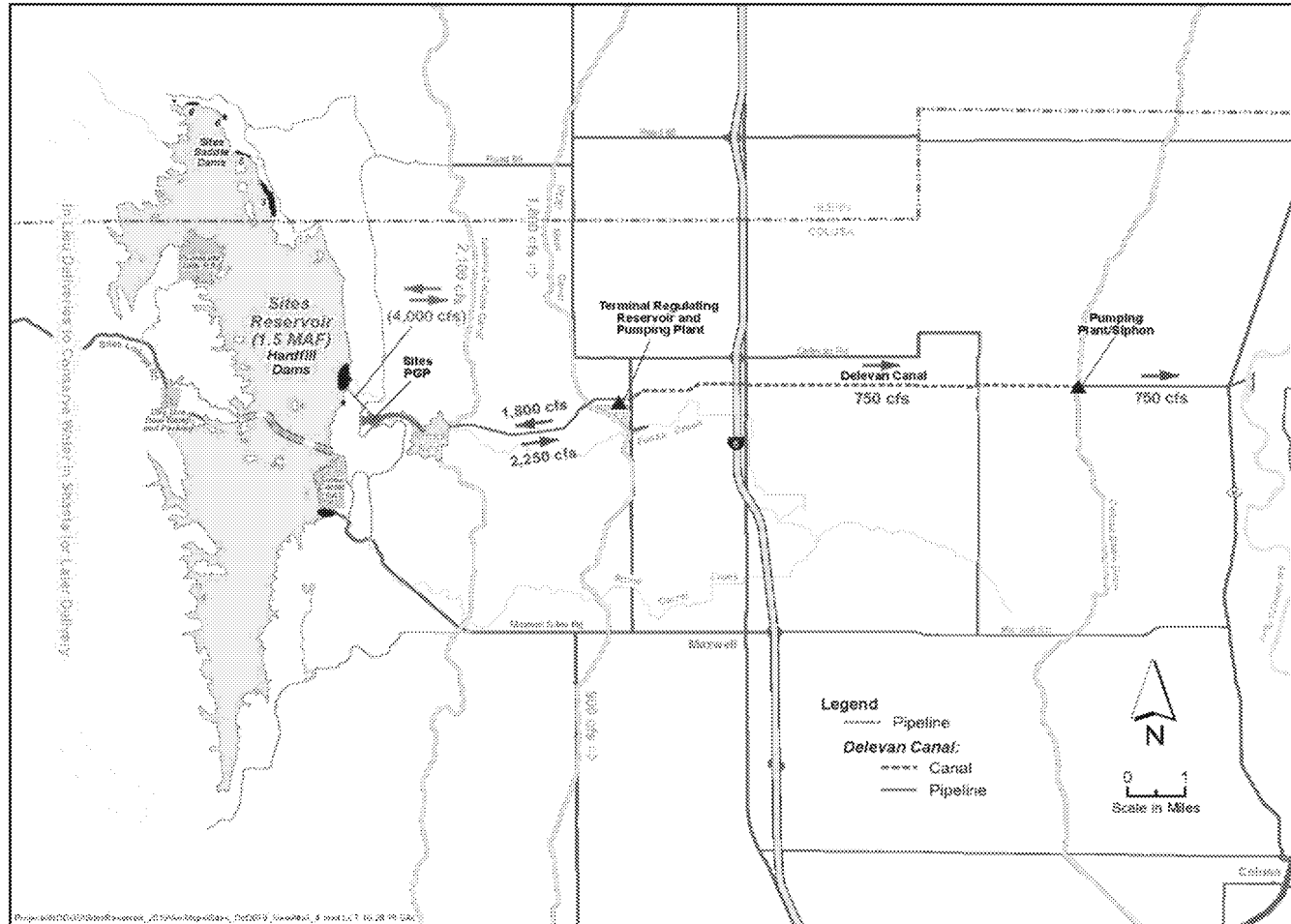
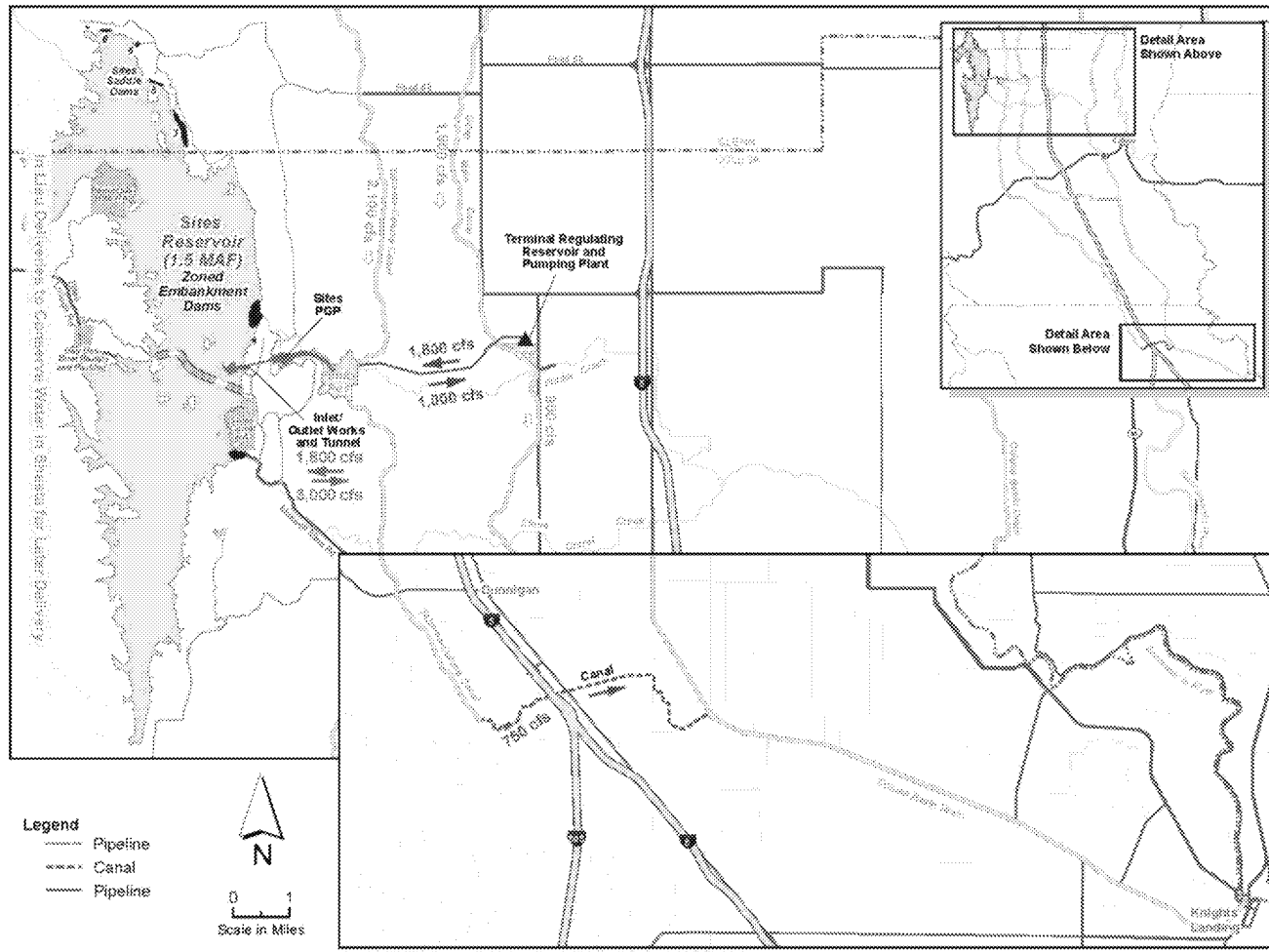


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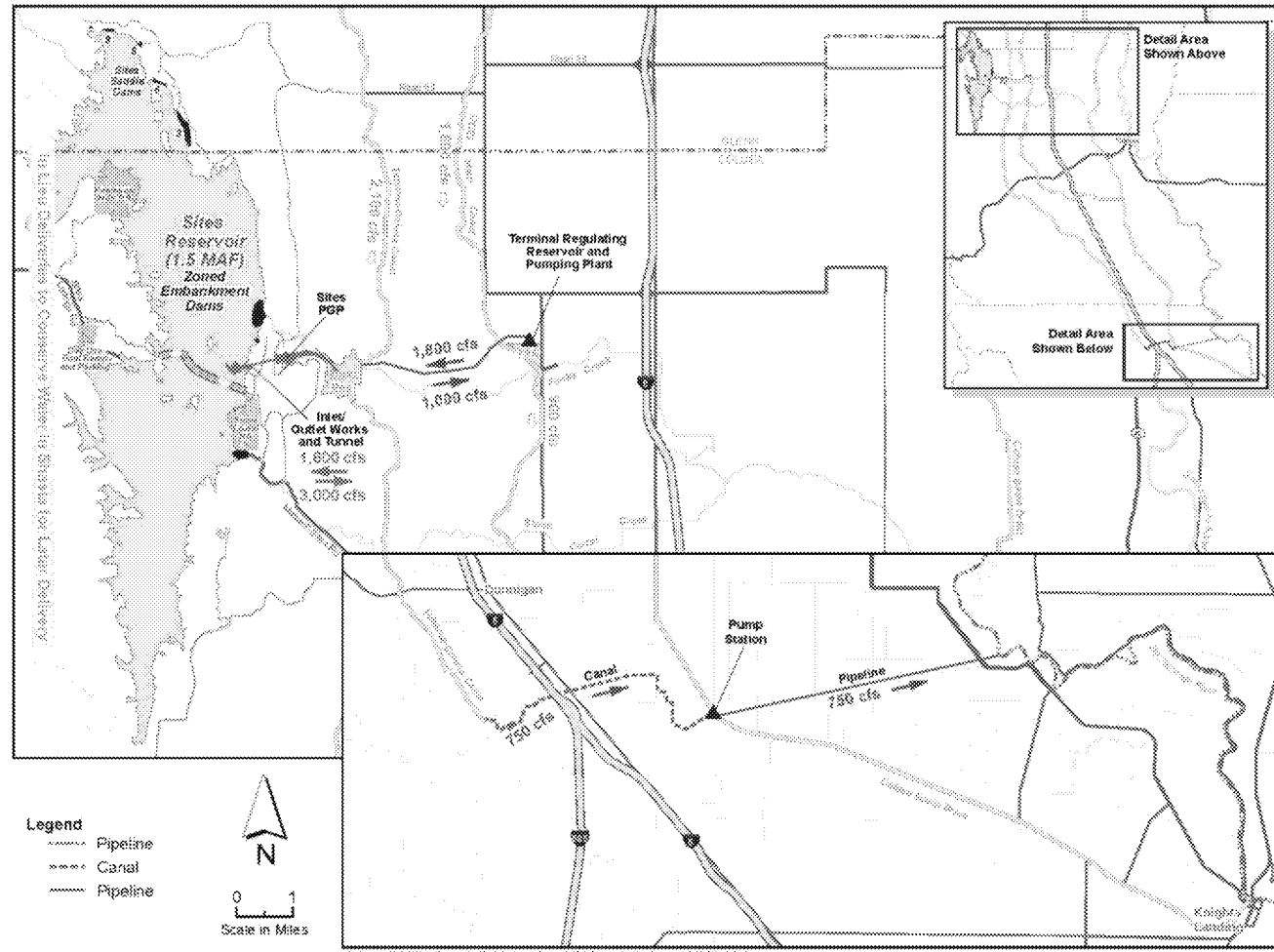


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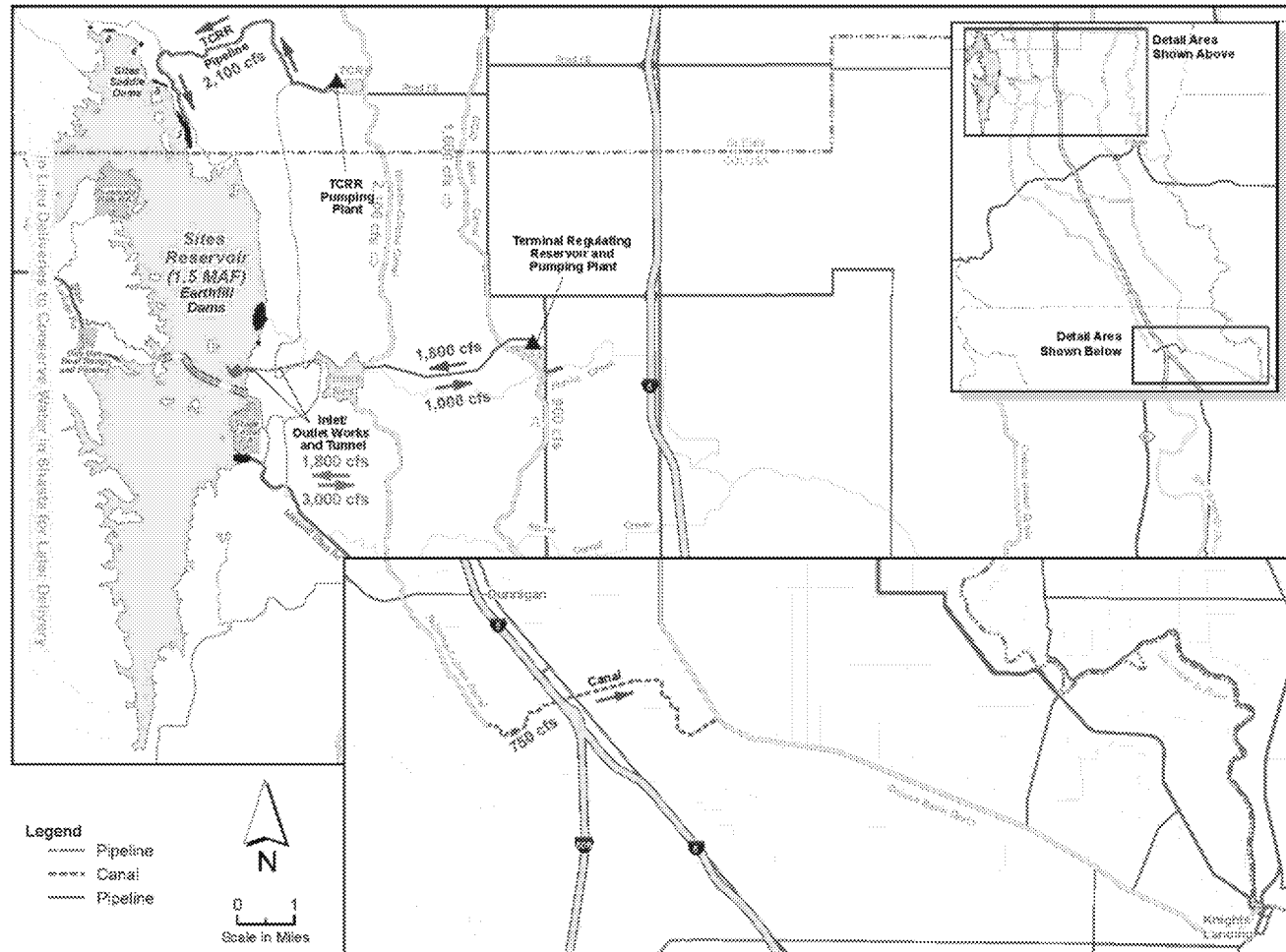


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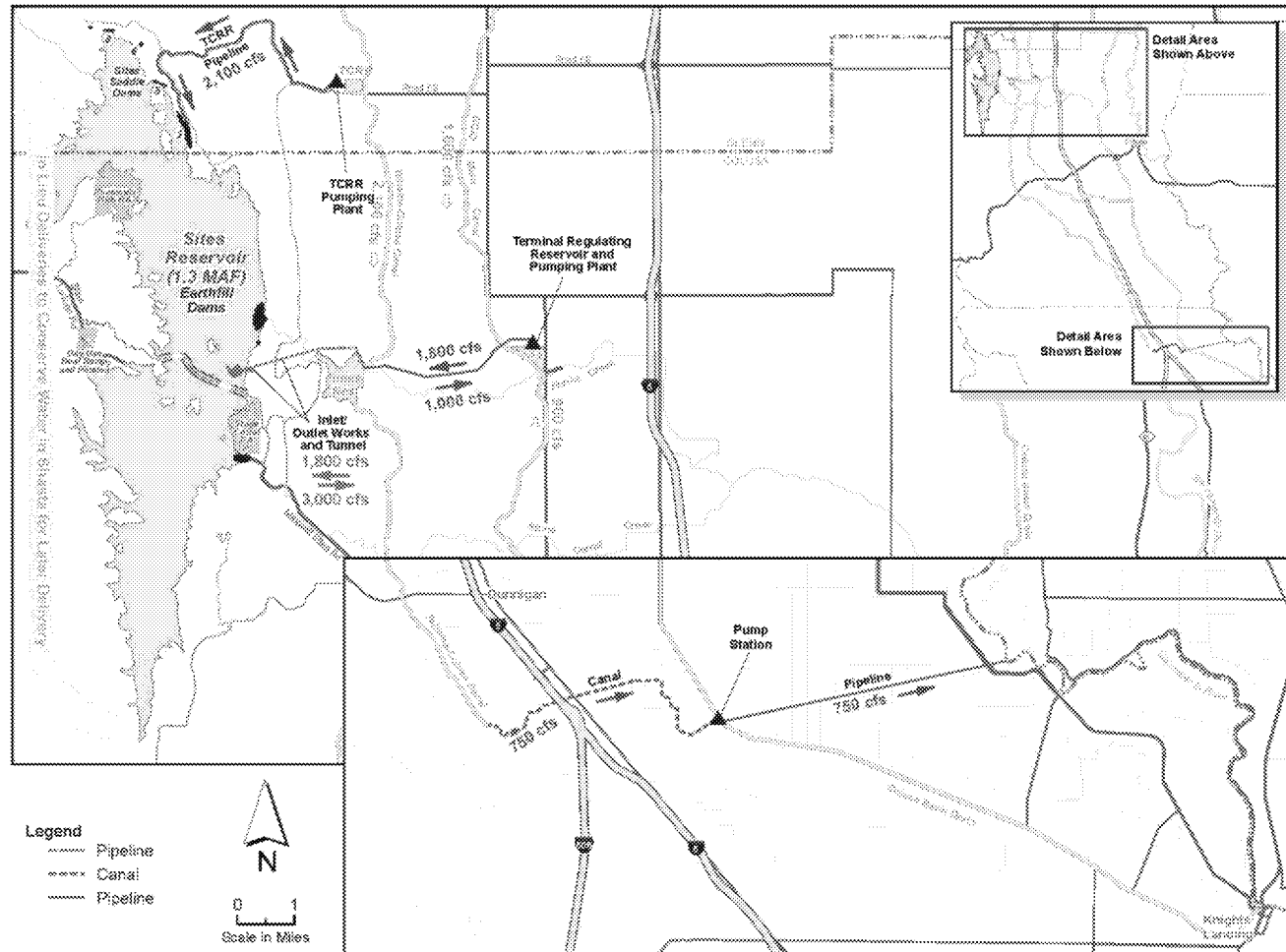


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# Estimated Project Costs

Alternative	Estimated Costs (\$2018) (financing cost not included)	Cost Reduction from Alternative D
Alternative D	\$5,235 million	0%
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Alternative 2	\$3,988 million	24%
Alternative 3	\$3,868 million	26%
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- Alternative D includes \$218M of Risk (4.2%) from the February 2018 Risk Analysis. Value Planning estimates do not include risk adjustment or analysis.

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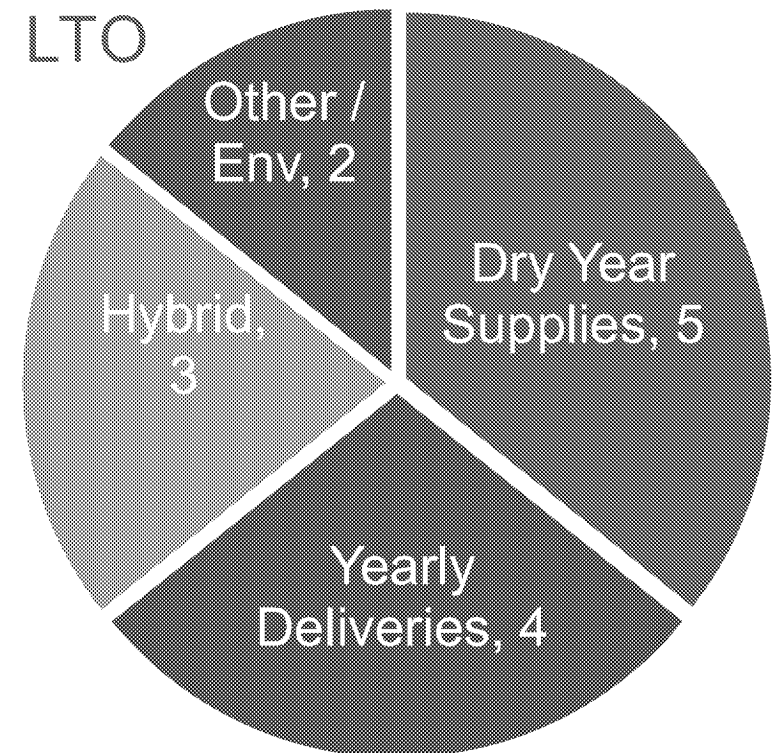
# OPERATIONS AND REPAYMENT STATUS



# Informal Survey Results

(2019 August)

- Responses: 14 of 21  
(108,442 AF of Participation = 56%)
- Diverse set of drivers  
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- Participation increases as  
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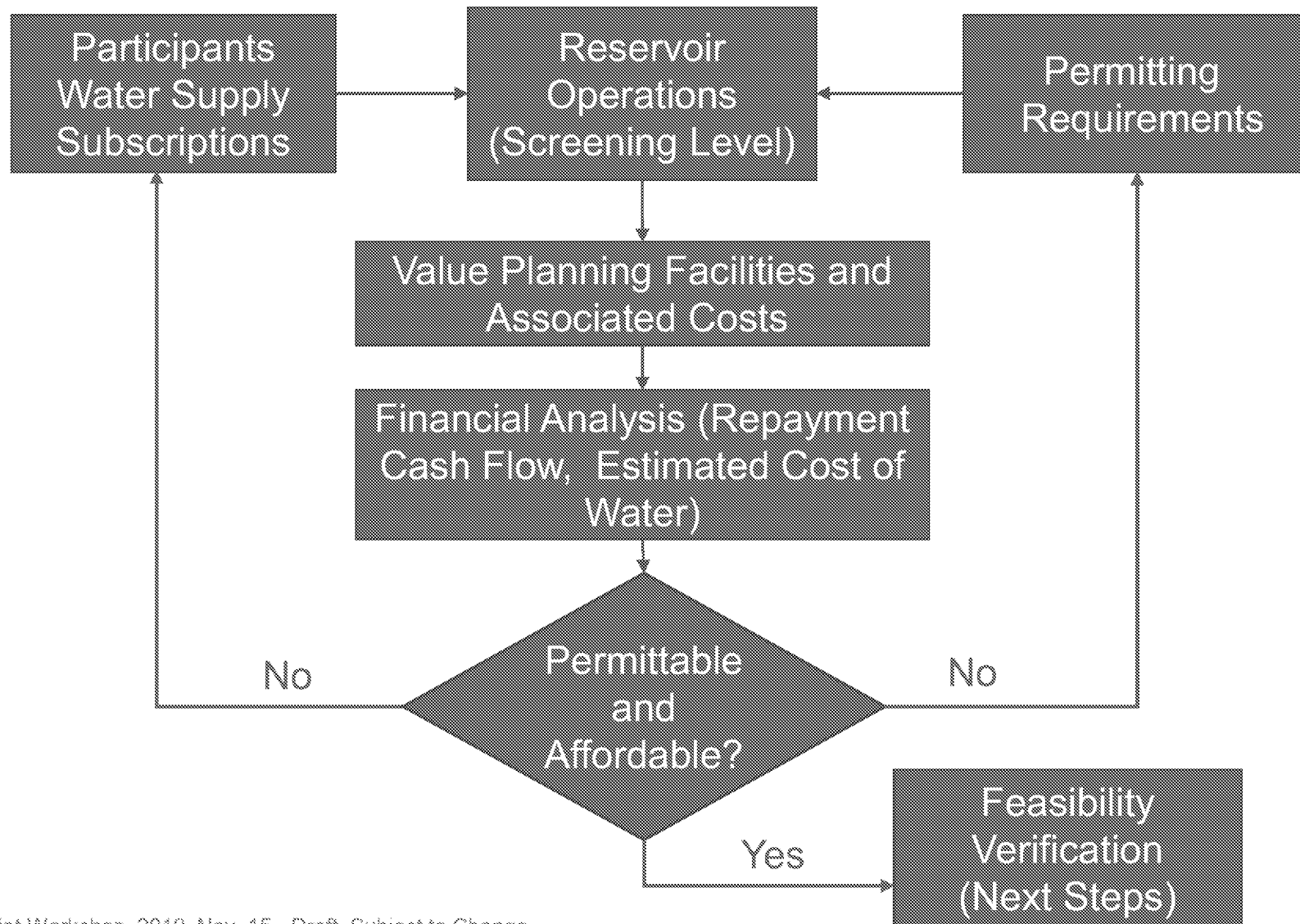


# Purpose of the Operations and Repayment Analysis

- Provide information regarding the potential range of cost of water in terms of annual repayment and operational costs
- Provide information regarding the potential range of annual cash flow requirements



# Operations and Repayment Analysis Process (Background)



# Participation Assumptions

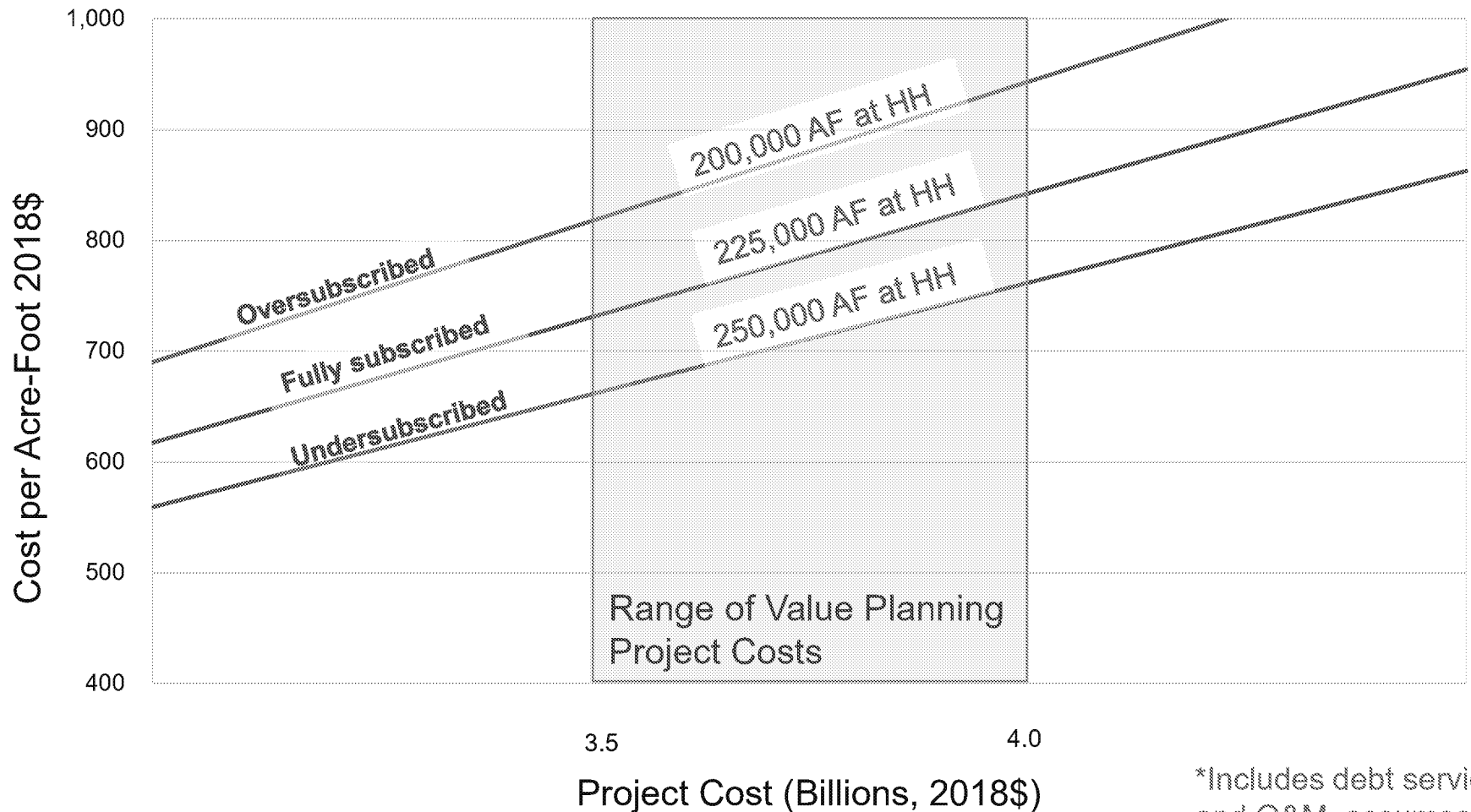
- Participant current subscription level = 192,812 AFY
- State based on Proposition 1 WSIP funding:
  - Total funding is \$816M
  - Deduct \$241.8M flood control and recreation benefits
  - Portion for environmental water supply is ~16,000 to 35,000 AFY
  - Assumes a separate storage account is used to cover O&M for environmental water

# Financial Working Assumptions

Item	Value
<b>Interim Loan</b>	
Interest Rate	3.00%
Unutilized Rate	0.75%
<b>Revenue Bonds</b>	
Interest Rate	5.00%
DSRF% of Maximum Annual Debt Service	50%
DSRF Earnings Rate	4.00%
Bond Fund Interest Earnings Rate	2.00%
First Maturity	12/1/2032
Final Maturity	6/1/2066
<b>USDA Loan</b>	
Interest Rate	3.875%
<b>WIFIA Loan</b>	
Interest Rate	3.500%
Construction Risk Mitigation Percentage	4.20%
<b>Inflation Escalators</b>	
Pre-Construction Escalation/year	1.50%
Construction Escalation/year	2.02%
Labor Inflation Rate/year	2.00%
Non-Labor inflation rate/year	2.00%
Electrical Generation Price Escalation/year	2.00%
Months for Generation post COD	24

# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan

# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	610	710	810	910	
225,000	670	780	890	1,000	
200,000	750	870	1,000	1,120	
<b>*Includes O&amp;M, in 2018 dollars</b>					

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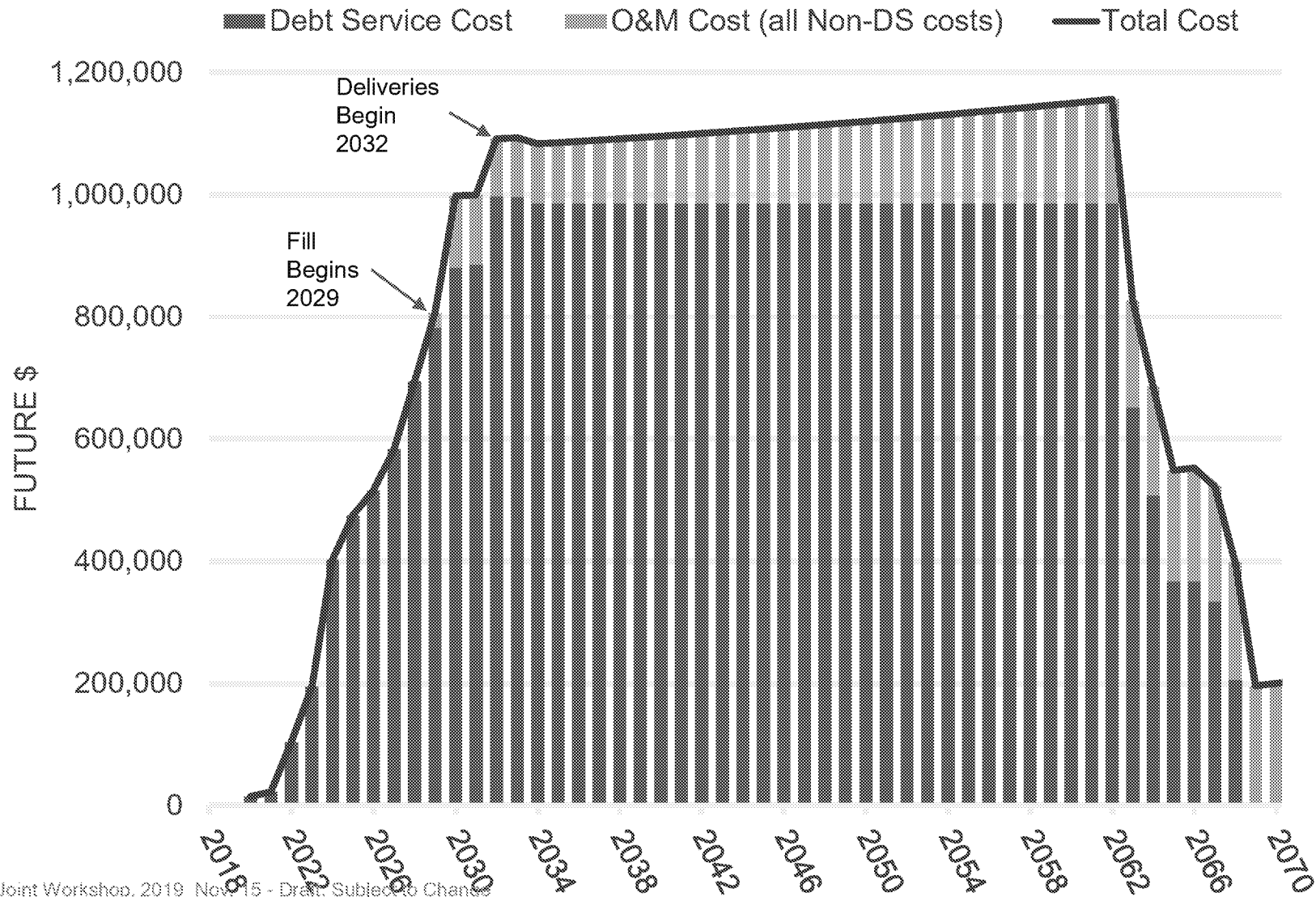
# SIMPLIFIED REPAYMENT TOOL



# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)

# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations



# Simplified Repayment Tool Demonstration

Input in green cells	Reservoir Cost (\$billions, \$2018)				3.5
	AF Water Deliveries at Holthouse				225
	Include WIFIA (yes=1, no=0)?				1
	Participation Level				1,000
Water Deliveries (AF)	Reservoir Cost (\$2018, billions)				
	3.0	3.5	4.0	4.5	
	Total \$/AF Released (w/o WIFIA) (2018\$)				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	



# NEAR TERM IMPLEMENTATION



# Where does the Project go from here? (1 of 3)

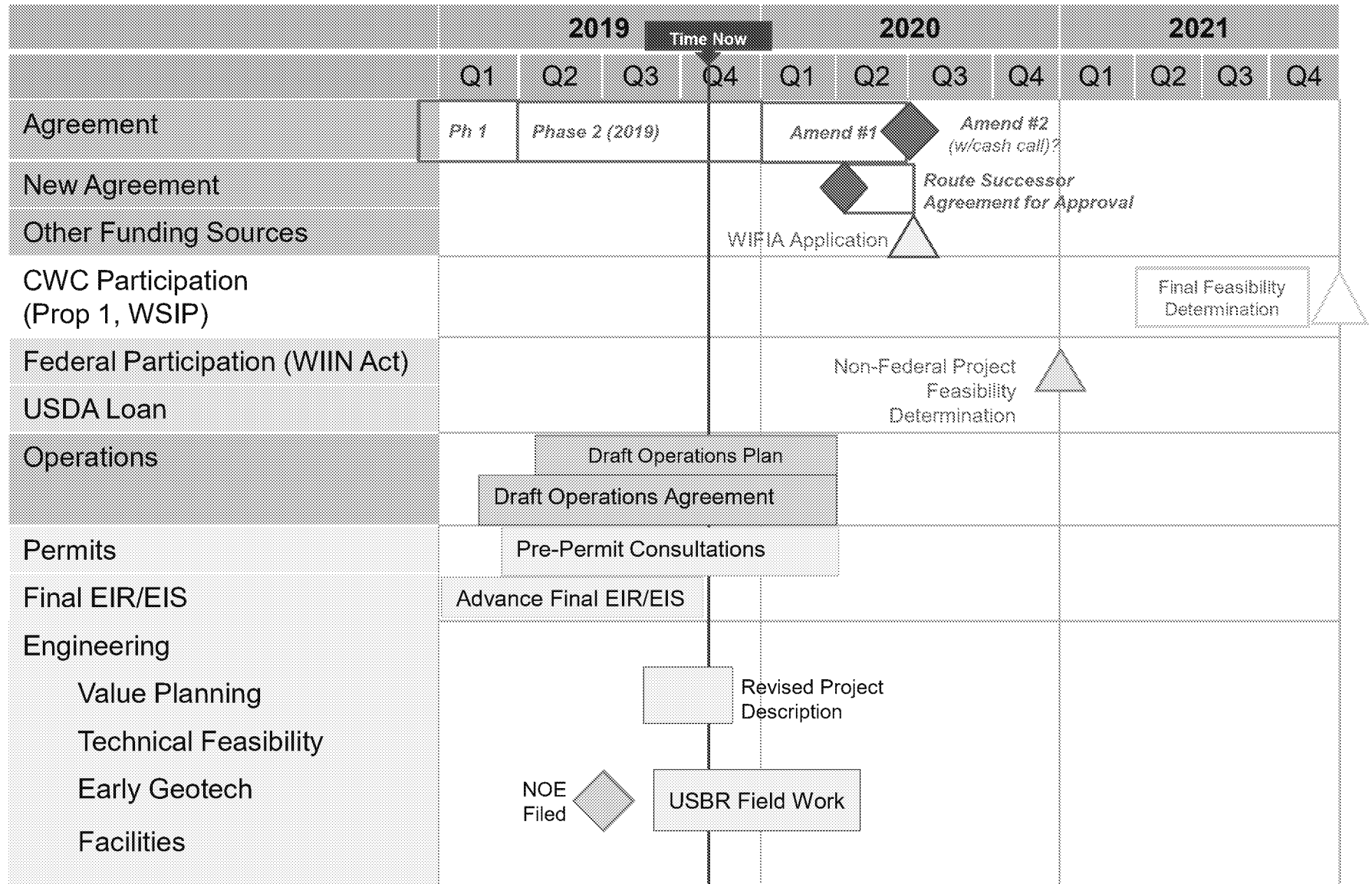
- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?



# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
- Continue discussions with Reclamation regarding Operations Principles and Sites/Shasta exchanges? Work to develop a Financial Assistance Agreement for funding via the WIIN Act?
- Determine if further Value Planning should run in series with or parallel to discussions with Reclamation regarding Sites/Shasta exchanges?
- Identify criteria for, and proceed to narrow, the Alternatives?
- Determine if the Project Description should be revised and what changes are needed to the EIR/EIS?
- Update or conduct a new risk analysis for the preferred Value Planning alternatives?

# Where does the Project go from here? (3 of 3)



# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH





# Purpose of Workshop

- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

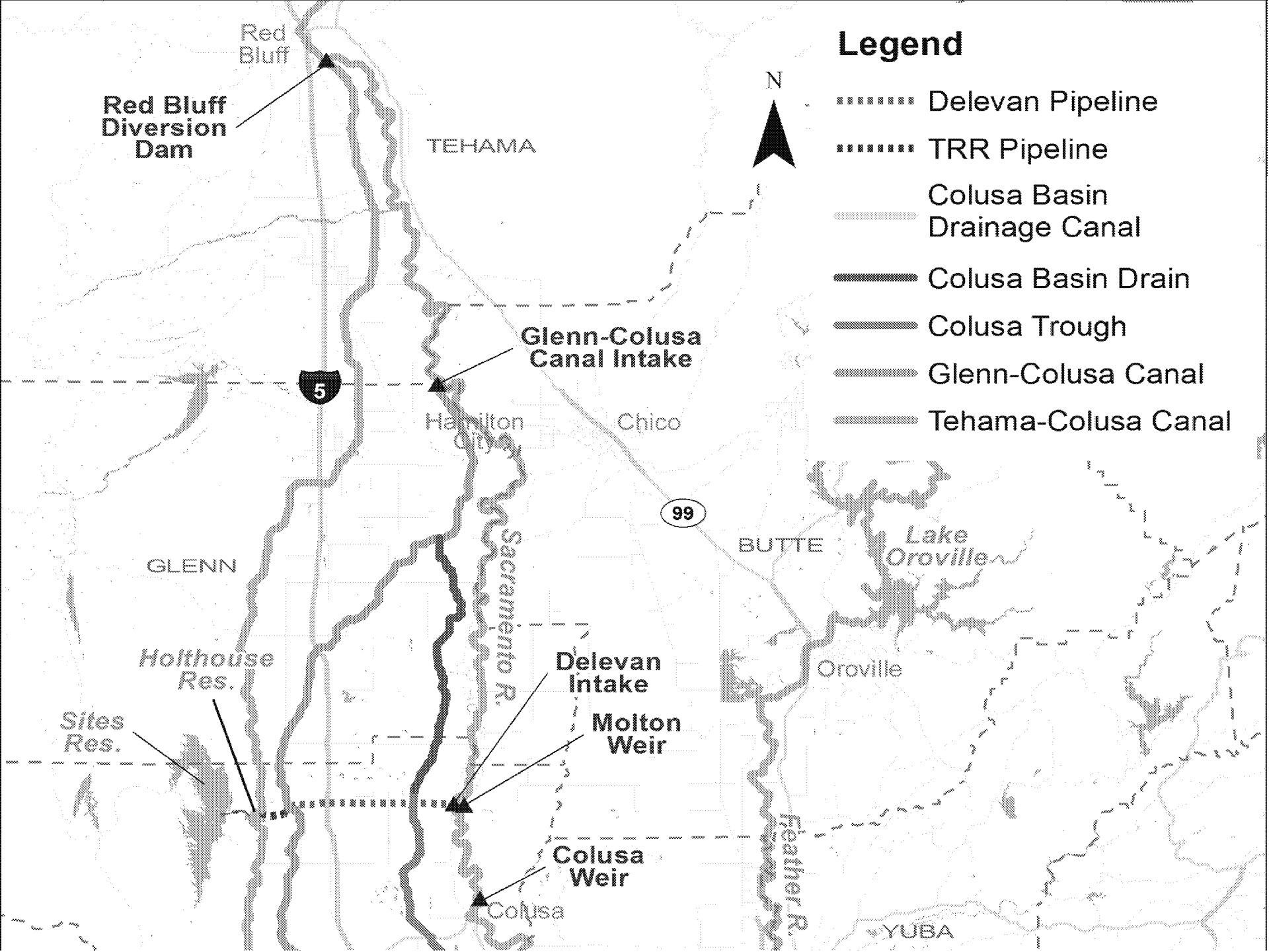
# OPERATIONAL CONSIDERATIONS STATUS

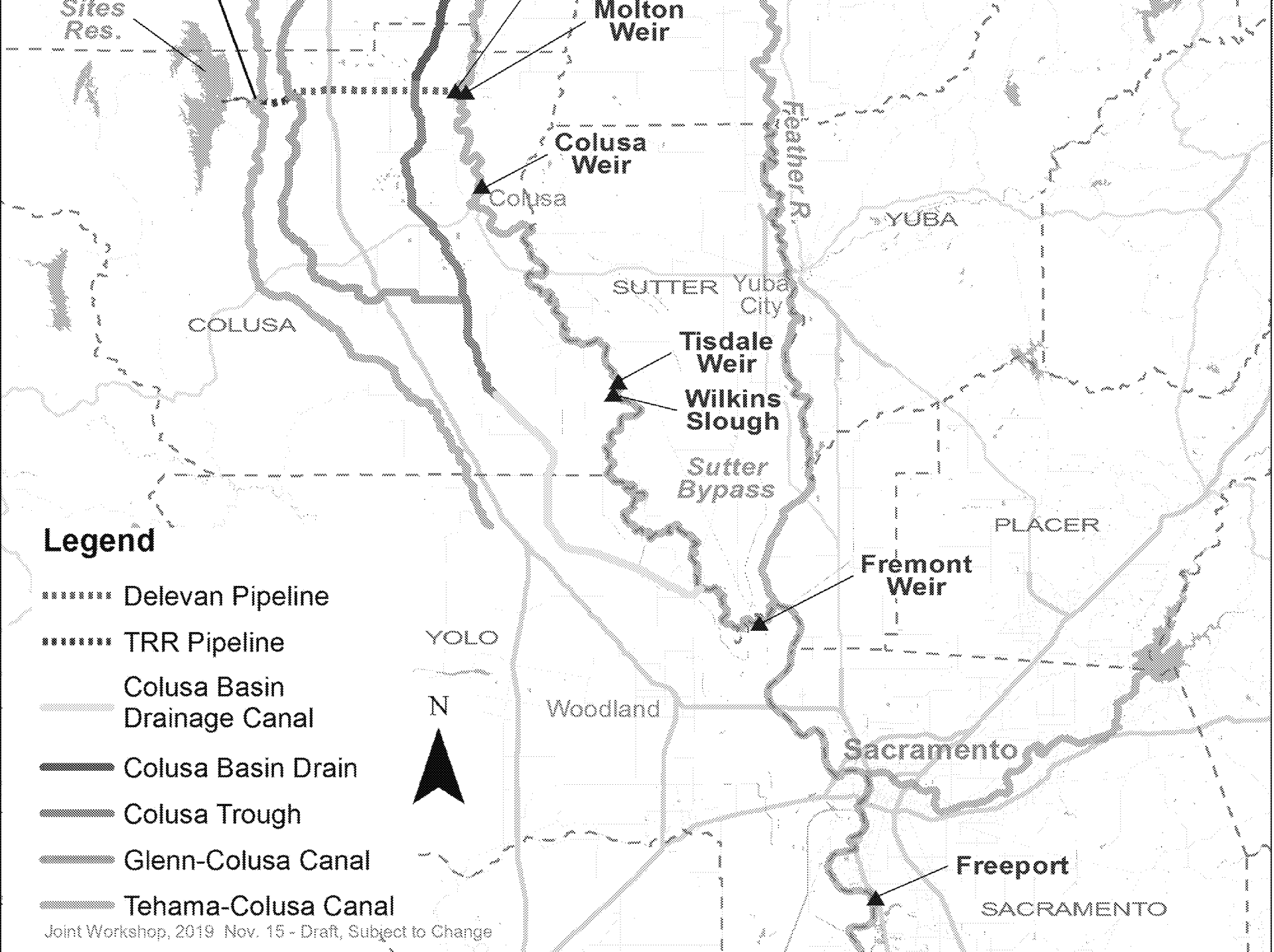




# Key Operational Activities

- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges





**Legend**

- ..... Delevan Pipeline
- ..... TRR Pipeline
- Colusa Basin Drainage Canal
- Colusa Basin Drain
- Colusa Trough
- Glenn-Colusa Canal
- Tehama-Colusa Canal

Joint Workshop, 2019 Nov. 15 - Draft, Subject to Change

# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
- Fremont Weir Notch
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Flows into the Sutter Bypass System
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Freeport Bypass Flow
  - Indicator of Delta survival for juvenile salmonids
- Net Delta Outflow Index (NDOI)
  - Spring NDOI directly correlates to fall longfin smelt population

# Recent Operations Modeling

- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
  - Incorporate ROC on LTO and new requirements from the NMFS Biological Opinion in the baseline

# Summary of Operational Scenarios Currently Being Discussed

Criteria	8,000 Wilkins with WaterFix Criteria	Scaled Diversion with WaterFix Criteria	Potential Revised Project – Sept 2019
Reservoir Size	1.5 MAF	1.5 MAF	1.5 MAF
Delevan Intake	Not included; Outlet only facility	Not included; Outlet only facility	Not included; Outlet only facility
Wilkins Slough Bypass Flow	8,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion
Fremont Weir Notch	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative
Flows into the Sutter Bypass System	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale
Freeport Bypass Flow	Modeled WaterFix Criteria (applied daily)	Modeled WaterFix Criteria (applied daily)	15,000 cfs Jan-March; 13,000 cfs in December; 11,000 cfs all other times (monthly average)
Net Delta Outflow Index (NDOI) Prior to Project Diversions	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	None; Minor changes in X2; Mitigation proposed
Total Deliveries (Average / Dry Year)	~220 TAF ~302 TAF	~234 TAF ~312 TAF	~332 TAF ~477 TAF

Potential Deliveries Range from 200,000 AF to 250,000 AF



# Major Permitting / Operations Challenges

- Challenges:
  - Magnitude of anticipated temperature benefit above Red Bluff need to be reassessed due to revised operational criteria
  - Discussions with Reclamation and analysis of water rights considerations on within year exchanges in Shasta are on-going
  - USFWS has announced it is updating the status review for longfin smelt and may propose it for listing under the Federal ESA but already consulting under CESA
  - Future Delta Conveyance and Voluntary Agreements may effect Sites operations and diversions but working to account for these in revised operational criteria

# Major Permitting / Operations Opportunities

- Opportunities:
  - Delta Conveyance, Voluntary Agreements, Eco Restore, and other projects present opportunities for improved fisheries conditions and for collaboration on science, monitoring and mitigation
  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

# Key Takeaways

- Permittable operations, reflecting current permitting discussions, may result in a range from 200,000 AF to 250,000 AF average annual deliveries at Holthouse
- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
- Additional detailed modeling on revised operational scenarios is needed to reduce uncertainties and refine analyses
- Additional discussions is needed with the regulatory agencies to develop and refine operational parameters to ensure they are implementable and meet the intended biological outcome

# VALUE PLANNING STATUS



# Overview

- Ad hoc representatives from the Reservoir Committee and Authority Board met on October 2 and 14, 2019 to discuss approaches that could potentially lower the cost of the project. AECOM and others conducted initial analyses on these approaches.
- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
- Appraisal level costs were developed in October 2015 dollars and escalated to 2018 dollars. These costs ranged from \$3.4 to \$4.0 billion (excluding risk management and financing costs) versus the \$5.2 billion for Alternative D.
- Authority agents developed comments on the appraisal evaluation but did not identify any “fatal flaws”.

# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

MAF = million acre feet

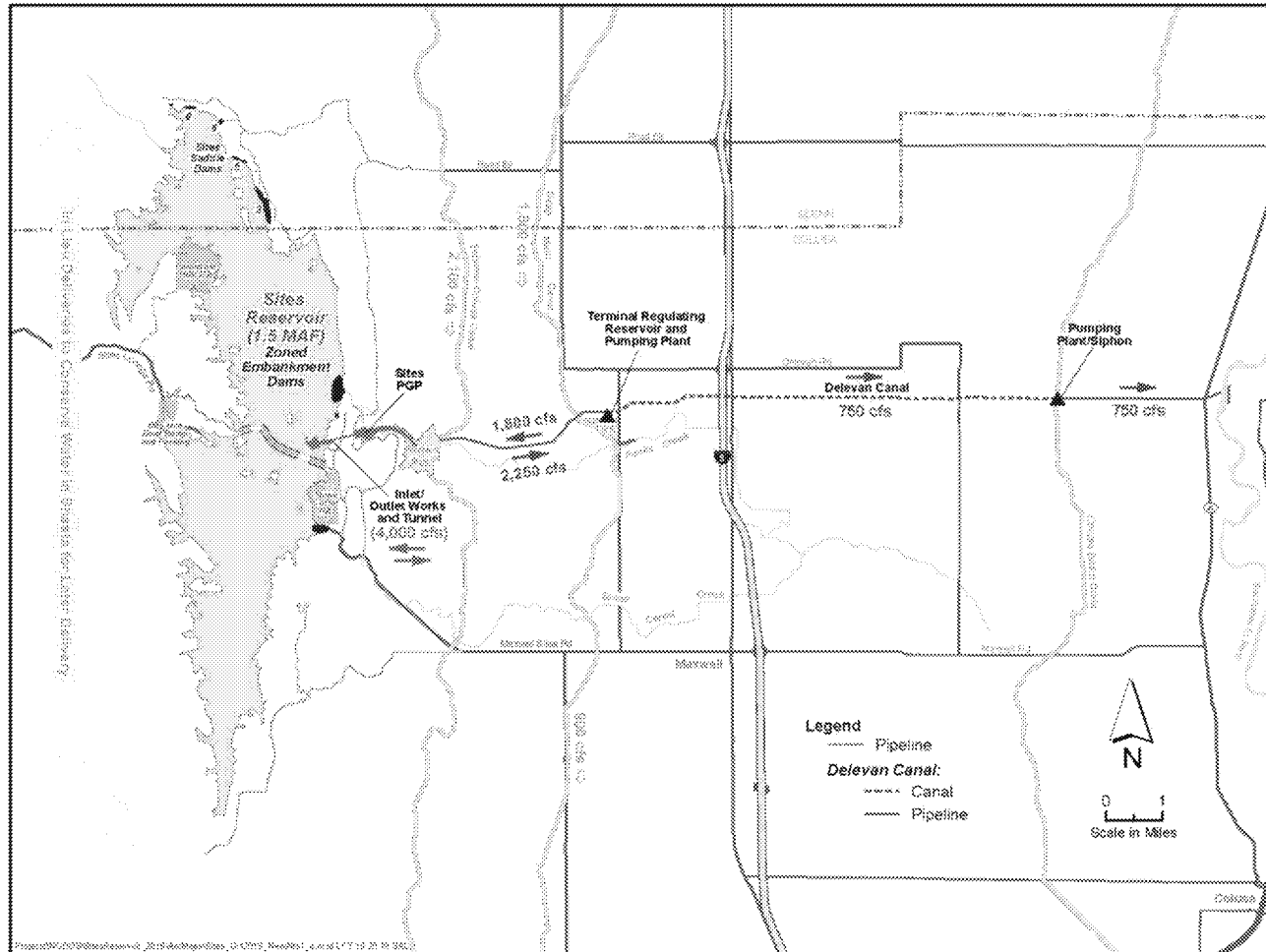
PGP = Pumping/Generating Plant

TCRR = Tehama-Colusa Regulating Reservoir

15 TRR = Terminal Regulating Reservoir



**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**



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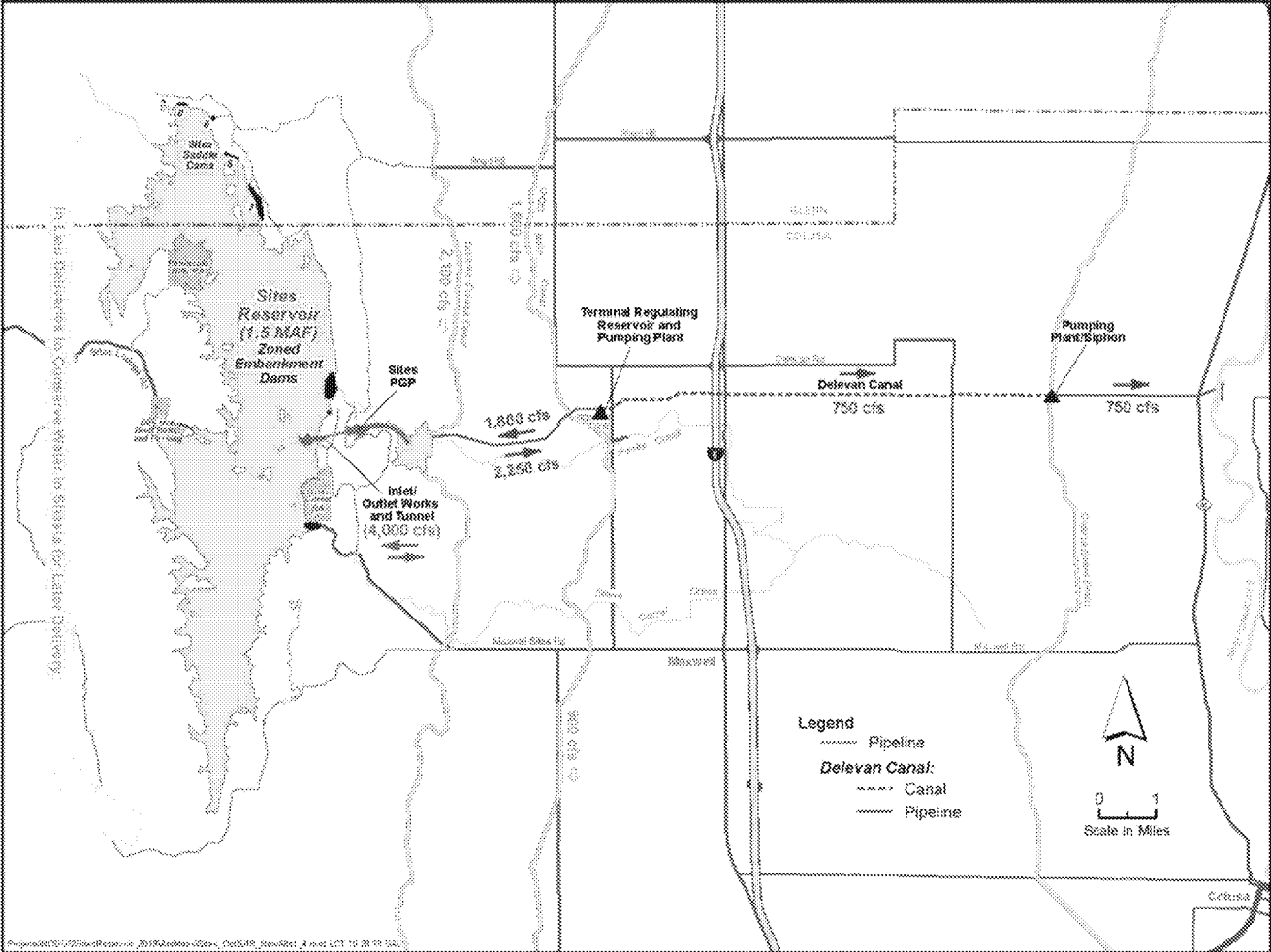


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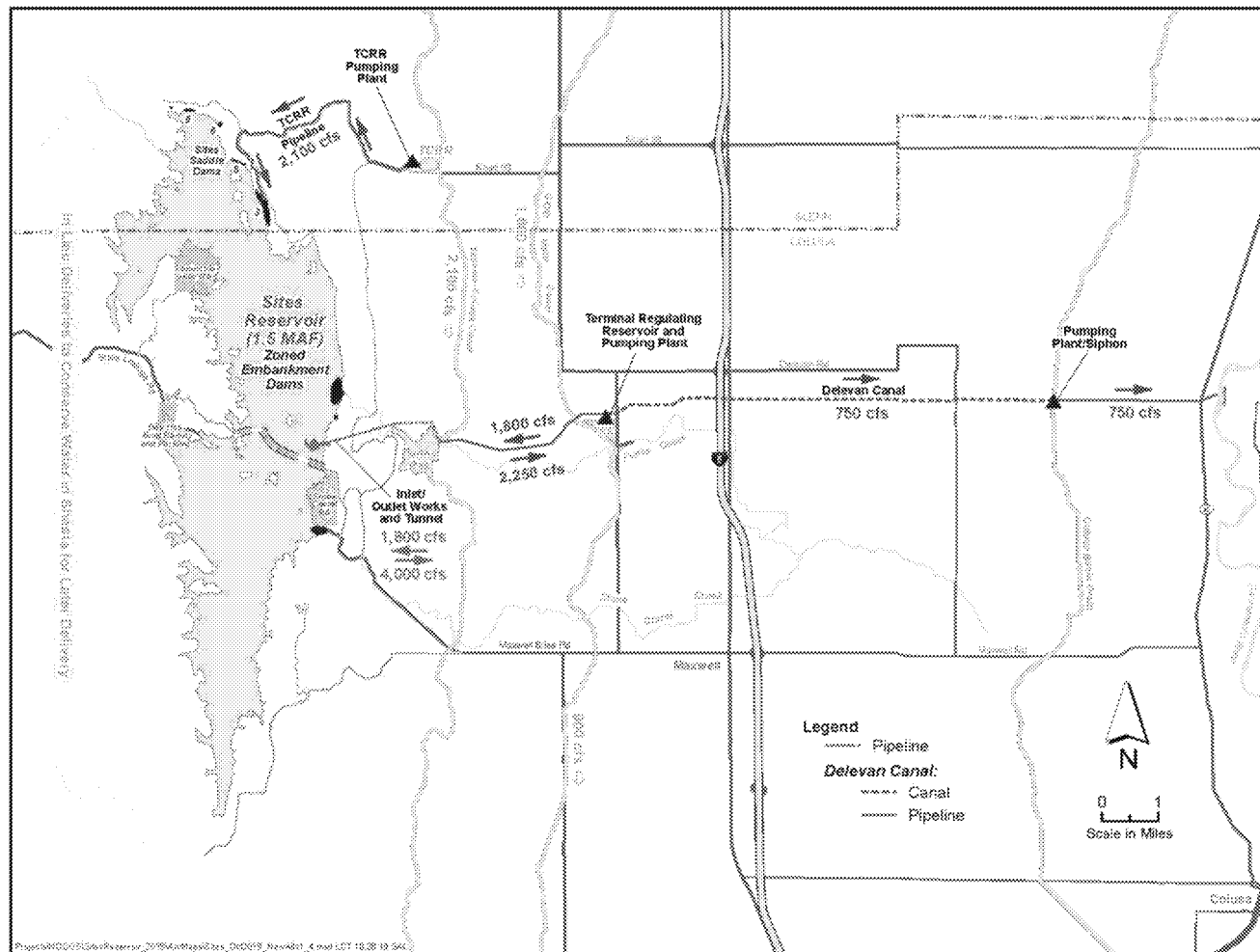


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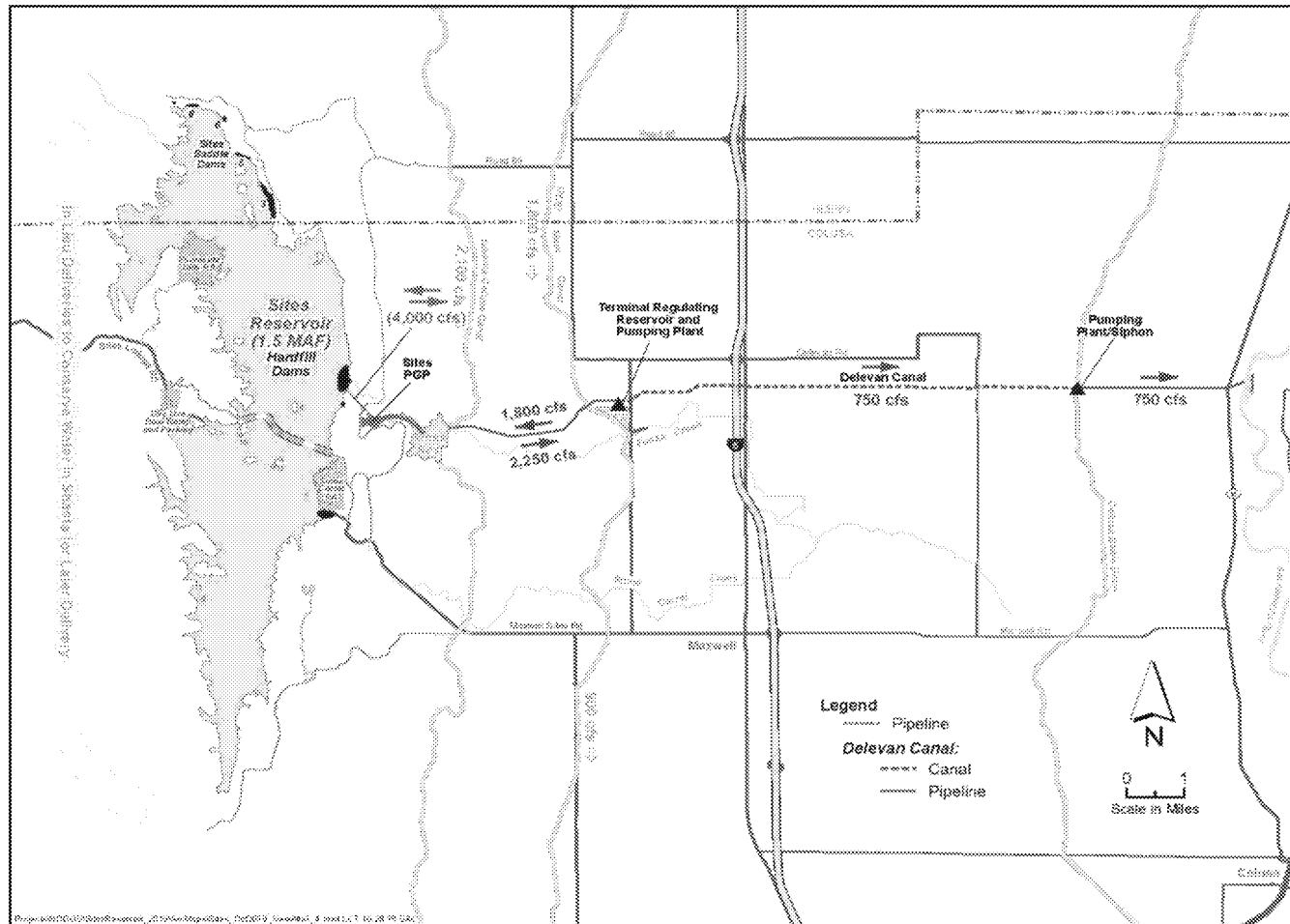
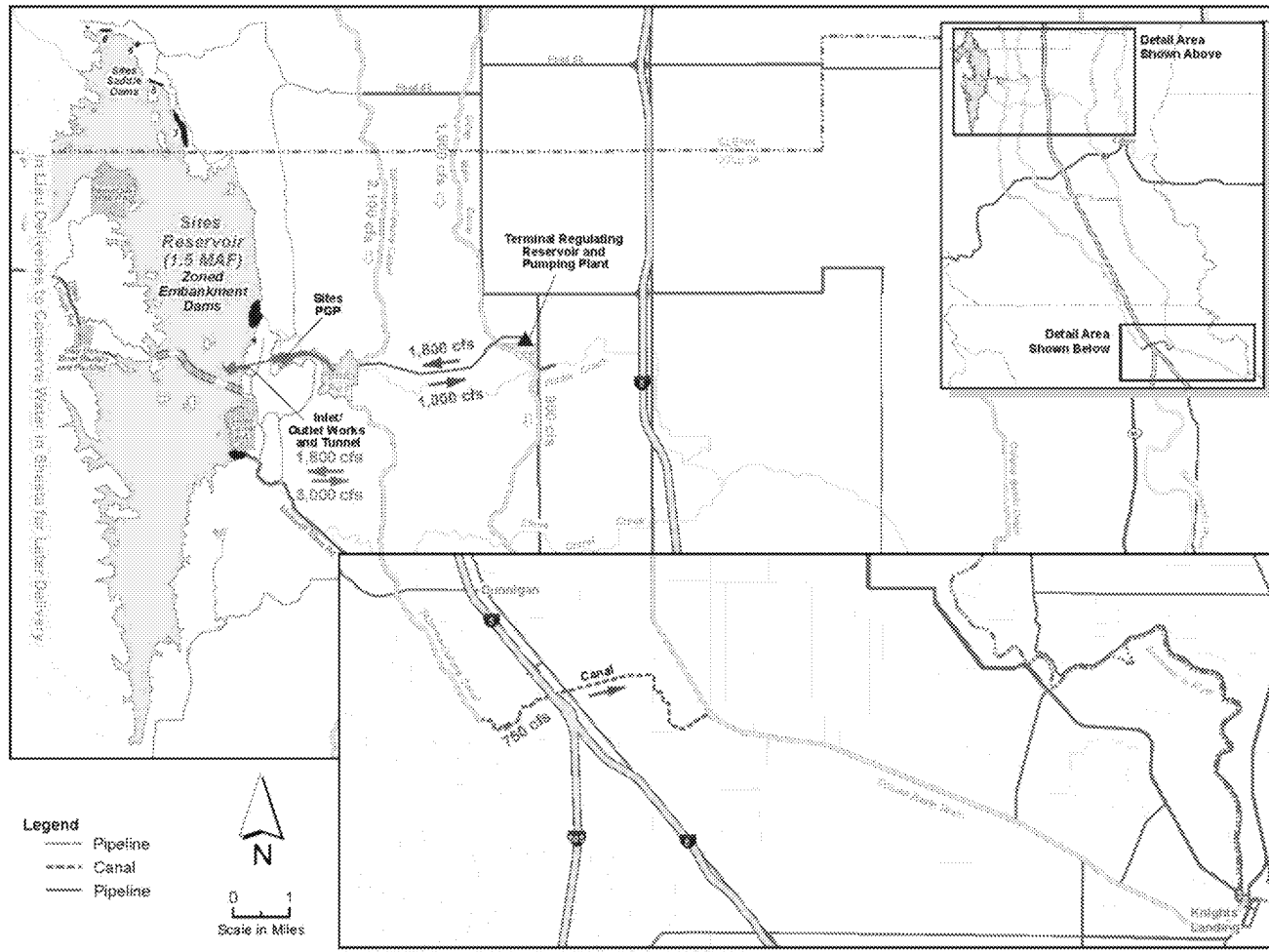


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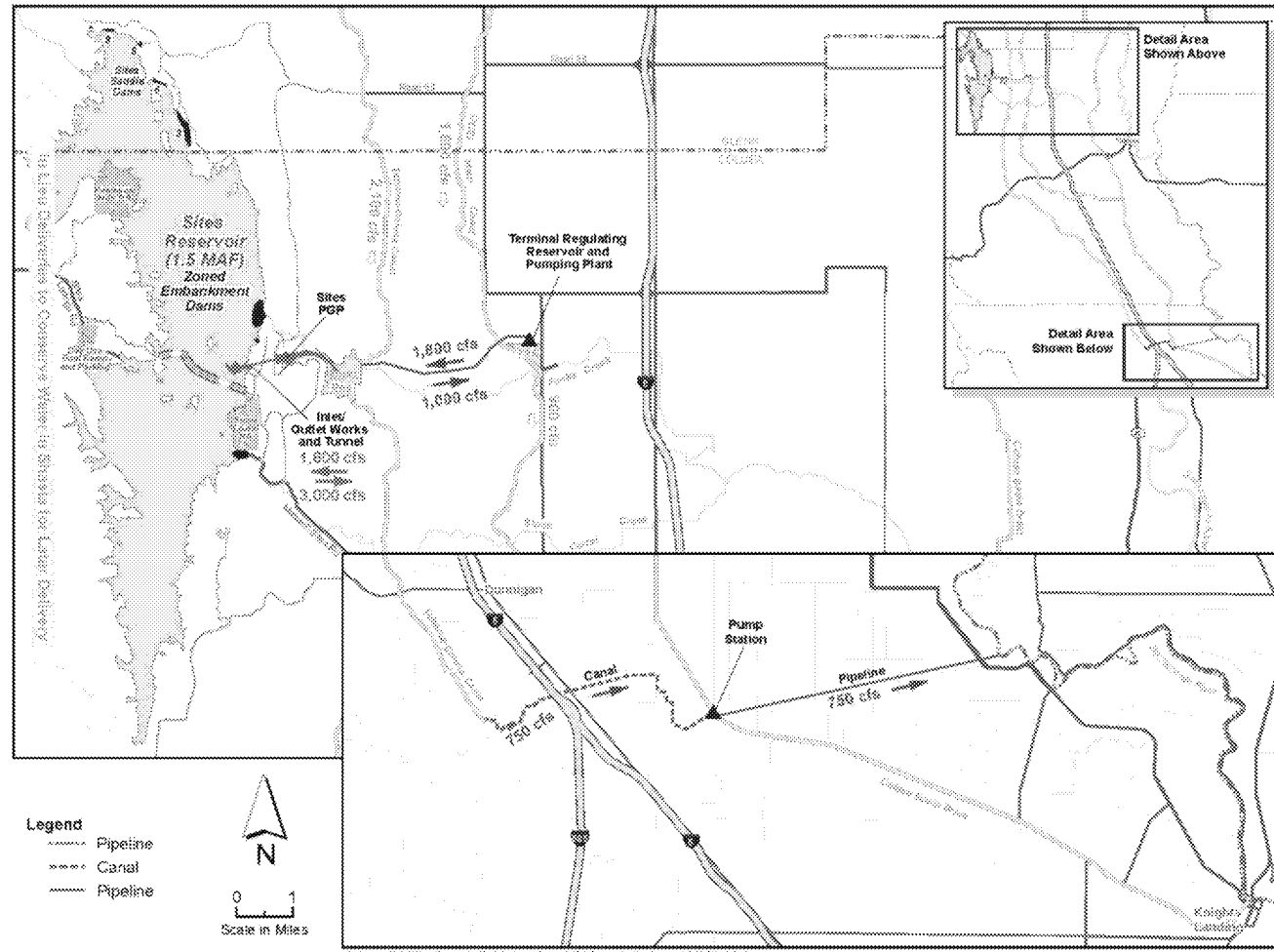


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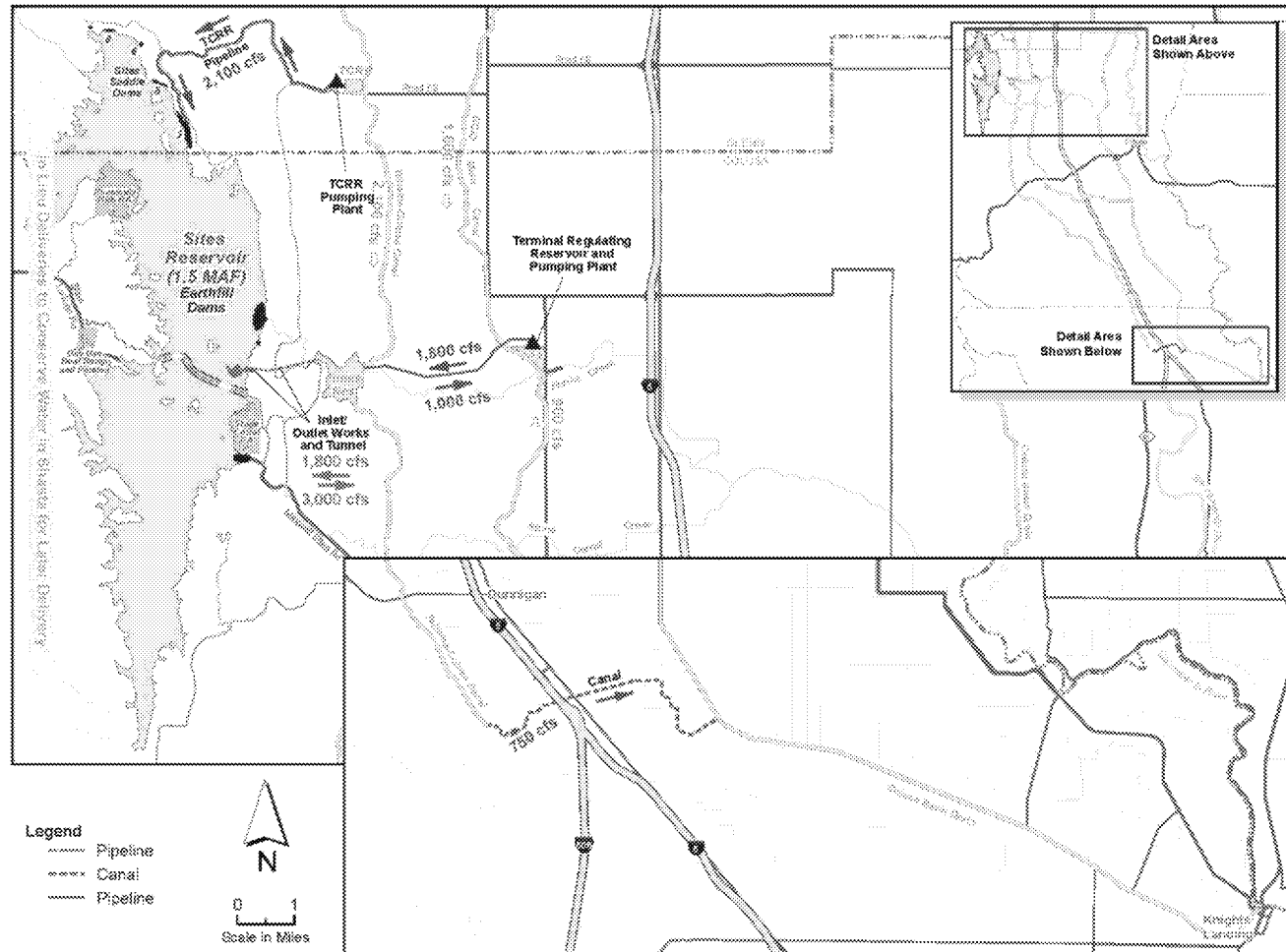
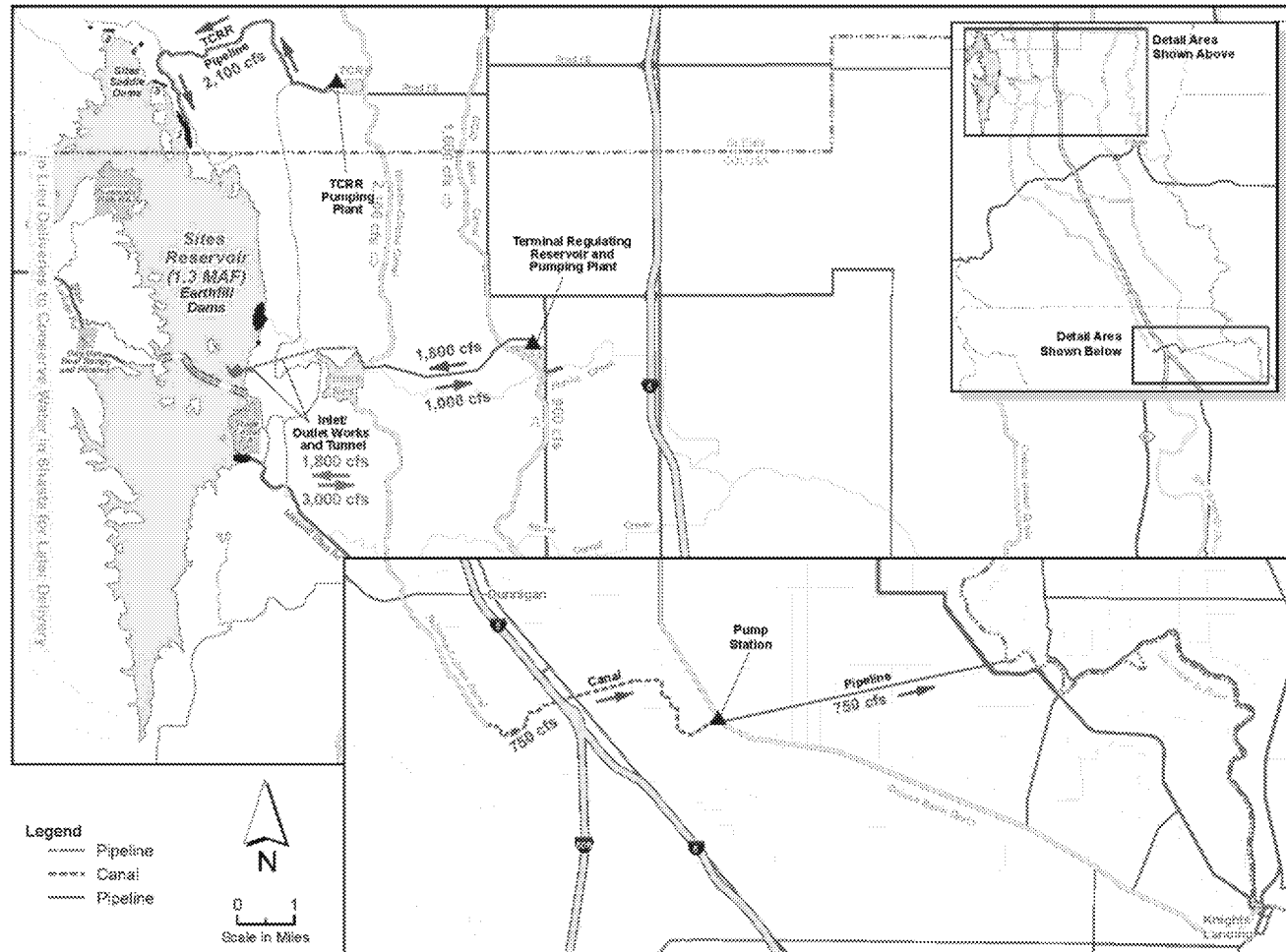


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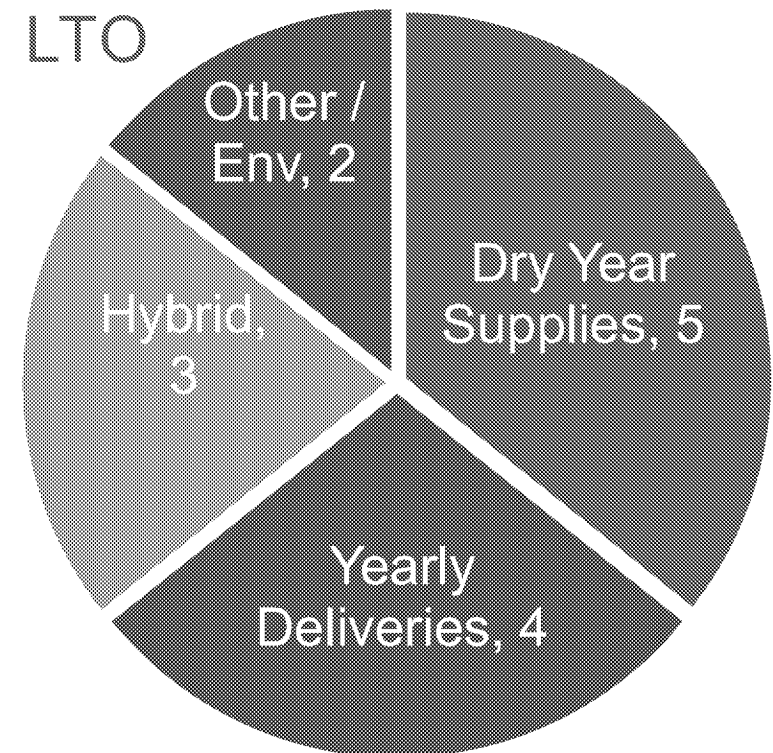
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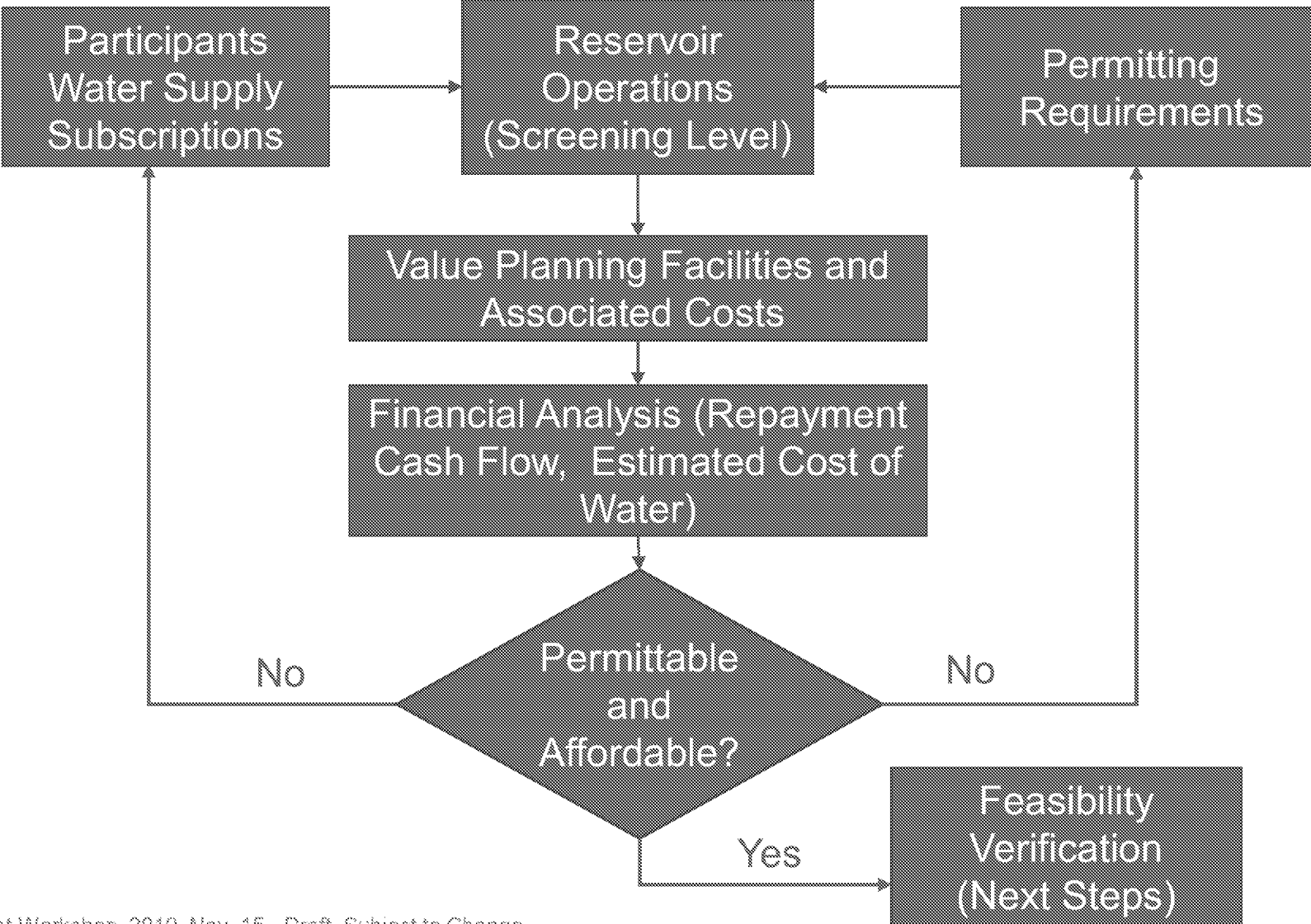
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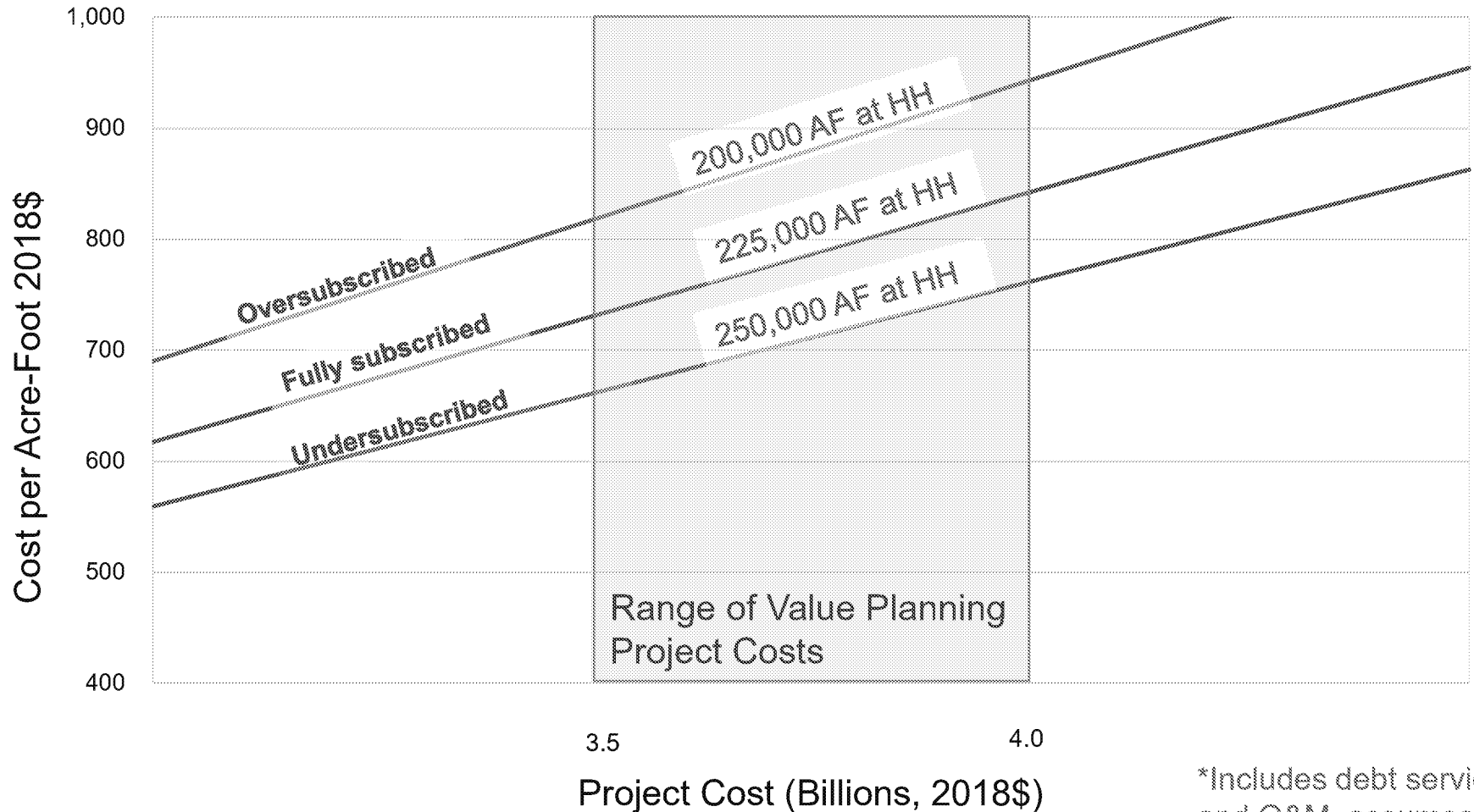
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Months for Generation post COD	24



# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan

# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	610	710	810	910	
225,000	670	780	890	1,000	
200,000	750	870	1,000	1,120	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# SIMPLIFIED REPAYMENT TOOL

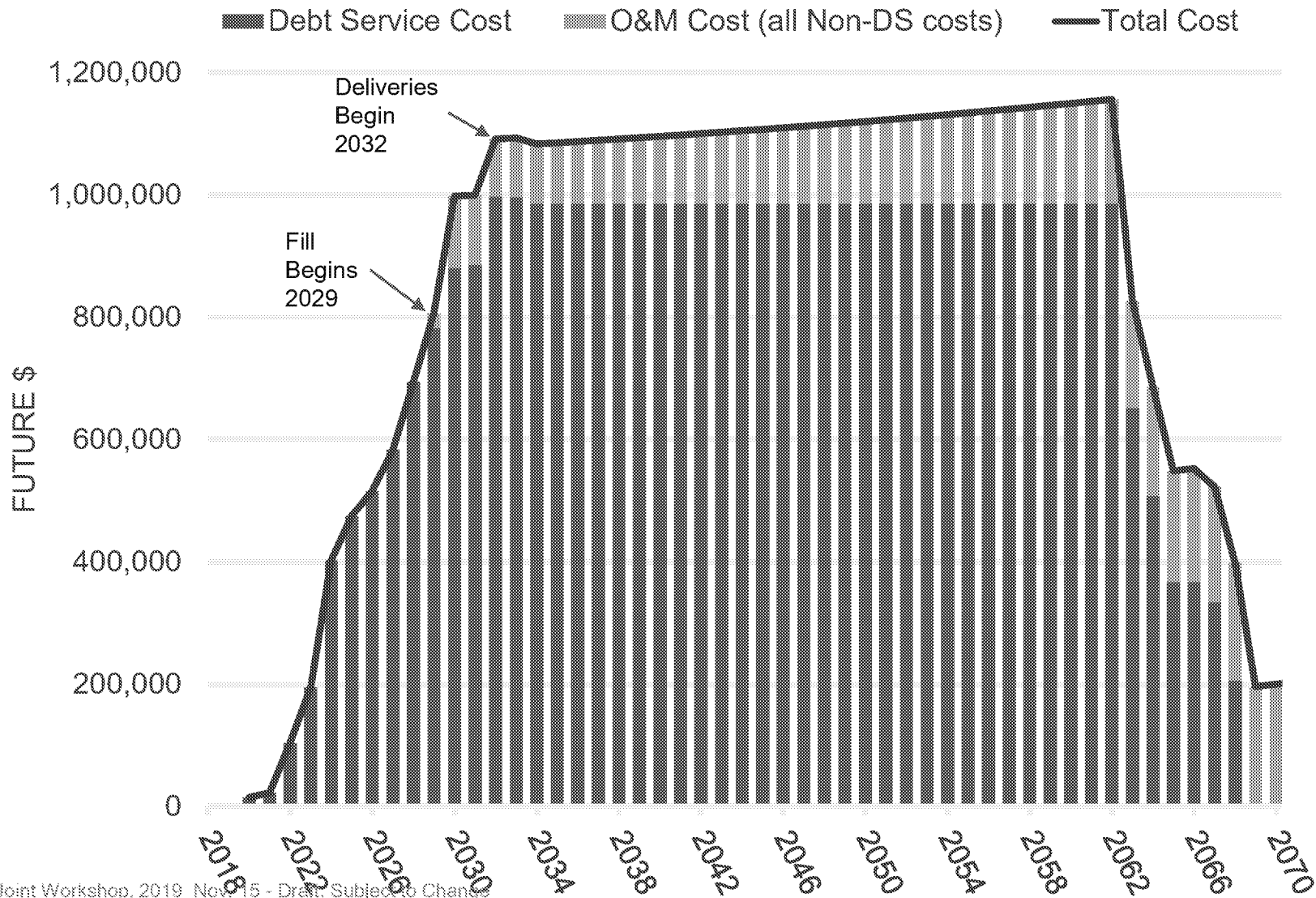


# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)



# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations





# Simplified Repayment Tool Demonstration

<b>Input in green cells</b>	<b>Reservoir Cost (\$billions, \$2018)</b>				3.5
	<b>AF Water Deliveries at Holthouse</b>				225
	<b>Include WIFIA (yes=1, no=0)?</b>				1
	<b>Participation Level</b>				1,000
<b>Water Deliveries (AF)</b>	<b>Reservoir Cost (\$2018, billions)</b>				
	3.0	3.5	4.0	4.5	
	<b>Total \$/AF Released (w/o WIFIA) (2018\$)</b>				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	<b>Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)</b>				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	

# NEAR TERM IMPLEMENTATION



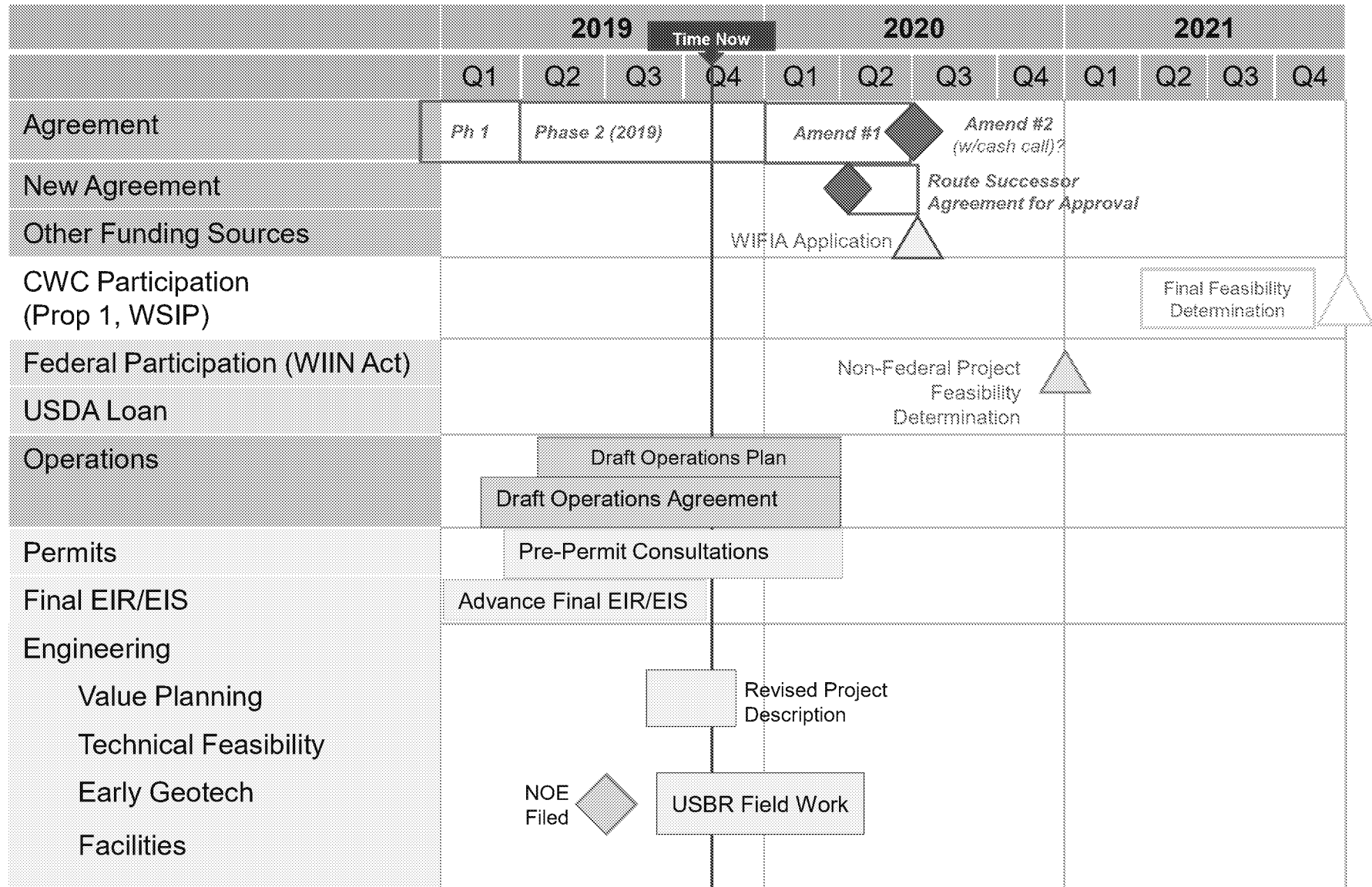
# Where does the Project go from here? (1 of 3)

- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?

# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
- Continue discussions with Reclamation regarding Operations Principles and Sites/Shasta exchanges? Work to develop a Financial Assistance Agreement for funding via the WIIN Act?
- Determine if further Value Planning should run in series with or parallel to discussions with Reclamation regarding Sites/Shasta exchanges?
- Identify criteria for, and proceed to narrow, the Alternatives?
- Determine if the Project Description should be revised and what changes are needed to the EIR/EIS?
- Update or conduct a new risk analysis for the preferred Value Planning alternatives?

# Where does the Project go from here? (3 of 3)





# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH





Meeting: **Phase 2 Reservoir Project Agreement** **2019 November 21**

Subject: **Reservoir Committee Meeting** **1:00 PM – 4:00 PM**

Location: Tsakopoulos Library Galleria Call in: 1-800-201-7439  
828 I Street, Sacramento, CA 95814 Code: 644237

Chair: Doug Headrick (San Bernardino Valley Municipal Water District)

Vice Chair: Thad Bettner (Glenn-Colusa Irrigation District)

Treasurer: Jamie Traynham (Davis Water District)

## **AGENDA**

**9:00 AM - ROLL CALL & CALL TO ORDER:** 10 min

- Introductions.
- Pledge of Allegiance.
- Approval of November 21, 2019 Agenda.
- Consider approving the October 18, 2019 Phase 2 Reservoir Committee Meeting Minutes.
- Announcement of Closed Session.
- Period for Public Comment. Max: 10 min

**SPECIAL PRESENTATION:** 30 min Headrick

- San Bernardino Valley Municipal Water District perspective of statewide water management.

### **1. Member's Reports:**

1.1 Chairpersons' Report: 5 min Headrick, Bettner

This time is set aside to allow the Chair/Co-Chair an opportunity to disclose/discuss items related to the Sites Project.

1.2 Reservoir Committee Participant Reports: 5 min Representatives

This time is set aside to allow Representatives or their Alternates an opportunity to disclose/discuss items related to the Sites Project.

**2. Consent Agenda:** 5 min Watson

2.1 None.

**3. Manager's Report:** 20 min Watson

3.1 Discussion and possible direction to staff regarding the Sites Project's monthly status report. **(Attachment 3-1A)**

Participation by phone is not counted in quorum or voting.

Status: Issued for Use  
Purpose: Informational  
Caveat 1: Subject to change  
Caveat 2:

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- 3.2 Discussion and possible direction to staff regarding Proposition 1, WSIP activities and WIIN Act Funding. **(Attachments 3-2 A, B & C)**
4. **2019 Ad Hoc Budget & Finance Work Group:** 20 min Traynham
- 4.1 Consider accepting the Sites Project Authority Treasurer's Report. **(Attachment 4-1 A)**
- 4.2 Consider approval of the Reservoir Committee's portion of the monthly Payment of Claims. **(Attachments 4-2 A & B)**
- 4.3 Consider approval of a recommendation to the Sites Project Authority to approve a modification to the AECOM contract period of performance by extending the contract from December 31, 2019 through June 30, 2020 with no change in cost. **(Attachment 4-3 A)**
- 4.4 Consider approval of a recommendation the Sites Project Authority consider approving an amendment to the Montague DeRose and Associates (MDA) contract to expand the scope of work and increase the contract amount from \$600,000 to \$770,000. **(Attachment 4-4 A)**
- 4.5 Discussion and possible direction of the revised Phase 2 (2019) Work Plan supporting a revised completion date from December 31, 2019 to June 30, 2020. **(Attachments 4-5 A)**
5. **2019 Ad Hoc Agreements & Contracts Work Group:** 20 min Davis
- 5.1 Consider approval of a recommendation to the Sites Project Authority to approve the "First Amendment to [the] 2019 Reservoir Project Agreement by and Among [the] Sites project Authority and the Project Agreement Members Listed Herein, dated as of January 1, 2020" (2019 Agreement). **(Attachment 5-1 A)**
6. **2019 Ad Hoc Environmental & Permitting Work Group:** 20 min Bettner
- 6.1 Discussion and possible direction to staff regarding consultation discussion with the California Department of Fish and Wildlife.
7. **2019 Ad Hoc Reservoir Operations Work Group:** 10 min Ruiz/Kunde
- 7.1 Discussion and possible direction to staff regarding the ongoing activities of the Reservoir Operations Workgroup.
8. **Joint 2019 Ad Hoc Water & Site Facilities Work Group:** 10min Vanderwaal/Azevedo
- 8.1 Review of the November 15, 2019 Workshop regarding the value planning exercise. **(Attachment 8-1 A)**

RECESS:

10. **Closed Session:** Kuney

10.1 Conference with legal counsel regarding significant exposure to litigation or adjudicatory proceedings (Govt. Code 54956.9(d)(2) and (4) (2 item)).

11. **Report from Closed Session:** 5 min Kuney

12. **Recap:** 5 min Watson

12.1 Agenda topics for next meeting?

12.2 Upcoming Reservoir Committee meetings:

Joint Authority/Reservoir Committee Meeting:

**Thursday, November 21, 2019 4:30 PM**

Downey Brand Office  
621 Capitol Mall Ste 18, Sacramento, CA 95814

Reservoir Committee Workshop:

**Tuesday, December 3, 2019 1:00 PM**

ACWA Conference  
1 Market Pl, San Diego, CA 92101

Reservoir Committee Meeting:

**Thursday, December 19, 2019 1:00 PM**

Tsakopoulos Library Galleria  
828 I Street, Sacramento, CA 95814

**ADJOURN:**

PERIOD OF PUBLIC COMMENT: Any person may speak about any subject of concern, provided it is within the jurisdiction of the Reservoir Committee and is not already on today's agenda. The total amount of time allotted for receiving such public communication shall be limited to a total of 10 minutes per issue and each individual or group will be limited to no more than 3 minutes each within the 10 minutes allocated per issue. **Note:** No action shall be taken on comments made under this comment period.

ADA COMPLIANCE: Upon request, agendas will be made available in alternative formats to accommodate persons with disabilities. In addition, any person with a disability who requires a modification or accommodation to participate or attend this meeting may request necessary accommodation. Please make your request to the Board Clerk, specifying your disability, the format in which you would like to receive this Agenda and any other accommodation required no later than 24 hours prior to the start of the meeting.



Meeting: **Phase 2 Reservoir Project Agreement** 2019 October 18

Subject: **Reservoir Committee Meeting** 9:00 AM – 12 PM

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Locations: Maxwell Project Office Call in: 1-800-201-7439  
122 Old Highway 99W Code: 644237  
Maxwell, CA 95955

Chair: Doug Headrick (San Bernardino Valley Municipal Water District)  
Vice Chair: Thad Bettner (Glenn-Colusa Irrigation District)  
Treasurer Jamie Traynham (Davis Water District)

## MINUTES

### 9:00 AM - CALL TO ORDER:

Chairman Headrick called the meeting to order at 9:00 a.m., followed by the Pledge of Allegiance.

### ROLL CALL:

Roll was called (See Attachment A), which resulted in 17 eligible representatives. This equated to 76.3% of the current participation percentage being in attendance, which is greater than the 50% needed to have a quorum of the Reservoir Committee. By 9:35 a.m. an additional member was seated bringing the total participation percentage to 91.6%.

### INTRODUCTIONS:

The Sites Reservoir Committee members, staff and members of the public introduced themselves.

### ATTENDANCE:

See Attachment B.

### AGENDA APPROVAL:

**Action:** It was moved by Vanderwaal, seconded by Ruiz to approve the October 18, 2019 Sites Reservoir Committee Agenda, as presented. The motion carried unanimously.

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Status:	Issued for Use	Version:	A
Purpose:	Informational	Date:	2019 October 18
caveat 1:	Subject to change	Ref/File #:	
caveat 2:		Page:	1 of 9

**MINUTES APPROVAL:**

**Action:** It was moved by Bettner, seconded by Vanderwaal to approve the September 20, 2019 Phase 2 Reservoir Committee Meeting Minutes, as presented. The motion carried unanimously.

**ANNOUNCEMENT OF CLOSED SESSION:**

General Manager Watson announced the Reservoir Committee Members would consider a Closed Session matter regarding significant exposure to litigation or adjudicatory proceedings (Govt. Code 54956.9(d)(2) and (4) (2 items)) after the Regular Agenda.

**PERIOD OF PUBLIC COMMENT:**

Chairman Headrick called for public comment. Hearing none, he closed the period of public comment.

**SPECIAL PRESENTATION:**

- Santa Clara Valley Water perspective of statewide water management.

Ms. Kao spoke to Santa Clara Valley Water’s interest in the Sites Project. She also spoke to the history of the formation of the Water District, water demands of the people they serve, fluctuation of groundwater levels and the need for a reliable water source. She stated Santa Clara County Valley Water is not looking for more water than they currently have, but to maintain the existing level of water supply and to secure water to offset projected future increases.

Brief discussion followed regarding how Sites would fit into their needs, with no action taken.

General Manager Watson asked for volunteers for the next presentation in November.

Chairman Headrick (San Bernardino County) volunteered for November’s presentation of their perspective of statewide water management.

Mr. Dan Ruiz (Westside Water District) volunteered for December’s presentation.

**1. Member’s Reports:**

1.1 Chairpersons’ Report: Headrick, Bettner

This time is set aside to allow the Chair/Co-Chair an opportunity to disclose/discuss items related to the Sites Project.



Chairman Headrick announced board officer elections will be held in December 2019, along with reconsideration of the composition of the Work Groups.

1.2 Reservoir Committee Participant Reports: Representatives

This time is set aside to allow Representatives or their Alternates an opportunity to disclose/discuss items related to the Sites Project.

Mr. Kunde requested a meeting with the State Contractor Group after the Reservoir Committee meeting.

1.3 Special Study:

Discussion of value planning exercise.

Mr. Kunde provided an update of the value planning exercise. He stated the Reservoir Committee and the Authority Board Value Planning team met on October 1 and October 14, 2019 and discussed the following:

- Alternatives that might be less expensive than the existing Alternative D.
- New facilities and modified facilities identified.
- Preliminary construction cost estimates.
- Identified approximately 60 facility options which were considered in this analysis and combined individual facility options into nine alternatives.

Discussion followed regarding the various Alternatives, engineering process, affordability analysis, whether this is a viable project and the next steps in this process. Following discussion, Mr. Kunde requested specific direction as to how to proceed.

Chairman Headrick stated the Value Planning Team is headed in the right direction and to continue their current path. Mr. Kunde stated he hoped to have a recommendation at the next Reservoir Committee meeting.

2. Consent Agenda: Watson

None.

3. Manager's Report: Watson

3.1 Discussion and possible direction to staff regarding the Sites Project's monthly status report. (**Attachment 3-1A**)

General Manager Watson provided an overview of project activities performed in the months of September and October 2019 as follows:

- Announced Steve Cole is the new alternate for the Santa Clarita Valley Water Agency.

- Continued to work on pre-application consultations with the CDFW.
- Continued to assist Reclamation in finalizing preparations to collect geotechnical data at the Delevan pipeline, terminal regulating reservoir at Fletcher as part of their feasibility analysis.
- October 2, 2019, Reclamation started collecting data at the pipeline.
- In September 2019, held the second of two workshops that led to the value planning process. Staff continues to work on the affordability analysis, cost estimates, financials and the operations yield for all alternatives through the various Work Groups.
- Submitted first invoice to the Water Commission and it was approved for payment on October 14, 2019. Working on a 2<sup>nd</sup> invoice which will be submitted to the Water Commission with payment expected by year's end or early January 2020. Brief discussion followed, with no action taken.
- Staff continues to work on the concept level of a work plan.
- Staff has developed a concept for extending the existing Project funding through June 30, 2020.
- October 3, 2019, presented the Project to the American Council of Engineering Companies at their annual conference.
- October 8, 2019, presented the Project to the California Congressional Legislative Staff who had been invited to tour northern California's water infrastructure.
- Hosted several tours of the Project to various Metropolitan Water District groups.
- Tour of Sites Project with Robert Green from the LA Times Editorial Board.
- Chairman Headrick stated Metropolitan hosted a tour for their Board Members and guests. He stated Kevin Spesert was the presenter and he did a great job. He expressed his appreciation to the Sites staff.

3.2 Discussion and possible direction to staff regarding Proposition 1, WSIP activities.

General Manager Watson stated there was nothing to report at this time.

3.3 Discussion and possible direction to staff regarding U.S. Bureau of Reclamation activities and WIIN Act Funding.

Mr. Dietl updated the Committee Members regarding Reclamation activities on the following:

- Federal Feasibility report.
- Preferred project description extension of time.
- Geotechnical activities started on October 2, 2019.

General Manager Watson stated they are holding monthly Coordination Meetings with Reclamation Management. The next meeting is on November 12, 2019. He also noted Reclamation has a new name "Interior Region 10 California Great Basin".

9:25 am. Randall Nuedeck, Metropolitan Water District, representative is now present and seated.

4. **2019 Ad Hoc Budget & Finance Work Group:** Traynham

4.1 Review and consider accepting the Sites Project Authority Treasurer's Report. **(Attachments 4-1A)**

**Action:** It was moved by Vanderwaal, seconded by Bettner to accept the Sites Project Authority Treasurer's Report, as submitted. The motion carried unanimously.

4.2 Consider approval of the Reservoir Committee's portion of the monthly Payment of Claims. **(Attachments 4-2 A&B)**

**Action:** It was moved by Kao, seconded by Marks to approve the Reservoir Committee's portion of the monthly Payment of Claims, as submitted. The motion carried unanimously.

4.3 Consider approval of the revised Phase 2 (2019) Work Plan supporting a revised completion date for Phase 2 (2019) from December 31, 2019 to March 31, 2020 as presented in Attachment A: Revised Phase 2 (2019) Reservoir Project Agreement, Exhibit B (90 Day Delay). **(Attachments 4-3 A, B & C)**

General Manager Watson stated the Reservoir Committee Members at their September 2019 meeting approved to extend the Phase 2 (2019) Participation Agreement by three months. He stated after further review it was decided that a three-month extension was not sufficient to accomplish everything that needed to be done. He stated a 180 days extension could be done, but there would be consequences in terms of deliverables being deferred and reductions in support in different areas would need to be made.

Mr. Robinette provided a presentation on the 90 days extension approved by the Reservoir Committee members at their September 2019 meeting versus the current request for a 180 days extension. He spoke to the following:

- Cash Flow (Revenue/Expenses) in a 90 day delay.
- 90 day delay deliverables with Service Areas.
- 90 day delay Service Areas with deliverables.
- 180 day delay deliverables with Service Areas.
- Phase 2 90 vs 180 day delay milestones.

- A Revised Phase 2 (2019) Deliverables.
- Summary of Deliverables for the Revised Phase 2 (2019) Work Plan – 90 vs 180 Extension Service Area Scope.

Mr. Robinette stated the primary focus is defining a permissible and affordable project and updating the project description. Lengthy discussion followed regarding a working budget, no additional costs to the participants, burn rate reductions which were discussed with the consultants, placement of certain work on hold until a preferred project description is finalized, bank RFPs and availability of funds for critical tasks.

Following discussion, it was the consensus of those Reservoir Committee Members present to proceed with the 180 days extension.

Outcome from discussion during the meeting:

- Project Description by End of 2019.
- Operations with Reclamation by March 31, 2020.
- Permitability by March 31 (handshake CDFW) 2020.
- Possible cash call to help advance critical deliverables (develop a plan with and without).
- Logistics:
  - 180 Day Extension Work Plan – consensus from Res Comm.
  - Participation agreements need to be signed in December.
  - Focus on aligning the budget to those tasks, work through it with the work groups.

#### 5. 2019 Ad Hoc Agreements & Contracts Work Group:

Davis

- 5.1 Consider approval of a recommendation to the Sites Project Authority to approve the "First Amendment to the Memorandum of Understanding for Completion of the North-of-Delta Offstream Storage investigation and Sharing of Costs" (2015) Cost Share MOU) as presented in Attachment A. **(Attachments 5-1 A & B)**

**Action:** It was moved by Davis, seconded by Marks to approve a recommendation to the Sites Project Authority to approve the "First Amendment to the Memorandum of Understanding for Completion of the North-of-Delta Offstream Storage Investigation and Sharing of Costs" (2015) (Cost Share MOU) by and between the U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region and the Sites Project Authority.

- 5.2 Consider approval of a recommendation to the Sites Project Authority to approve the "First Amendment to [the] 2019 Reservoir Project Agreement by and Among [the] Sites Project Authority and the Project Agreement members Listed Herein, dated as of January 1, 2020" (2019 Agreement) as presented in

Attachment A or as further amended by the Reservoir Committee at today, October 18, 2019. **(Attachment 5-2A)**

At the request of General Manager Watson, Chairman Headrick tabled the November 2019 meeting approval of a recommendation to the Sites Project Authority to approve the "First Amendment to [the] 2019 Reservoir Project Agreement by and Among [the] Sites Project Authority and the Project Agreement Members Listed Herein, dated as of January 1, 2020" (2019 Agreement).

**6. 2019 Ad Hoc Environmental & Permitting Work Group: Bettner**

- 6.1 Discussion and possible direction to staff regarding consultation discussion with the California Department of Fish and Wildlife.

At the request of Vice-chairman Bettner, Chairman Headrick tabled the matter regarding consultation discussion with the California Department of Fish and Wildlife.

- 6.2 Discussion and possible direction to staff regarding the status and progress of the Sites Reservoir (and Maxwell Water Intertie) Project's environmental planning and permitting efforts.

Ms. Forsythe provided an update regarding the status and progress of the Sites Reservoir Project's environmental planning and permitting efforts as follows:

- Final EIR/EIS.
- Federal Endangered Species Act (ESA).
- National Historic Preservation Act, Section 106.
- California Endangered Species Act (Fish and Game Code Section 2081).
- Army Corp regarding Clean Water Act, Section 401 and 404, with a meeting to be held early November 2019.

**7. 2019 Ad Hoc Reservoir Operations Work Group: Ruiz/Kunde**

- 7.1 Discussion and possible direction to staff regarding the ongoing activities of the Reservoir Operations Work Group.

Mr. Kunde provided an update regarding the ongoing activities of the Reservoir Operations Work Group as follows:

- Affordability Analysis.
- Modeling efforts in support of the CDFW process and affordability analysis.
- New demand patterns from participation members.
- Continued work by Rob Cooke, Department of Water Resources, on ability to get water moved to South of the Delta.

- Operations modeling technical memo regarding assumptions.

Discussion followed, with no action taken.

**8. 2019 Ad Hoc Water Facilities Work Group: Vanderwaal**

- 8.1 Consider approval of a recommendation to the Sites Project Authority to approve the Authority's Principles and Requirements for Feasibility Study.

Mr. Vanderwaal provided a brief update of the Authority's Principles and Requirements for the Feasibility Study.

Discussion followed. Continued discussion on this topic at the November 2019 Reservoir Committee Meeting.

**9. 2019 Ad Hoc Site Facilities Work Group: Azevedo**

- 9.1 Discussion and possible direction to staff regarding real estate, land management, site facility activities, and early geotechnical explorations.

Messrs., Azevedo, Spesert and Dietl provided a brief update on the site facility activities and geotechnical explorations.

Brief discussion followed, with no action taken.

**RECESS:**

Chairman Headrick declared a recess at 11:34 a.m. and convened into Closed Session at 11:39 a.m. to consider the following matter:

**10. Closed Session:**

- 10.1 Conference with legal counsel regarding significant exposure to litigation or adjudicatory proceedings (Govt. Code 54956.9(d)(2) and (4) (2 items)).

Chairman Headrick adjourned Closed Session at 12:40 p.m. and reconvened into Regular Session.

**11. Report from Closed Session:**

Chairman Headrick announced as to Closed Session regarding significant exposure to litigation or adjudicatory proceedings (Govt. code 54956.9(d)(2) and (4) (2 items), there was no reportable action taken.

**12. Recap:**

- 12.1 Agenda topics for next meeting:



- Special presentation of San Bernardino County's perspective on statewide water management, November 21, 2019.
- Special presentation of Westside Water District's perspective on statewide water management, December 19, 2019.

12.2 Upcoming Reservoir Committee Meetings:

**Thursday, November 21, 2019 1:00 p.m.**

Reservoir Committee  
Tsakopoulos Library Galleria  
828 I Street, Sacramento, CA 95814

**Thursday, November 21, 2019 4:30 p.m.**

Joint Authority Board and Reservoir Committee Meeting  
Downey Brand Office  
621 Capitol Mall, Ste. 18  
Sacramento, CA 95814

The meeting adjourned at 12:42 p.m.

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Chairman  
Doug Headrick

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General Manager  
Jim Watson



**Attachment B to Meeting Minutes - Attendance**

**Current Voting Reservoir Committee Participants (21):**

<i>Participant</i>	<input checked="" type="checkbox"/> <i>Representative</i>	<input checked="" type="checkbox"/> <i>Alternate</i>	<i>Others</i>
American Canyon, City	<input type="checkbox"/> Felix Hernandez III	<input type="checkbox"/> Jason Holley	
AVEK WA	<input type="checkbox"/> Dwayne Chisam	<input type="checkbox"/> Dan Flory	
Carter MWC	<input type="checkbox"/> Ben Carter	<input type="checkbox"/> Ann Carter	
Coachella Valley WD	<input type="checkbox"/> Robert Cheng	<input checked="" type="checkbox"/> Ivory Reyburn	
Colusa County.	<input checked="" type="checkbox"/> Azevedo, Mike	<input type="checkbox"/> Gary Evans	
Colusa Co. WD	<input checked="" type="checkbox"/> Shelley Murphy	<input type="checkbox"/> Joe Marsh	
Cortina WD	<input checked="" type="checkbox"/> Jim Peterson	<input type="checkbox"/> Chuck Grimmer	
Davis WD	<input checked="" type="checkbox"/> Jamie Traynham	<input type="checkbox"/> Tom Charter	
Desert WA	<input checked="" type="checkbox"/> Mark Krause	<input type="checkbox"/> Steve Johnson	
Dunnigan WD	<input checked="" type="checkbox"/> Bill Vanderwaal	<input type="checkbox"/>	
Glenn-Colusa ID	<input checked="" type="checkbox"/> Thad Bettner	<input type="checkbox"/> Don Bransford	
LaGrande WD	<input type="checkbox"/> Zach Dennis	<input type="checkbox"/> Ken LaGrande	
Metropolitan WD	<input checked="" type="checkbox"/> Randall Neudeck	<input type="checkbox"/> Chandra Chilmakuri	Sergio Valles
RD 108	<input checked="" type="checkbox"/> Bill Vanderwaal	<input type="checkbox"/> Blair Lewis	
San Bernardino V MWD	<input checked="" type="checkbox"/> Doug Headrick	<input checked="" type="checkbox"/> Bob Tincher	
San Gorgonio Pass WA	<input checked="" type="checkbox"/> Jeff Davis	<input type="checkbox"/>	
Santa Clara Valley WD	<input checked="" type="checkbox"/> Cindy Kao	<input type="checkbox"/> Eric Leitterman	
Santa Clarita Valley Water Agency	<input checked="" type="checkbox"/> Dirk Marks	<input type="checkbox"/> Steve Cole	
Westside WD	<input type="checkbox"/> Allan Myers	<input checked="" type="checkbox"/> Dan Ruiz	
Wheeler Ridge-Maricopa	<input checked="" type="checkbox"/> Rob Kunde	<input type="checkbox"/>	
Zone 7 WA	<input checked="" type="checkbox"/> Amparo Flores	<input type="checkbox"/> Carol Mahoney <input type="checkbox"/> Jarnail Chahal	Wes Mercado

Status: Issued for use

Version: A

Purpose:

Date: 2019 October 18

Comment 1

Ref/File #: 12.221-210.018

Comment 2

Subject to revision

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**Non-Voting Committee Participants (2):**

<i>Participant</i>	<input checked="" type="checkbox"/> <i>Representative/Other</i>	<input checked="" type="checkbox"/> <i>Alternate/Other</i>
Dept of Water Resources	<input checked="" type="checkbox"/> Rob Cooke	<input type="checkbox"/> David Sandino
	<input type="checkbox"/> Ajay Goyal	<input type="checkbox"/> Jim Wieking
Bureau of Reclamation	<input type="checkbox"/> Richard Welsh	<input type="checkbox"/> Don Bader
	<input type="checkbox"/> David Van Rijn	<input checked="" type="checkbox"/> Mike Dietl
	<input type="checkbox"/> Shana Kaplan	<input type="checkbox"/> Mike Mosley
		<input type="checkbox"/> Dave Arrate
		<input type="checkbox"/> Chris Duke
		<input type="checkbox"/> Natalie Wolder

**Pending Reservoir Committee Participants (0):**

<i>Participant</i>	<input checked="" type="checkbox"/> <i>Representative</i>	<input checked="" type="checkbox"/> <i>Alternate</i>
--------------------	---	--

**Authority, Non-Signatory (6):**

<i>Participant</i>	<input checked="" type="checkbox"/> <i>Representative</i>	<input checked="" type="checkbox"/> <i>Alternate</i>
Glenn County	<input type="checkbox"/> John Viegas	<input type="checkbox"/>
PCWA	<input type="checkbox"/> Ed Horton	<input type="checkbox"/> Ben Barker <input type="checkbox"/> Darin Reintjes
Roseville	<input type="checkbox"/> Sean Bigley	<input type="checkbox"/>
Sacramento, City of	<input type="checkbox"/> Jim Peifer	<input type="checkbox"/> Dan Sherry
Sacramento County WA	<input type="checkbox"/> Kerry Schmitz	<input type="checkbox"/> Michael Peterson
Tehama-Colusa Canal Authority	<input checked="" type="checkbox"/> Jeff Sutton	<input type="checkbox"/>

**Staff:**

<input checked="" type="checkbox"/> <i>Name</i>	<i>Representing</i>
<input checked="" type="checkbox"/> Forsythe, Ali	Sites Project Authority
<input checked="" type="checkbox"/> Frederiksen, Lee	Sites Project Authority
<input checked="" type="checkbox"/> Spesert, Kevin	Sites Project Authority
<input checked="" type="checkbox"/> Thomson, Rob	Sites Project Authority

<input checked="" type="checkbox"/> <i>Name</i>	<i>Representing</i>
<input checked="" type="checkbox"/> Trapasso, Joe	Sites Project Authority
<input checked="" type="checkbox"/> Tirado, Yolanda	Sites Project Authority
<input checked="" type="checkbox"/> Watson, Jim	Sites Project Authority
<input type="checkbox"/>	

**Consultant/Public:**

<input checked="" type="checkbox"/>	Name	Representing
<b>P</b>	Alexander, Jeriann	Fugro
<input type="checkbox"/>	Barnes, Joe	AECOM
<input checked="" type="checkbox"/>	Boling, Robert	HDR
<input type="checkbox"/>	Briard, Monique	ICF
<input type="checkbox"/>	Brown, Doug	Stradling
<input checked="" type="checkbox"/>	Brown, Scott	LWA
<input type="checkbox"/>	Bruner, Marc	Perkins Coie
<input type="checkbox"/>	Campbell, Jeff	Project Controls Cubed
<input type="checkbox"/>	Floyd, Kim	Floyd
<input checked="" type="checkbox"/>	Herrin, Jeff	AECOM
<input checked="" type="checkbox"/>	Heydinger	Erin
<input checked="" type="checkbox"/>	Johns, Jerry	Johns
<b>P</b>	Katz, Sara	Katz & Associates
<input checked="" type="checkbox"/>	Kivett, Marcia	Sites Project Authority

<input checked="" type="checkbox"/>	Name	Representing
<input type="checkbox"/>	Krivanec, Chris	HDR
<b>P</b>	Kuney, Scott	Young Wooldridge
<input type="checkbox"/>	McDonald, Connor	Bender Rosenthal
<input type="checkbox"/>	Montague, Doug	Montague DeRose Assoc.
<b>P</b>	Motamed, Farid	Fugro
<input checked="" type="checkbox"/>	Robinette, JP	Brown & Caldwell
<input type="checkbox"/>	Rossetto, Sarah	Katz & Associates
<input checked="" type="checkbox"/>	Rude, Peter	Jacobs
<input checked="" type="checkbox"/>	Spranza, John	HDR
<input checked="" type="checkbox"/>	Tull, Rob	Ch2m
<input type="checkbox"/>	Van Camp, Marc	MBK
<input type="checkbox"/>	Warner Herson, Laurie	Phenix
<b>P</b>	Dowd, Alan	Young Wooldridge

**Other Attendees:** *(Check box to have email address added to the distribution list)*

Name	Representing	Contact (Phone & E-mail)
Forest, Mike	AECOM	<input type="checkbox"/>
Mathews, Jeff	Westervelt	<input type="checkbox"/>
Serrano, Oscar	CICC	<input type="checkbox"/>
Rehermann, Clint	Motive Power, Inc	<input type="checkbox"/>
Lui, Gracie	Fugro	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>





**Attachment A to Meeting Minutes - Roll Call**

**Current Voting Committee Participants (21):**

<input checked="" type="checkbox"/>	<i>Pct</i>	<i>Participant</i>	<input checked="" type="checkbox"/>	<i>Pct</i>	<i>Participant</i>
<input type="checkbox"/>	3.42	American Canyon, City	<input checked="" type="checkbox"/>	2.64	LaGrande WD (2)
<input type="checkbox"/>	2.51	Antelope Valley-East Kern WA	<input checked="" type="checkbox"/>	15.34	Metropolitan WD (#)
<input type="checkbox"/>	2.46	Carter MWC	<input checked="" type="checkbox"/>	3.42	Reclamation District 108
<input checked="" type="checkbox"/>	4.97	Coachella Valley WD	<input checked="" type="checkbox"/>	7.93	San Bernardino Valley MWD
<input checked="" type="checkbox"/>	4.97	Colusa County	<input checked="" type="checkbox"/>	6.01	San Geronio Pass WA
<input checked="" type="checkbox"/>	5.49	Colusa Co. WD	<input checked="" type="checkbox"/>	6.53	Santa Clara Valley WD
<input checked="" type="checkbox"/>	2.50	Cortina WD (1)	<input checked="" type="checkbox"/>	3.67	Santa Clarita Valley WA
<input checked="" type="checkbox"/>	2.90	Davis WD	<input checked="" type="checkbox"/>	6.27	Westside WD
<input checked="" type="checkbox"/>	0.00	Department of Water Resources (non-voting)	<input checked="" type="checkbox"/>	3.17	Wheeler Ridge-Maricopa WSD
<input checked="" type="checkbox"/>	4.06	Desert WA	<input checked="" type="checkbox"/>	0.00	US Bureau of Reclamation (non-voting)
<input checked="" type="checkbox"/>	3.09	Dunnigan WD	<input checked="" type="checkbox"/>	4.97	Zone 7 WA
<input checked="" type="checkbox"/>	3.68	Glenn-Colusa ID	100.00 Total		

**17. Voting members represented at Meeting start** (See Note 1)

**76.3 %** Represented participation percentage

**18. Represented by 9:35 am** (See Note 1)

**91.6 %** Represented participation percentage

Representation has been delegated as follows:

- (1) To Jamie Traynham, Davis WD until 9:35 am.
- (2) To Jamie Traynham, Davis WD
- (#) Not present between 11 to 11:45 am

**NOTE 1:** Participation by phone are not counted in quorum or voting.

Status: Meeting Record

Version: 0

Purpose:

Date: 2019 Oct 19

**NOTE 2:** Additional participants were on the phone, but did not identify themselves.

Caveat 1

Ref/File #: 12.221-210.018

Caveat 2

Subject to revision

Page: 1 of 1





Topic: **Reservoir Committee Agenda Item 3-1** **2019 November 21**

Subject: **Monthly Status Report**

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**Requested Action:**

No action requested. Discussion and possible direction to staff regarding the Sites Project's monthly status report.

**Detailed Description/Background:**

General Manager and staff to provide an update on project activities performed in October 2019 for; Program Management & Administration, Engagement & Outreach, Proposition 1, Environmental, Feasibility Study and Engineering & Technical Support.

**Prior Reservoir Committee Board Action:**

None.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Jim Watson

**Attachments:**

Attachment A: October 2019 Status Report.

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Status:	Draft	Prepared:	Spesert	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	QA/QC:	Watson	Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Watson	Ref/file #:	12.221-210.018		
Notes:				Page:	1	of	1



Topic: **Sites Reservoir Project, Phase 2**

Subject: **Monthly Status Report**

Report Period: **2019 October**

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### Monthly Status Summary:

The development of the Sites Project continues to make progress in the critical areas associated with the reprioritized Phase 2 (2019) budget and work plan, including the following activities:

- Continued detailed discussions with the California Department of Fish and Wildlife (CDFW) on pre-application permit consultation.
- Continued supporting Reclamation on completion of their Feasibility Report, including the coordination of biological and cultural monitoring along with land access for the NODOS Feasibility Geotechnical Investigations. Reclamation also requested that the Authority review the current version of the Feasibility Report; comments were made specific to EIR/EIS status and environmental feasibility and provided to Reclamation on October 25, 2019. Language was also provided to reflect the Authority's current efforts to 'right-size' the project.

The following highlights the status of activities conducted during the month:

### Coordination with Reclamation:

- Continued coordination of Project activities funded by Reclamation and those funded by the Authority.
- Continued coordination and support for feasibility geotechnical investigation.

### Permitting and Environmental Planning:

- Continued pre-construction permit discussions with CDFW on both construction and operational effects of the project to state-listed and state fully-protected species.
- Began implementing the environmental commitments including biological, cultural and tribal field monitoring activities for geotechnical testing and sampling work that will advance the design and cost estimate in Reclamation Feasibility Report. Drilling activities initiated on October 2, 2019 and are being funded and undertaken by Reclamation.
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects.
- Initiated joint meetings with CDFW, National Marine Fisheries Service and U.S. Fish and Wildlife Service (USFWS) on the aquatic construction and operational effects of the project and joint meetings with CDFW and USFWS on the terrestrial construction and operational effects of the project.

### Engineering:

- Continued to advance the near-term geotechnical exploration program to support the federal Feasibility Report's cost estimate. Conducted utility locating during NODOS Investigation.

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Status:	Issued for Use	Prepared:	RDT, JAT, KMS	Phase:	2	Version:	A
Purpose:	Informational	QA/QC:	Watson	Date:	2019 November 21		
caveat:	Subject to change	Authority Agent:	Watson	Ref/File #:	10211-016.000		
Notes:				Page:	1	of	2

- Supported the value planning effort by providing review comments.
- Continued to advance the development of a draft Principles and Requirements to guide the development of feasibility studies by making revisions reflecting review comments from work groups.
- Continue to advance the operations and repayment analysis, to review key methodologies and assumptions with work groups, and to document the process and key assumptions.
- Initiated development of a framework for the operations and repayment workshop held on November 15, 2019.

**Real Estate, Stakeholder Engagement & Public Outreach:**

Continued ongoing coordination efforts with landowners, local community members, state and federal elected officials, government agencies and coalitions of regional and statewide organizations including the following activities:

- Responded to landowner requests for project information, facilitated coordination activities with local government agencies and organizations and planned for future landowner, stakeholders and general public outreach activities and events.
- Coordinated Temporary Right of Entry (TROE) activities in support of the 2019 focused Geotechnical field studies conducted in October 2019.
- Conducted project site tours/presentations with project participants including Metropolitan Water District and facilitated a project site tour for an LA Times editorial reporter.

**Program Management & Administration:**

- Submitted Quarterly Report Number 5 to the California Water Commission (CWC). Invoice Number 1 was approved by the CWC and sent for payment.
- Developed standard operating procedures related to CWC Invoice Coding and Progress Report.
- Developed Phase 2 (2019) budget and work plan. Presented information at October Res Comm meeting and attended associated work group meetings.







Topic: Reservoir Committee Agenda Item 3-2 2019 November 21

Subject: Status of Funding Activities - State's WSIP and Federal (WIIN Act and USDA)

**Requested Action:**

No action requested. Discussion and possible direction to staff regarding activities related to compliance with Water Commission's administration of the Water Storage Investment program (WSIP) and access to federal funding.

U.S. Bureau of Reclamation activities and WIIN Act Funding.

**Detailed Description/Background:**

1. WSIP: Early Funding Agreement (EFA) Invoices.

1<sup>st</sup> Invoice: Based on Water Commission staff's invoice processing timeline, the State is forecast to make the direct deposit for the first EFA invoice next week in the amount of \$2.77 million. This amount exceeds the \$1.88 million planned revenue as part of the approved Phase 2 (2019) Work Plan.

2<sup>nd</sup> Invoice: The Water Commission staff approved the second EFA invoice on November 7<sup>th</sup> in the amount of \$1.25 million. The direct deposit should occur before the end of December.

3<sup>rd</sup> Invoice: In mid-December, staff plans to submit the third invoice for work performed from July 1 through September 30, 2019.

2. WSIP: Quarterly Reporting.

Acceptance of the Water Commission's conditional funding decision requires each applicant submit their quarterly report. The current status reporting period is from July 1 through September 1. The Sites Project provided this report (**Attachment 03-2A**) and a summarized comparison of the quarterly reports for all eight eligible projects is also provided (**Attachment 03-2B**).

3. WSIP: Converting the conditional funding amount into an Ecosystem Water Budget.

The Sites Project Authority's August 2017 application proposed the state's investment in environmental benefits be through their ownership of a proportionate share of the reservoir's storage and in accordance with the beneficiary pays principle and that their management of this asset would determine the value of the benefits they achieve. In July 2018, the Water Commission made their "Maximum Conditional Funding Determination" (MCED) for the Sites Reservoir Project in the amount of \$816.3 million (dollars

Status:	Draft	Prepared:	Watson	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	QA/QC:	Thomson	Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Watson	Ref/file #:	12.221-210.018		
Notes:				Page:	1	of	3

in year 2015), which is approximately 30% of the total Proposition 1, WSIP total budget. This amount included funding for flood, recreation, and, most importantly, environmental benefits.

Since the Proposition 1 application, the Sites Reservoir Project continues to advance; primarily in the areas of operations (diversions from and releases to the Sacramento River), costs (on both an initial and lifecycle basis) and funding commitments by the local, state and federal agencies. In parallel, other, external, water policy and management issues are being resolved; some of which will positively or negatively affect how the Sites Reservoir Project should be developed today and ideally ahead of the next drought. This, in turn, will affect the value proposition for each of the local, state and federal partners.

The process to determine how the state's conditional funding of \$816.3 million can be converted into a proportionate share of reservoir storage is provided (**Attachment 03-2C**).

4. USDA Rural Development for the Maxwell Water intertie:

Work is progressing in parallel with the efforts to advance the Sites Reservoir project with an end-of-year status report to be prepared in early 2020.

5. WIIN Act (§4007(c)) as a non-federal water storage project:

Funding: There is no progress to report since the Department of Interior submitted their February 13, 2019 letter to the Subcommittee on Energy and Water Development Committee on Appropriations. This letter included \$6 million [FY 2018 appropriations] to the Sites Reservoir Project; specifically, to advance the project's feasibility and environmental compliance. Additional funding [FY 2019 appropriations] is being requested.

In accordance with federal processes and procedures, the Secretary of Interior needs to determine a water storage project, such as the Sites reservoir Project, is feasibility before any conditional funding commitment and role can be defined. In accordance with these requirements, Reclamation continues to advance their feasibility study, which was previously authorized under CalFed.

6. Reclamation Funding-related Agreements:

6.1 Amendment to the 2015 Cost-share MOU: The Authority Board, at their October 18 Meeting approved the amendment, which has been signed by Chairman Durst. The signed amendment was provided to Mid-Pacific on November 12 for their countersignature.

6.2 Financial Assistance Agreement: Meetings have started to define the scope and roles of the Authority and Reclamation to allow federal funds to be provided to the Authority to continue to advance the Sites Reservoir Project.

**Prior Reservoir Committee Action:**

None.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Jim Watson/Joe Trapasso

**Attachments:**

Attachment A: Sites Project's Quarterly Status Report.

Attachment B: Comparison of all Quarterly Status Report.

Attachment C: Overview of the process to convert the State's funding determinations into a share of Reservoir storages.





## Water Storage Investment Program Quarterly Report

The Quarterly Report is intended to document applicants' progress toward complying with regulation section 6013 and receiving final WSIP funding, including any changes in the magnitude of public benefits that could affect cost allocation. Applicants must provide a summary level update of the project status for the requirements and milestones listed below. The template may be modified as necessary to effectively communicate information. If minimal activities occurred during a reporting period, the report can be condensed.

- Note any issues or concerns that have, will, or could affect milestones or requirements.
- Identify key issues, including legal issues such as lawsuits or injunctions related to the project, that need to be resolved.
- Discuss how the actual schedule is progressing in comparison to the schedule provided in the Initial Report or the last reported schedule.
- Update the project schedule as needed.
- Note any milestones or accomplishments that occurred since submittal of the prior Quarterly Report.

### Project Information

Project Name:

Sites Reservoir Project

Applicant Name:

Sites Project Authority (Authority)

Date:

October 30, 2019

Reporting Period:

July 1, 2019 through September 30, 2019

### General Update and Key Issues

Please provide a general update and describe any key issues that occurred during this reporting period. You may attach additional documents or pages if more space is needed:

No significant issues occurred and there were no variances from the schedule. Work continues to progress in the key areas related to the project's operations and benefits to the local, state, and federal participants, environmental analyses and documentation, certifications and agreements, engineering, economics, financing, risk management, and landowner and community outreach. Refer to Attachment A for additional information.



## Items Required Prior to Scheduling a Final Award Hearing

The following items must be provided prior to scheduling a hearing. As applicable, please describe the status, estimated completion date, and percent complete of:

### 1. Contracts for non-public cost share:

Status: Multiple agreements are planned. Refer to Attachment A  
Estimated Completion Date: December 2021  
Percent Complete: 20%

### 2. Contracts for administration of public benefits:

Status: Starting. Refer to Attachment A  
Estimated Completion Date: December 2021  
Percent Complete: 0%

### 3. Completed feasibility studies:

Status: In Progress. Refer to Attachment A  
Estimated Completion Date: June 2021  
Percent Complete: 50%

### 4. Final environmental documentation:

Status: In Progress. Refer to Attachment A  
Estimated Completion Date: December 2020  
Percent Complete: 20%

### 5. All required federal, state, and local approvals, certifications, and agreements:

Status: In Progress. Refer to Attachment A  
Estimated Completion Date: December 2021  
Percent Complete: 5%



# Attachment A: Supplement for Reporting Period Ending September 30, 2019



## 1.0 Items Required Prior to Scheduling a Final Award Hearing

### 1) Contracts for non-public cost share (ongoing)

Based on the following, the estimated completion date is December 2021 and the estimated percent complete is approximately 20%.

Local Project Participants (Participants): The original participation agreements were signed in 2016 and were replaced with a new agreement effective April 1, 2019. The Authority is working with the Participants to extend the current agreement through at least June 2020. For post-planning activities, a successor agreement is contemplated.

Signed Amendment:

- Estimated Completion Date: June 30, 2020
- Percent Complete: 70%

Successor Participation Agreement Signed:

- Estimated Completion Date: December 2021
- Percent Complete: 0%

Reclamation: The Authority and Reclamation are updating the existing cost share agreement (2015) for continued planning and pre-construction activities. This first amendment will extend the term for 5 additional years from the date it is signed. In addition, the Authority is working with Reclamation on a financial assistance agreement to support the completion of the planning phase. A new agreement may be needed for post-planning activities.

Signed Cost Share Amendment:

- Estimated Completion Date: November 2019
- Percent Complete: 90%

Financial Assistance Agreement:

- Estimated Award Date: August 2020
- Percent Complete: 5%

Funding Agreement:

- Estimated Completion Date: December 2021
- Percent Complete: 0%

## 2) Contracts for administration of public benefits (ongoing)

**Based on the following, the estimated completion date is December 2021 and the estimated percent complete is approximately 0%.**

State of California (WSIP): The Authority and the California Department of Fish and Wildlife (CDFW) are conducting focused discussions on the state permit application processes (refer to item #5).

- o Estimated Completion Date: December 2021
- o Percent Complete: 0%

Federal (Reclamation), Non-WSIP: The Authority continues to work with Reclamation through the development of a Reclamation compliant feasibility report, to identify additional public benefits (refer to item #3)

## 3) Completed Feasibility Studies (ongoing)

**Based on the following, the estimated completion date is December 2021 and the estimated percent complete is approximately 50%.**

The Authority and Reclamation continue to update and refine the draft Feasibility Report from the version that was included as an attachment to the Authority's WSIP application. Updated analysis includes the project's feasibility as a locally sponsored storage project in compliance with WSIP requirements and the level of federal participation, which requires compliance with Reclamation's requirements. Efforts continue to improve the project's cost-effectiveness and risk management. Also, analysis is underway to evaluate the potential for phased implementation. The Authority plans to further advance the engineering, environmental, economic and financial analysis before requesting the Water Commission consider the project's feasibility.

Reclamation Compliant Feasibility Studies:

- o Estimated Completion Date: December 2020
- o Percent Complete: 70%

WSIP Compliant Feasibility Studies:

- o Estimated Completion Date: June 2021
- o Percent Complete: 35%

The Authority and Reclamation plan to start focused geotechnical investigations to support additional design, initial permit applications and refinement of the cost estimate. Reclamation and the Authority have been preparing a work plan, are completing environmental documentation, preparing permit applications (refer to item #5), and developing both monitoring and health and safety protocols to support these focused geotechnical investigations.

Focused Geotechnical Investigations - Field Work:

- o Estimated Start Date: October 2019
  - o Estimated Completion Date: December 2019
  - o Percent Complete: 0%
- Environmental, Permitting, and Monitoring Support: Refer to item #5

4) **Final Environmental Documentation (ongoing)**

**Based on the following, the estimated completion date is December 2020 and the estimated percent complete is approximately 20%.**

The Authority, as the state lead agency, and Reclamation, as the federal lead agency, continue to perform additional environmental analysis to support the development of a Final Environmental Impact Report / Environmental Impact Statement (EIR/EIS). Current work focuses on developing responses to comments received on the Draft EIR/EIS. Comments have been reviewed, categorized and initial responses to individual comments have been completed. Also, a number of master responses to comments have been developed. Preparation of the remaining sections of the Final EIR/EIS, including minor edits and updates to the Draft EIR/EIS, has also begun.

Draft EIR/EIS:

- o Estimated Completion Date: August 2017
- o Percent Complete: 100%

Final EIR/EIS:

- o Estimated Completion Date: December 2020
- o Final EIR/EIS, Percent Complete: 20%

5) **All required federal, state, and local approvals, certifications, and agreements (ongoing)**

**Based on the following, the estimated completion date is December 2021 and the estimated percent complete is approximately 5%.**

Federal: The Authority and Reclamation continue to prepare the draft Biological Assessment in compliance with the Federal Endangered Species Act and the draft Programmatic Agreement in compliance with the National Historic Preservation Act. Throughout this time period, the Authority and Reclamation met several times with the U.S. Fish and Wildlife Service (USFWS) to discuss approach to the Biological Assessment. The schedule for the Biological Assessment has been extended to allow for additional analysis and discussion with USFWS and the National Marine Fisheries Service (NMFS).

- o Estimated Completion Date: December 2021
- o Percent Complete: 14%

State of California: The Authority continues to have productive meetings with CDFW to discuss the project, the permit application process, and supporting information to include the permit applications. These meetings are expected to continue over the next few months.

- Estimated Completion Date: December 2021
- Percent Complete: 7%

Local: To allow Reclamation to perform focused geotechnical investigations, the Authority has been assisted Reclamation to obtain encroachment permits from Colusa County, Maxwell ID, and GCID and, where applicable, access agreement with landowners.

Focused Geotechnical Investigations (refer to item #3): The Authority and Reclamation continue to advance the environmental documentation for the focused geotechnical investigations. A Biological Opinion for the geotechnical investigations was received from the USFWS on September 30, 2019 and the National Historic Preservation Act, Section 106 consultation with the State Historic Preservation Office was completed on September 26, 2019. In addition, Reclamation signed a Categorical Exclusion on September 30, 2019. The focused geotechnical investigations are being undertaken and funded by Reclamation.

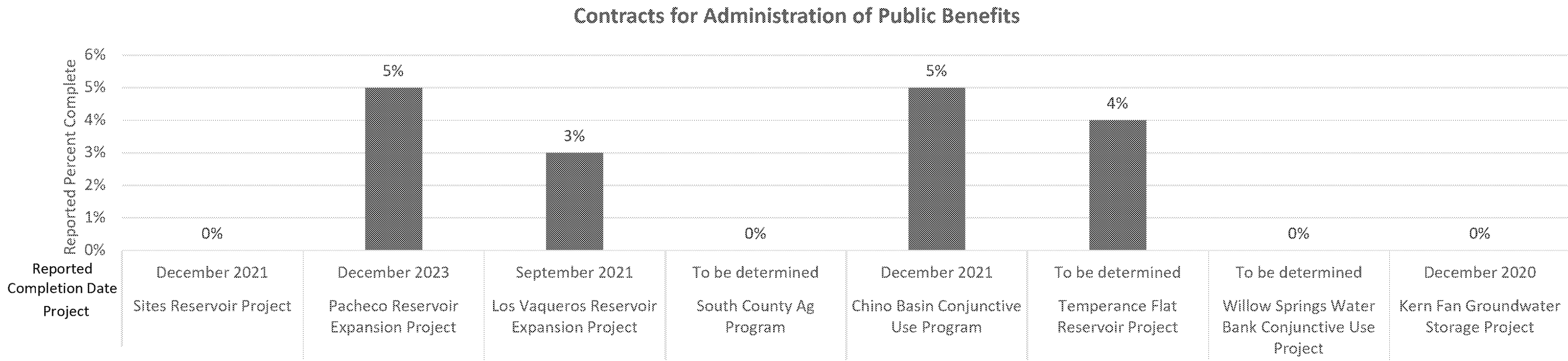
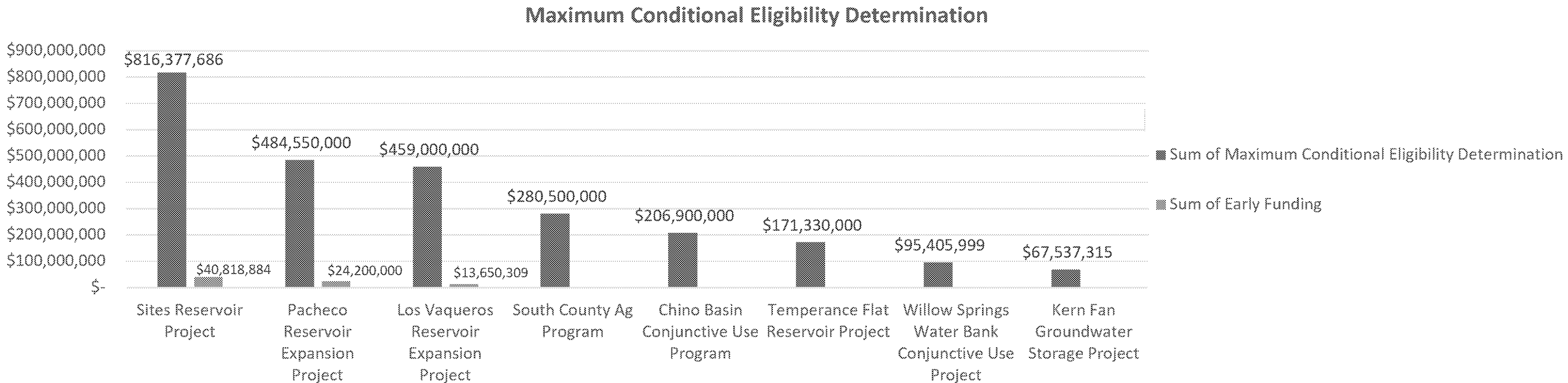
Environmental, Permitting, and Monitoring Support to Focused Geotechnical Investigations:

- Estimated Completion Date: December 2019
- Percent Complete: 50%



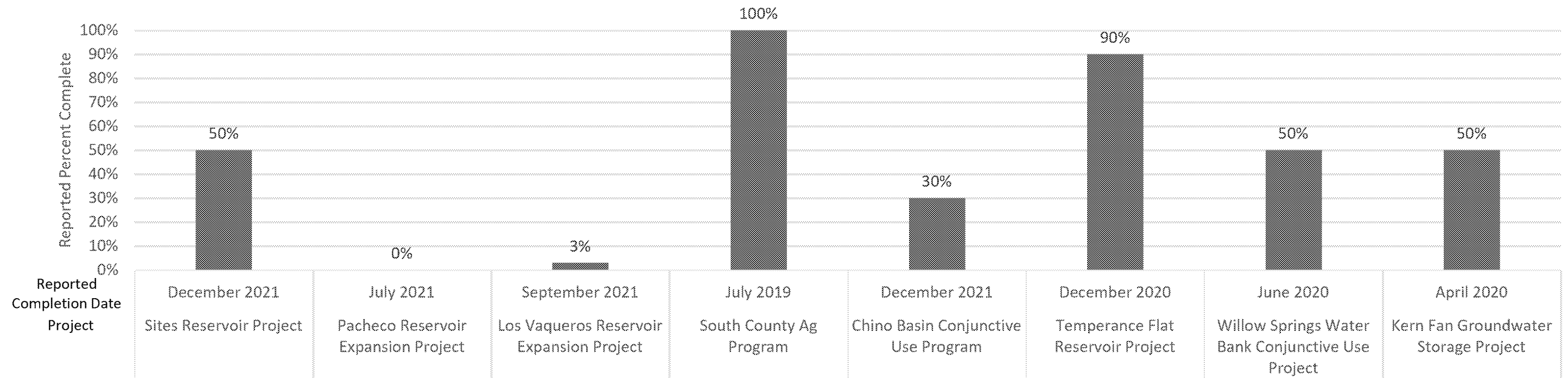


### Reported Progress of Eligible Proposition 1 WSIP Projects as of September 30, 2019 (per the latest publicly available Quarterly Reports dated October 2019)

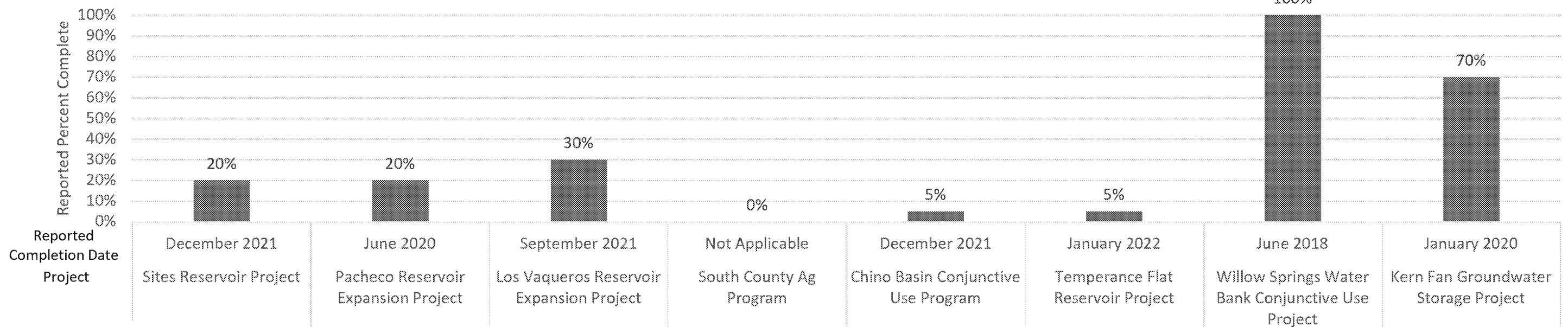


## Reported Progress of Eligible Proposition 1 WSIP Projects as of September 30, 2019 (per the latest publicly available Quarterly Reports dated October 2019)

### Completed Feasibility Studies

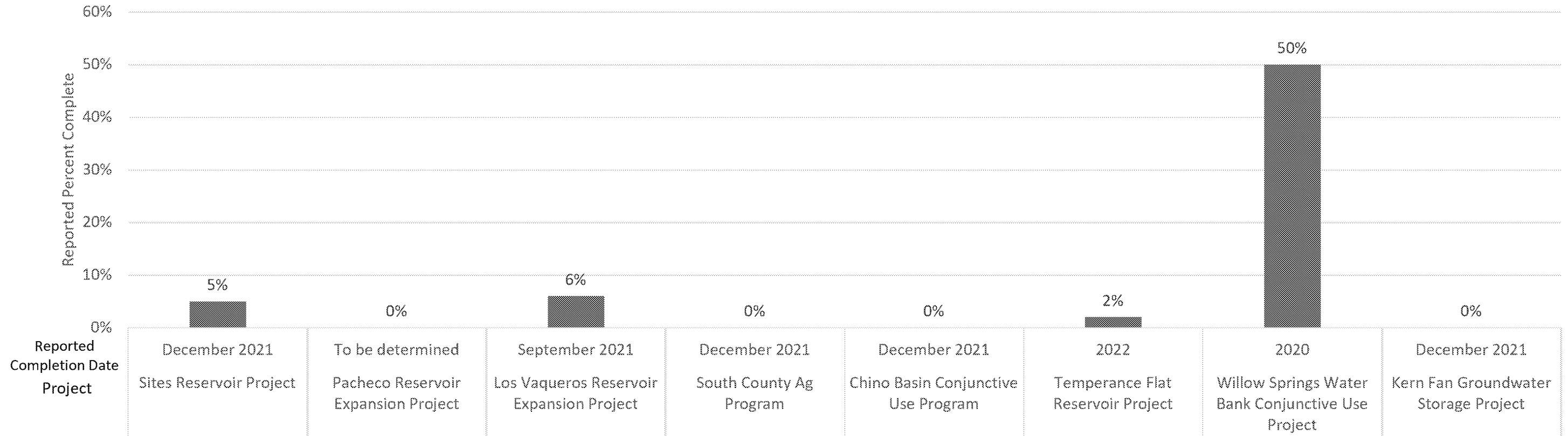


### Contracts for Non-Public Cost Share



Reported Progress of Eligible Proposition 1 WSIP Projects as of September 30, 2019  
(per the latest publicly available Quarterly Reports dated October 2019)

All required federal, state, local approvals, certifications, and agreements







Topic: **Sites Reservoir Project**

**2019 Nov 14**

Overview: **State’s Investment in the Sites Reservoir Project**

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**Purpose:** Summarize the water-based benefits of the Sites Project based on the California Water Commission’s findings and determinations related to their conditional funding decision.

This document summarizes the process defined by the Water Storage Investment Program (WSIP) regulations and the response to those regulation by the Sites Project Authority, to then provide a status of the evaluation and award of conditional funding of the project by the California Water Commission as it relates to a conditional investment in reservoir storage.

**Application Process:** After Proposition 1 [2014] was approved by the voters, the Water Commission developed regulations to evaluate proposals as required under Chapter 8. These regulations were adopted on March 07, 2017. Applicable elements of the regulations included:

- The methodology to estimate water-based environmental and/or water quality benefits. Specifically, to evaluate the creation of “net improvement in ecosystem and water quality conditions”<sup>1</sup>, the Water Commission released the September 9, 2016, climate change (VIC) model and December 16, 2016 version of CalSim and DSM2<sup>2</sup> to the applicants. These models included input from the administering agencies: CDWR, CDFW and SWRCB and required the results be provided for years 2030 and 2070.
- To monetize public benefits, three methodologies were allowed<sup>3</sup>. Additional requirements were provided in the Technical Reference Document, which included how to analyze benefits occurring between years 2030 and 2070.
- A 100-point scoring process was developed to rank all eligible proposals. In addition, proposals were ranked to allocate funding with proposals ranked 1 or 2 eligible to receive full funding and proposals ranked 3 required Water Commission to decide how to allocate any remaining Proposition 1 funds<sup>4</sup>.

**NOTE:** The state’s funding is in 2015 dollars. The amounts do not escalate over time, which results in less buying power should the project take longer to become operable.

**Authority’s Proposal (WSIP Application):**

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<sup>1</sup> California Water Code §79750(b).

<sup>2</sup> Regulations are the California Code of Regulations, Title 23, Division 7, Chapter 1 (CCR). Both the CalSim and DSM2 models and climate change model were included by reference per CCR §6004(a)(1).

<sup>3</sup> Economic methods were limited to the lesser value of “avoided cost”, “cost of an equivalent feasible project”, or “Willingness to Pay”, which are defined in CCR §6004(a)(4)(F)

<sup>4</sup> Points were assigned based on four categories, that included: “Public Benefit Ratio” ≤ 33 points, “Relative Environmental Values ≤ 27 points, resiliency ≤ 25 points, and Implementation Risk ≤ 15 points. The ranking criteria is per CCR §6011(e).

Status:	Draft, Subject to Change	Prepared:	Watson	Phase:	2	Version:	C
Purpose:	Informational	Checked:	Thomson	Doc Date:	2019 Nov 14		
Notes		QA/QC:		Ref/Rev #:	19.010 - 010.500		
				Page:	1	of	4

- Benefits: The Authority provided an application that identified the full buildout of "Alternative D" (refer to the draft EIR/EIS, which was also included as part of the application<sup>5</sup>) as the basis of the estimation of benefits. Using the prescribed methodologies and the model results provided<sup>6</sup>, the long-term annualized total deliveries (both water supply and environmental) totaled 441,000 acre-ft/year. These operations resulted in over \$122,000,000 (total) in annualized WSIP public benefits and a WSIP Public Benefit Ratio of 2.1. The annual WSIP deliveries required an equivalent storage capacity of 710,000 acre-feet<sup>7</sup> in Sites Reservoir. When combined with the other WSIP-eligible benefits (flood management, and recreational benefits), the total requested funding was \$1,662,000,000.

The identified environmental benefits required the allocation of 197,000 acre-ft/year. A breakdown of the specific environmental benefits were as follows:

1. Monetized: The monetized benefits were based on water deliveries to benefit:

Anadromous Fish: 190,000 acre-ft/year in drier years (125,000 annualized)

Delta Smelt: 29,000 acre-ft/year in drier years (39,000 annualized)

Incremental Level 4 Refuge Supplies: 19,000 acre-ft/year in drier years (33,000 annualized)

2. Non-Monetized: Release of exchanged water from Oroville and Folsom to benefit salmonids and/or steelhead and potentially sturgeon<sup>8</sup> were not specifically monetized because of the lack of appropriate models.

The WSIP flood management, and recreational benefits were derived from the full development of the reservoir and do not require an allocation of water. These benefits were valued at totaled \$241.8 million.

- State's Management of An Environmental Water Budget:

"Should the state or federal government elect to invest in the project's construction, in exchange for acquiring water which they would manage for environmental benefits, the Authority intends that the appropriate state and/or federal resource agency would become a partner. This agency would then have the same or equivalent status as the

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<sup>5</sup> In addition to the Draft EIR/EIS, Reclamation's Draft Feasibility Report was also included as part of the Authority's application. At this time, their report did not include "operational flexibility" as a proposed public (non-WSIP) benefit.

<sup>6</sup> The environmental benefits were based on the model results (defined by the Water Commission) that included key regulatory parameters such as: existing 2008/09 Biological Opinions and defined 'reasonable and prudent alternatives', and existing bypass flow criteria (e.g.; Wilkins Slough bypass criteria of 5,000 cfs). There were no assumptions related to either the SWRCB's unimpaired flows or proposed voluntary agreements. No modeling criteria was developed during the CA WaterFix project review (i.e.; North of Delta Outflow Index, minimum bypass flows at Freeport).

<sup>7</sup> Refer to the Application's Executive Summary, page 4.

<sup>8</sup> Refer to the Application's Executive Summary, page 13, upper left.

water agencies who participate and fund their share of the project's costs to improve their water supplies." <sup>9</sup>

Further, as a non-monetized benefit to the state, "[t]he Authority proposes that the agencies with delegated authority to manage the state's investment would also have management control. This would be in the planning and also in the day-to-day releases needed to adapt to current and forecast conditions." <sup>10</sup>

- **Beneficiary Pays Principle Applied to the State's Investment**<sup>11</sup>: Ensuring this principle applies to all investors ensures that as the project's capital costs change all investments in water-based benefits will pay the same unit cost to produce an acre-foot of storage. Similarly, for annual costs, each investor is responsible for paying their proportionate share of the operations, maintenance, and replacement costs over the project's life.

**Capital costs:** "The participating water agencies will finance their proportionate shares of capacity and Proposition 1 funds will cover the state's share of the initial capital."

**Annual Costs:** "The participating water agencies will pay their proportionate share based on releases either at Holthouse or Delevan as appropriate. The state's share of these costs can be provided from revenues generated from at least two sources: (1) after water has been released from a reservoir to provide at least one Proposition 1-eligible benefit, a small portion of this water could be recaptured and then sold under a long-term contract and/or (2) the state's share of water stored in the reservoir could be used to generate electricity for third annual party sales through the pumped-storage operations. Should the state's revenue exceed the applicable annual costs, the surplus could be used to provide additional public benefits within the Sacramento Valley and/or Delta."

In the operations modeling that is an input to the financial model being used to evaluate ranges of estimate annual costs during the repayment period, a "sub-account" has been created to estimate the amount of storage that would need to be operated in a manner to generate revenue to pay for these annual costs. This sub-account reduces the amount of "active" storage that can be operated to produce environmental benefits.

**Water Commission's Process:** After the evaluation and appeal process, the Commission determined the Authority was eligible for \$1,008,280,000<sup>12</sup>. However, since the scoring process resulted in a Rank 3, the Water Commission elected to reduce this amount to \$816,377,686<sup>13</sup> in order to fund all eight eligible applications; specifically, two applications that each had a total point score less than the Authority's. Once the Commission reduced the eligible amount, it uncoupled the Water Commission staff's calculation of benefits by category. However, prior to the reduction, the monetized benefits for Flood and Recreation totaled \$241.8 million<sup>14</sup>. Since no further re-allocation of benefits was included in the WSIP

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<sup>9</sup> Refer to the Application's Executive Summary, page 4, bottom right. In addition, the concept of providing the state with an environmental water budget, as proposed by Public Policy Institute of California, could not be explicitly included because the application was submitted in August 17, 2017 and the PPIC report was not released until November 2017.

<sup>10</sup> Refer to the Application's Executive Summary, page 14, upper left

<sup>11</sup> Refer to the Application's Executive Summary, page 16.

<sup>12</sup> Water Commission Resolution 2019-02. Amount is in 2015 dollars. However, the Authority reduced its requested funding amount to \$916.62 m in order to increase the Water Commission's calculated Benefit Cost Ratio closer to 1.1

<sup>13</sup> Water Commission Resolution 2018-14. Amount is in 2015 dollars.

<sup>14</sup> Water Commission letter dated 2018 April 20, Table 3. Amount is in 2015 dollars.



process the subtraction of the non-water-based benefits from the total approved funding results in an allocation of \$574.6 million to acquire water-based environmental benefits that would be produced through their management of their share of the reservoir's storage.

1.





Topic: **Reservoir Committee Agenda Item 4-1**      **2019 November 21**

Subject: **Treasurer's Report**

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**Requested Action:**

Review and consider accepting the Sites Project Authority Treasurer's Report as presented in Attachment 4-1A.

**Detailed Description/Background:**

Attachment 4-1A incorporates financial information through October 31, 2019.

**Prior Reservoir Committee Action:**

None.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Joe Trapasso

**Attachments:**

Attachment A: October 2019 Treasurer's Report.

Status:	Final	Prepared:	Trapasso	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	CA/CC:	Spesert	Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Trapasso	Ref/Rev #:	10.700		
Notes:				Page:	1	of	1



## SITES JOINT POWERS AUTHORITY

## TREASURER'S REPORT

October 31, 2019

**Savings Account-River City Bank**

Beginning Balance	10/01/2019	\$ 2,211,455.48	
Interest Earned		\$ 3,471.27	
Transfers to Checking to maximize benefit		\$ (361,843.57)	
<b>River City Bank ICS Savings Account Balance</b>	<b>10/31/2019</b>		<b>\$ 1,853,083.18</b>

**Checking Account-River City Bank**

Beginning Balance	10/01/2019	\$ 5,354,636.53	
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## RECEIVED:

Membership Revenue	\$	-	
Reservoir Revenue	\$	25,357.50	
Interest Earned	\$	8,537.79	
<b>TOTAL RECEIVED</b>	<b>\$</b>	<b>33,895.29</b>	

## DISBURSED:

Bank Service Charge	\$	(162.85)	
Accounting Fees	\$	(1,996.50)	
Administrative Support	\$	(8,555.40)	
Business/Comm Manager	\$	(24,107.01)	
Program Op Manager	\$	(29,105.85)	
Computer Service	\$	(1,065.52)	
General Manager	\$	(39,628.54)	
Office Expenses	\$	(1,703.70)	
Water Association Dues	\$	(18,665.00)	
Property Entry right fees	\$	(2,500.00)	
Professional Fees-Legislative/Regulatory	\$	(28,000.00)	
Professional Fees-Engineering/Tech	\$	(26,304.71)	
Professional Fees-Real Estate	\$	(7,515.84)	
Professional Fees-Organizational Assessment	\$	(15,690.39)	
Professional Fees-Bond Counsel	\$	(3,835.00)	
Professional Fees-Communication	\$	(52,279.06)	
Professional Fees-Cost Development	\$	(1,510.50)	
Professional Fees-Env Mgr/Permit Manager	\$	(36,894.16)	
Professional Fees-Municipal Advisor	\$	(40,058.75)	
Professional Fees-Project Controls	\$	(258,474.00)	
Professional Fees-Geotechnical/Eng	\$	(17,720.03)	
Professional Fees-Project Operations	\$	(4,750.00)	
Professional Fees-Env/Biological/Permitting	\$	(470,795.77)	
Professional Fees-Reservoir Operations	\$	(815.50)	
Professional Fees-Legal Services	\$	(16,724.85)	
Professional Fees-EPP Manager	\$	(30,573.84)	
Professional Fees-Integration	\$	(261,449.07)	
<b>TOTAL DISBURSED</b>	<b>\$</b>	<b>(1,400,881.84)</b>	

<b>Transfer from Savings</b>	<b>\$</b>	<b>361,843.57</b>	
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<b>River City Bank Checking Account Balance</b>	<b>10/31/2019</b>		<b>\$ 4,349,493.55</b>
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<b>TOTAL CASH ON HAND</b>	<b>October 31, 2019</b>	<b>\$ 6,202,576.73</b>
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**Sites Project Joint Powers Authority  
Transactions by Account  
As of October 31, 2019**

Type	Date	Num	Name	Memo	Debit	Credit	Balance
<b>ICS Savings</b>							
General Journal	10/04/2019	10-2C			58,419.81		2,211,455.48
General Journal	10/21/2019	10-2C		adjust ICS balance to max		420,263.38	2,269,875.29
General Journal	10/31/2019	10-5C		adjust ICS balance to max rec int fme	3,471.27		1,849,611.91
Total ICS Savings					61,891.08	420,263.38	1,853,083.18
<b>River City Operating Account</b>							
General Journal	10/04/2019	10-2C		adjust ICS balance to max		58,419.81	5,354,636.53
Bill Pmt -Check	10/15/2019	1978	Adept Solutions Inc			1,065.52	5,296,216.72
Bill Pmt -Check	10/15/2019	1979	AECOM Technical Services, Inc.			26,304.71	5,295,151.20
Bill Pmt -Check	10/15/2019	1980	Association of California Water A...			18,665.00	5,268,846.49
Bill Pmt -Check	10/15/2019	1981	Bender Rosenthal Inc			7,515.84	5,250,181.49
Bill Pmt -Check	10/15/2019	1982	Brown and Caldwell			258,474.00	5,242,665.65
Bill Pmt -Check	10/15/2019	1983	Darling H2O Consulting, Inc.			15,690.39	4,984,191.65
Bill Pmt -Check	10/15/2019	1984	Dunn Consulting			8,000.00	4,968,501.26
Bill Pmt -Check	10/15/2019	1985	Forsythe Group LLC			30,573.84	4,929,927.42
Bill Pmt -Check	10/15/2019	1986	Fugro USA Land, Inc			17,720.03	4,912,207.39
Bill Pmt -Check	10/15/2019	1987	Gerald E Johns			4,750.00	4,907,457.39
Bill Pmt -Check	10/15/2019	1988	HDR Engineering Inc			261,449.07	4,646,008.32
Bill Pmt -Check	10/15/2019	1989	ICF Jones & Stokes Inc			470,795.77	4,175,212.55
Bill Pmt -Check	10/15/2019	1990	J.C. Watson, Inc			39,628.54	4,135,584.01
Bill Pmt -Check	10/15/2019	1991	Katz and Associates, Inc			52,279.06	4,083,304.95
Bill Pmt -Check	10/15/2019	1992	KCoe Isom, LLP			1,996.50	4,081,308.45
Bill Pmt -Check	10/15/2019	1993	Larsen Wurzel & Associates, Inc			1,510.50	4,079,797.95
Bill Pmt -Check	10/15/2019	1994	M.R. Cleaning Services			200.00	4,079,597.95
Bill Pmt -Check	10/15/2019	1995	Maximun Pest Control			65.00	4,079,532.95
Bill Pmt -Check	10/15/2019	1996	MBK Engineers Inc			615.50	4,078,717.45
Bill Pmt -Check	10/15/2019	1997	Montague DeRose and Associat...			40,058.75	4,038,658.70
Bill Pmt -Check	10/15/2019	1998	Mt Shasta Spring Water			85.45	4,038,573.25
Bill Pmt -Check	10/15/2019	1999	Perkins Coie LLP			6,896.70	4,031,676.55
Bill Pmt -Check	10/15/2019	2000	RDJT Associates Inc			36,894.16	3,994,782.39
Bill Pmt -Check	10/15/2019	2001	Recology Butte Colusa Counties			36.75	3,994,745.64
Bill Pmt -Check	10/15/2019	2002	Rush Personnel Services, Inc			8,555.40	3,986,190.24
Bill Pmt -Check	10/15/2019	2003	Spesert Consulting			24,107.01	3,962,083.23
Bill Pmt -Check	10/15/2019	2004	Stradling Yocca Carlson & Rauth			3,835.00	3,958,248.23
Bill Pmt -Check	10/15/2019	2005	The Ferguson Group			20,000.00	3,938,248.23
Bill Pmt -Check	10/15/2019	2006	Trapasso Consulting Services			29,105.85	3,909,142.38
Bill Pmt -Check	10/15/2019	2007	US Bank			1,316.50	3,907,825.88
Bill Pmt -Check	10/15/2019	2008	Young Wooldridge LLP			9,828.15	3,897,997.73
Bill Pmt -Check	10/16/2019	2009	Kannes, Karen & Charlie, LLC	VOID:	0.00		3,897,997.73
Bill Pmt -Check	10/21/2019	2010	Kannes, Karen & Charlie, LLC			2,500.00	3,895,497.73
General Journal	10/21/2019	10-2C		adjust ICS balance to max	420,263.38		4,315,761.11
General Journal	10/29/2019	10-3C		Bank service fee		162.85	4,315,598.26
Deposit	10/31/2019			City of Sacramento	25,357.50		4,340,955.76
General Journal	10/31/2019	10-4C		rec int fme	8,537.79		4,349,493.55
Total River City Operating Account					454,158.67	1,459,301.65	4,349,493.55
<b>US Bank Checking</b>							
Total US Bank Checking							0.00
<b>TOTAL</b>					<b>516,049.75</b>	<b>1,879,565.03</b>	<b>6,202,576.73</b>

**Sites Project Joint Powers Authority**

**Balance Sheet**

As of October 31, 2019

	Oct 31, 19
<b>ASSETS</b>	
<b>Current Assets</b>	
Checking/Savings	
ICS Savings	1,853,083.18
River City Operating Account	4,349,493.55
<b>Total Checking/Savings</b>	<b>6,202,576.73</b>
<b>Accounts Receivable</b>	
Accounts Rec Members	
Membership - Authority	12,862.77
Membership - Reservoir	22,429.72
<b>Total Accounts Rec Members</b>	<b>35,292.49</b>
<b>Total Accounts Receivable</b>	<b>35,292.49</b>
<b>Other Current Assets</b>	
Prepaid Expenses	1,854.25
<b>Total Other Current Assets</b>	<b>1,854.25</b>
<b>Total Current Assets</b>	<b>6,239,723.47</b>
<b>TOTAL ASSETS</b>	<b>6,239,723.47</b>
<b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
Accounts Payable	
Accounts Payable	1,071,101.60
<b>Total Accounts Payable</b>	<b>1,071,101.60</b>
<b>Total Current Liabilities</b>	<b>1,071,101.60</b>
<b>Long Term Liabilities</b>	
Participant Reimbursement Polic	6,064,652.67
<b>Total Long Term Liabilities</b>	<b>6,064,652.67</b>
<b>Total Liabilities</b>	<b>7,135,754.27</b>
<b>Equity</b>	
Net Assets	1,929,216.58
Retained Earnings	1,376,147.87
Net Income	-4,201,395.25
<b>Total Equity</b>	<b>-896,030.80</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>6,239,723.47</b>

FOR MANAGEMENT PURPOSES ONLY



Sites Project Joint Powers Authority

A/R Aging Summary

As of October 31, 2019

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	<u>Current</u>	<u>1 - 30</u>	<u>31 - 60</u>	<u>61 - 90</u>	<u>&gt; 90</u>	<u>TOTAL</u>
Antelope Valley - East Kern Water Agency	0.00	0.00	0.00	0.00	16,317.92	16,317.92
City of American Canyon	0.00	0.00	0.00	0.00	-4,988.20	-4,988.20
Davis Water District	0.00	0.00	0.00	0.00	-137.23	-137.23
LaGrande Water	0.00	0.00	0.00	0.00	11,100.00	11,100.00
Yolo County Flood Control	0.00	0.00	0.00	0.00	13,000.00	13,000.00
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>35,292.49</b>	<b>35,292.49</b>

**Sites Project Joint Powers Authority**  
**A/P Aging Summary**  
As of October 31, 2019

	Current	1 - 30	31 - 60	61 - 90	> 90	TOTAL
ACWA JPIA	0.00	2,139.00	0.00	0.00	0.00	2,139.00
Adept Solutions Inc	672.20	0.00	0.00	0.00	0.00	672.20
AECOM Technical Services, Inc.	41,657.70	0.00	0.00	0.00	0.00	41,657.70
Bender Rosenthal Inc	0.00	7,366.37	0.00	0.00	0.00	7,366.37
Brown and Caldwell	95,330.35	0.00	0.00	0.00	0.00	95,330.35
CH2M Hill Engineers, Inc	0.00	138,761.39	0.00	0.00	0.00	138,761.39
Darling H2O Consulting, Inc.	7,756.17	0.00	0.00	0.00	0.00	7,756.17
Dunn Consulting	8,000.00	0.00	0.00	0.00	0.00	8,000.00
Forsythe Group LLC	30,764.56	0.00	0.00	0.00	0.00	30,764.56
Fugro USA Land, Inc	26,041.42	0.00	0.00	0.00	0.00	26,041.42
Gerald E Johns	2,250.00	0.00	0.00	0.00	0.00	2,250.00
HDR Engineering Inc	127,614.04	0.00	0.00	0.00	0.00	127,614.04
ICF Jones & Stokes Inc	0.00	385,610.38	0.00	0.00	0.00	385,610.38
J.C. Watson, Inc	35,988.32	0.00	0.00	0.00	0.00	35,988.32
Katz and Associates, Inc	0.00	37,952.71	0.00	0.00	0.00	37,952.71
KCoe Isom, LLP	3,908.50	0.00	0.00	0.00	0.00	3,908.50
Larsen Wurzel & Associates, Inc	1,574.24	0.00	0.00	0.00	0.00	1,574.24
M.R. Cleaning Services	200.00	0.00	0.00	0.00	0.00	200.00
Maximun Pest Control	65.00	65.00	0.00	0.00	0.00	130.00
MBK Engineers Inc	0.00	9,895.73	0.00	0.00	0.00	9,895.73
Mt Shasta Spring Water	73.95	0.00	0.00	0.00	0.00	73.95
Perkins Coie LLP	11,725.20	0.00	0.00	0.00	0.00	11,725.20
RDJT Associates Inc	17,389.44	0.00	0.00	0.00	0.00	17,389.44
Recology Butte Colusa Counties	35.95	0.00	0.00	0.00	0.00	35.95
Rush Personnel Services, Inc	5,490.45	0.00	0.00	0.00	0.00	5,490.45
Spesert Consulting	21,557.54	0.00	0.00	0.00	0.00	21,557.54
Stradling Yocca Carlson & Rauth	3,121.69	0.00	0.00	0.00	0.00	3,121.69
The Ferguson Group	0.00	10,000.00	0.00	0.00	0.00	10,000.00
Trapasso Consulting Services	29,033.62	0.00	0.00	0.00	0.00	29,033.62
US Bank	461.01	0.00	0.00	0.00	0.00	461.01
Young Wooldridge LLP	8,599.67	0.00	0.00	0.00	0.00	8,599.67
<b>TOTAL</b>	<b>479,311.02</b>	<b>591,790.58</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,071,101.60</b>

**Sites Project Joint Powers Authority**  
**Profit & Loss**  
October 2019

	Oct 19	Jan - Oct 19
Ordinary Income/Expense		
Income		
Membership Admin/Authority	0.00	505,000.00
Membership Water	0.00	11,458,033.62
<b>Total Income</b>	<b>0.00</b>	<b>11,963,033.62</b>
Gross Profit	0.00	11,963,033.62
Expense		
Accounting Expense	3,908.50	38,044.49
Admin Support Gen Manager	5,490.45	56,293.65
Audit Fees	0.00	11,891.78
Bank Service Fees	162.85	1,338.56
Dues and Subscriptions	0.00	22,780.00
Entry Right Rent Expense	2,500.00	2,500.00
General Manager Services	35,988.32	356,247.14
<b>Total General Manager</b>	<b>35,988.32</b>	<b>356,247.14</b>
Insurance - Property	0.00	250.00
Insurance Liability	0.00	534.75
Miscellaneous Expenses		
Job Posting Expense	0.00	1,175.00
<b>Total Miscellaneous Expenses</b>	<b>0.00</b>	<b>1,175.00</b>
Office Expenses		
Cleaning	200.00	1,900.00
Conference Room Rental	0.00	1,145.00
Misc Office & Operating Exp	461.01	5,233.72
Pest Control & Maintenance	65.00	650.00
Trash Service	35.95	351.58
Water Expense	73.95	442.50
<b>Total Office Expenses</b>	<b>835.91</b>	<b>9,722.80</b>
Participant Refund	0.00	6,503,713.35
Professional Fees		
Bond Counsel	3,121.69	7,866.69
Bus/Comm Manager	21,557.54	193,412.37
Communication	37,952.71	328,762.83
Cost Development Model	1,574.24	9,780.96
Engineering & Technical Service	41,657.70	229,304.57
Env Planning/Permits Manager	17,389.44	356,793.67
Env/Biological Services	205,988.34	1,257,235.06
Environmental/Project Operation	0.00	326,300.00
EPP Manager	30,764.56	153,731.72
Federal Government Affairs Supp	10,000.00	30,000.00
General Legal Counsel	8,599.67	115,760.44
Geotechnical Engineering	26,041.42	183,384.04
Legislative/Reg/Strategic	8,000.00	72,000.00
Municipal Advisor	0.00	93,195.00
Operations/Simulation Modeling	138,761.39	709,493.84
Organizational Assessment	7,756.17	23,446.56
Permitting & Agreements	179,622.04	1,107,449.72
Program Ops Manager	29,033.62	291,874.23
Project Controls	95,330.35	1,173,897.15
Project Delivery Advisor	0.00	4,005.00
Project Integration	127,614.04	2,195,036.70
Project Operations	2,250.00	73,250.00
Public Outreach & Engagement	0.00	21,455.50
Real Estate	0.00	200,457.42
Reservoir Operations	9,895.73	25,573.98
ROW/Land Management	0.00	13,892.28
Special Legal	11,725.20	57,454.65

FOR MANAGEMENT PURPOSES ONLY

**Sites Project Joint Powers Authority**  
**Profit & Loss**  
October 2019

	Oct 19	Jan - Oct 19
Total Professional Fees	1,014,635.85	9,254,814.38
Website, Data, Computer Support	672.20	9,411.77
<b>Total Expense</b>	<b>1,064,194.08</b>	<b>16,268,717.67</b>
Net Ordinary Income	-1,064,194.08	-4,305,684.05
<b>Other Income/Expense</b>		
Other Income		
Interest Income		
Interest Income-River City	12,009.06	104,147.49
Interest Income-US Bank	0.00	141.31
<b>Total Interest Income</b>	<b>12,009.06</b>	<b>104,288.80</b>
<b>Total Other Income</b>	<b>12,009.06</b>	<b>104,288.80</b>
Net Other Income	12,009.06	104,288.80
<b>Net Income</b>	<b>-1,052,185.02</b>	<b>-4,201,395.25</b>

FOR MANAGEMENT PURPOSES ONLY

**Sites Project Joint Powers Authority  
Transaction Detail By Account**

October 2019

Type	Date	Num	Name	Memo	Class	Debit	Credit	Balance
<b>Accounting Expense</b>								
Bill	10/31/2019	KC065857	KCoe Isom, LLP	10/19	Authority	781.70		-781.70
Bill	10/31/2019	KC065857	KCoe Isom, LLP	10/19	Reservoir	3,126.80		-3,908.50
Total Accounting Expense						3,908.50	0.00	-3,908.50
<b>Admin Support Gen Manager</b>								
Bill	10/31/2019	2559,2560,2...	Rush Personnel Services, ...	10/19	Authority	1,098.09		-1,098.09
Bill	10/31/2019	2559,2560,2...	Rush Personnel Services, ...	10/19	Reservoir	4,392.36		-5,490.45
Total Admin Support Gen Manager						5,490.45	0.00	-5,490.45
<b>Bank Service Fees</b>								
General J...	10/29/2019	10-3C		Bank service fee	Authority	22.80		-22.80
General J...	10/29/2019	10-3C		Bank service fee	Reservoir	140.05		-162.85
Total Bank Service Fees						162.85	0.00	-162.85
<b>Entry Right Rent Expense</b>								
Bill	10/15/2019	APN 012-16...	Kannes, Karen & Charlie, ...		Reservoir	2,500.00		-2,500.00
Total Entry Right Rent Expense						2,500.00	0.00	-2,500.00
<b>General Manager Services</b>								
Bill	10/31/2019	SPA-051	J.C. Watson, Inc	10/19	Authority	5,205.53		-5,205.53
Bill	10/31/2019	SPA-051	J.C. Watson, Inc	10/19	Reservoir	30,782.79		-35,988.32
Total Services						35,988.32	0.00	-35,988.32
Total General Manager						35,988.32	0.00	-35,988.32
<b>Office Expenses</b>								
<b>Cleaning</b>								
Bill	10/31/2019	1226	M.R. Cleaning Services	10/19	Authority	200.00		-200.00
Total Cleaning						200.00	0.00	-200.00
<b>Misc Office &amp; Operating Exp</b>								
Bill	10/31/2019	Online	US Bank	10/19	Authority	378.38		-378.38
Bill	10/31/2019	Online	US Bank	10/19	Reservoir	82.63		-461.01
Total Misc Office & Operating Exp						461.01	0.00	-461.01
<b>Pest Control &amp; Maintenance</b>								
Bill	10/30/2019	49726	Maximun Pest Control	10/19	Authority	65.00		-65.00
Total Pest Control & Maintenance						65.00	0.00	-65.00
<b>Trash Service</b>								
Bill	10/31/2019	36543809	Recology Butte Colusa Co...	10/19	Authority	35.95		-35.95
Total Trash Service						35.95	0.00	-35.95
<b>Water Expense</b>								
Bill	10/08/2019	435669	Mt Shasta Spring Water	10/19	Authority	41.60		-41.60
Bill	10/29/2019	441890	Mt Shasta Spring Water	10/19	Authority	32.35		-73.95
Total Water Expense						73.95	0.00	-73.95
Total Office Expenses						835.91	0.00	-835.91
<b>Professional Fees</b>								
<b>Bond Counsel</b>								
Bill	10/24/2019	358705-0001	Stradling Yocca Carlson &...	9/19	Reservoir	3,121.69		-3,121.69
Total Bond Counsel						3,121.69	0.00	-3,121.69
<b>Bus/Comm Manager</b>								
Bill	10/31/2019	11-19	Spesert Consulting	10/19	Reservoir	21,557.54		-21,557.54
Total Bus/Comm Manager						21,557.54	0.00	-21,557.54
<b>Communication</b>								
Bill	10/15/2019	413384	Katz and Associates, Inc	9/19 (C)	Authority	22,771.63		-22,771.63
Bill	10/15/2019	413384	Katz and Associates, Inc	9/19 (C)	Reservoir	15,181.08		-37,952.71
Total Communication						37,952.71	0.00	-37,952.71
<b>Cost Development Model</b>								
Bill	10/07/2019	1609000-0919	Larsen Wurzel & Associat...	9/19	Reservoir	1,574.24		-1,574.24
Total Cost Development Model						1,574.24	0.00	-1,574.24
<b>Engineering &amp; Technical Service</b>								
Bill	10/31/2019	2000282486	AECOM Technical Service...	10/19	Reservoir	41,657.70		-41,657.70
Total Engineering & Technical Service						41,657.70	0.00	-41,657.70
<b>Env Planning/Permits Manager</b>								
Bill	10/31/2019	11-2019	RDJT Associates Inc	10/19	Reservoir	17,389.44		-17,389.44
Total Env Planning/Permits Manager						17,389.44	0.00	-17,389.44
<b>Env/Biological Services</b>								
Bill	10/15/2019	0142071	ICF Jones & Stokes Inc	9/19 (E)	Reservoir	205,988.34		-205,988.34

**Sites Project Joint Powers Authority  
Transaction Detail By Account  
October 2019**

Type	Date	Num	Name	Memo	Class	Debit	Credit	Balance
Total Env/Biological Services						205,988.34	0.00	-205,988.34
<b>EPP Manager</b>								
Bill	10/31/2019	SPA-201910	Forsythe Group LLC	10/19	Reservoir	30,764.56		-30,764.56
Total EPP Manager						30,764.56	0.00	-30,764.56
<b>Federal Government Affairs Supp</b>								
Bill	10/01/2019	1019154	The Ferguson Group	10/19	Authority	5,000.00		-5,000.00
Bill	10/01/2019	1019154	The Ferguson Group	10/19	Reservoir	5,000.00		-10,000.00
Total Federal Government Affairs Supp						10,000.00	0.00	-10,000.00
<b>General Legal Counsel</b>								
Bill	10/31/2019	61194	Young Wooldridge LLP	10/19	Authority	6,048.17		-6,048.17
Bill	10/31/2019	61194	Young Wooldridge LLP	10/19	Reservoir	2,551.50		-8,599.67
Total General Legal Counsel						8,599.67	0.00	-8,599.67
<b>Geotechnical Engineering</b>								
Bill	10/31/2019	04.7219003...	Fugro USA Land, Inc	10/19 (I)	Reservoir	26,041.42		-26,041.42
Total Geotechnical Engineering						26,041.42	0.00	-26,041.42
<b>Legislative/Reg/Strategic</b>								
Bill	10/31/2019	Letter	Dunn Consulting	10/19	Authority	4,000.00		-4,000.00
Bill	10/31/2019	Letter	Dunn Consulting	10/19	Reservoir	4,000.00		-8,000.00
Total Legislative/Reg/Strategic						8,000.00	0.00	-8,000.00
<b>Operations/Simulation Modeling</b>								
Bill	10/11/2019	D3205400-006	CH2M Hill Engineers, Inc	9/19 (D)	Reservoir	138,761.39		-138,761.39
Total Operations/Simulation Modeling						138,761.39	0.00	-138,761.39
<b>Organizational Assessment</b>								
Bill	10/31/2019	105	Darling H2O Consulting, Inc.	10/19	Authority	7,756.17		-7,756.17
Total Organizational Assessment						7,756.17	0.00	-7,756.17
<b>Permitting &amp; Agreements</b>								
Bill	10/15/2019	0142070	ICF Jones & Stokes Inc	9/19 (F)	Reservoir	179,622.04		-179,622.04
Total Permitting & Agreements						179,622.04	0.00	-179,622.04
<b>Program Ops Manager</b>								
Bill	10/31/2019	SPA 17-25	Trapasso Consulting Servi...	10/19	Reservoir	29,033.62		-29,033.62
Total Program Ops Manager						29,033.62	0.00	-29,033.62
<b>Project Controls</b>								
Bill	10/31/2019	17356225	Brown and Caldwell	10/19 (B)	Reservoir	95,330.35		-95,330.35
Total Project Controls						95,330.35	0.00	-95,330.35
<b>Project Integration</b>								
Bill	10/31/2019	1200226874	HDR Engineering Inc	10/19 (A)	Reservoir	127,614.04		-127,614.04
Total Project Integration						127,614.04	0.00	-127,614.04
<b>Project Operations</b>								
Bill	10/31/2019	Letter	Gerald E Johns	10/19	Reservoir	2,250.00		-2,250.00
Total Project Operations						2,250.00	0.00	-2,250.00
<b>Reservoir Operations</b>								
Bill	10/16/2019	19-09-4941.0	MBK Engineers Inc	9/19	Reservoir	9,895.73		-9,895.73
Total Reservoir Operations						9,895.73	0.00	-9,895.73
<b>Special Legal</b>								
Bill	10/29/2019	6087934	Perkins Coie LLP	9/19	Reservoir	11,725.20		-11,725.20
Total Special Legal						11,725.20	0.00	-11,725.20
Total Professional Fees						1,014,635.85	0.00	-1,014,635.85
<b>Website, Data, Computer Support</b>								
Bill	10/31/2019	MSP-137707	Adept Solutions Inc	11/19	Authority	134.44		-134.44
Bill	10/31/2019	MSP-137707	Adept Solutions Inc	11/19	Reservoir	537.76		-672.20
Total Website, Data, Computer Support						672.20	0.00	-672.20
<b>Interest Income</b>								
<b>Interest Income-River City</b>								
General J...	10/31/2019	10-4C		rec int fme	Authority		1,195.29	1,195.29
General J...	10/31/2019	10-4C		rec int fme	Reservoir		7,342.50	8,537.79
General J...	10/31/2019	10-5C		rec int fme	Reservoir		3,471.27	12,009.06
Total Interest Income-River City						0.00	12,009.06	12,009.06
Total Interest Income						0.00	12,009.06	12,009.06
<b>TOTAL</b>						<b>1,064,194.08</b>	<b>12,009.06</b>	<b>-1,052,185.02</b>

**Sites Project Joint Powers Authority**  
**Balance Sheet by Class**  
As of October 31, 2019

	Authority	Reservoir	TOTAL
<b>ASSETS</b>			
<b>Current Assets</b>			
Checking/Savings			
ICS Savings	0.00	1,853,083.18	1,853,083.18
River City Operating Account	589,903.07	3,759,590.48	4,349,493.55
<b>Total Checking/Savings</b>	589,903.07	5,612,673.66	6,202,576.73
<b>Accounts Receivable</b>			
<b>Accounts Rec Members</b>			
Membership - Authority	12,862.77	0.00	12,862.77
Membership - Reservoir	0.00	22,429.72	22,429.72
<b>Total Accounts Rec Members</b>	12,862.77	22,429.72	35,292.49
<b>Total Accounts Receivable</b>	12,862.77	22,429.72	35,292.49
<b>Other Current Assets</b>			
Prepaid Expenses	200.00	1,654.25	1,854.25
<b>Total Other Current Assets</b>	200.00	1,654.25	1,854.25
<b>Total Current Assets</b>	602,965.84	5,636,757.63	6,239,723.47
<b>TOTAL ASSETS</b>	<b>602,965.84</b>	<b>5,636,757.63</b>	<b>6,239,723.47</b>
<b>LIABILITIES &amp; EQUITY</b>			
<b>Liabilities</b>			
<b>Current Liabilities</b>			
<b>Accounts Payable</b>			
Accounts Payable	53,614.01	1,017,487.59	1,071,101.60
<b>Total Accounts Payable</b>	53,614.01	1,017,487.59	1,071,101.60
<b>Total Current Liabilities</b>	53,614.01	1,017,487.59	1,071,101.60
<b>Long Term Liabilities</b>			
Participant Reimbursement Polic	0.00	6,064,652.67	6,064,652.67
<b>Total Long Term Liabilities</b>	0.00	6,064,652.67	6,064,652.67
<b>Total Liabilities</b>	53,614.01	7,082,140.26	7,135,754.27
<b>Equity</b>			
Net Assets	114,307.93	1,814,908.65	1,929,216.58
Retained Earnings	328,056.41	1,048,091.46	1,376,147.87
Net Income	106,987.49	-4,308,382.74	-4,201,395.25
<b>Total Equity</b>	549,351.83	-1,445,382.63	-896,030.80
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>602,965.84</b>	<b>5,636,757.63</b>	<b>6,239,723.47</b>

FOR MANAGEMENT PURPOSES ONLY



**Sites Project Joint Powers Authority**  
**Profit & Loss by Class**  
October 2019

	Authority	Reservoir	TOTAL
<b>Ordinary Income/Expense</b>			
<b>Expense</b>			
Accounting Expense	781.70	3,126.80	3,908.50
Admin Support Gen Manager	1,098.09	4,392.36	5,490.45
Bank Service Fees	22.80	140.05	162.85
Entry Right Rent Expense	0.00	2,500.00	2,500.00
General Manager Services	5,205.53	30,782.79	35,988.32
<b>Total General Manager</b>	<b>5,205.53</b>	<b>30,782.79</b>	<b>35,988.32</b>
<b>Office Expenses</b>			
Cleaning	200.00	0.00	200.00
Misc Office & Operating Exp	378.38	82.63	461.01
Pest Control & Maintenance	65.00	0.00	65.00
Trash Service	35.95	0.00	35.95
Water Expense	73.95	0.00	73.95
<b>Total Office Expenses</b>	<b>753.28</b>	<b>82.63</b>	<b>835.91</b>
<b>Professional Fees</b>			
Bond Counsel	0.00	3,121.69	3,121.69
Bus/Comm Manager	0.00	21,557.54	21,557.54
Communication	22,771.63	15,181.08	37,952.71
Cost Development Model	0.00	1,574.24	1,574.24
Engineering & Technical Service	0.00	41,657.70	41,657.70
Env Planning/Permits Manager	0.00	17,389.44	17,389.44
Env/Biological Services	0.00	205,988.34	205,988.34
EPP Manager	0.00	30,764.56	30,764.56
Federal Government Affairs Supp	5,000.00	5,000.00	10,000.00
General Legal Counsel	6,048.17	2,551.50	8,599.67
Geotechnical Engineering	0.00	26,041.42	26,041.42
Legislative/Reg/Strategic	4,000.00	4,000.00	8,000.00
Operations/Simulation Modeling	0.00	138,761.39	138,761.39
Organizational Assessment	7,756.17	0.00	7,756.17
Permitting & Agreements	0.00	179,622.04	179,622.04
Program Ops Manager	0.00	29,033.62	29,033.62
Project Controls	0.00	95,330.35	95,330.35
Project Integration	0.00	127,614.04	127,614.04
Project Operations	0.00	2,250.00	2,250.00
Reservoir Operations	0.00	9,895.73	9,895.73
Special Legal	0.00	11,725.20	11,725.20
<b>Total Professional Fees</b>	<b>45,575.97</b>	<b>969,059.88</b>	<b>1,014,635.85</b>
<b>Website, Data, Computer Support</b>	<b>134.44</b>	<b>537.76</b>	<b>672.20</b>
<b>Total Expense</b>	<b>53,571.81</b>	<b>1,010,622.27</b>	<b>1,064,194.08</b>
<b>Net Ordinary Income</b>	<b>-53,571.81</b>	<b>-1,010,622.27</b>	<b>-1,064,194.08</b>
<b>Other Income/Expense</b>			
<b>Other Income</b>			
Interest Income			
Interest Income-River City	1,195.29	10,813.77	12,009.06
<b>Total Interest Income</b>	<b>1,195.29</b>	<b>10,813.77</b>	<b>12,009.06</b>
<b>Total Other Income</b>	<b>1,195.29</b>	<b>10,813.77</b>	<b>12,009.06</b>
<b>Net Other Income</b>	<b>1,195.29</b>	<b>10,813.77</b>	<b>12,009.06</b>
<b>Net Income</b>	<b>-52,376.52</b>	<b>-999,808.50</b>	<b>-1,052,185.02</b>

FOR MANAGEMENT PURPOSES ONLY

**Sites Project Joint Powers Authority**  
**Profit & Loss by Class - YTD**  
January through October 2019

	Authority	Reservoir	TOTAL
<b>Ordinary Income/Expense</b>			
<b>Income</b>			
Membership Admin/Authority	506,293.77	-1,293.77	505,000.00
Membership Water	0.00	11,458,033.62	11,458,033.62
<b>Total Income</b>	506,293.77	11,456,739.85	11,963,033.62
<b>Gross Profit</b>	506,293.77	11,456,739.85	11,963,033.62
<b>Expense</b>			
Accounting Expense	7,608.90	30,435.59	38,044.49
Admin Support Gen Manager	11,258.73	45,034.92	56,293.65
Audit Fees	0.00	11,891.78	11,891.78
Bank Service Fees	181.43	1,157.13	1,338.56
Dues and Subscriptions	15,799.00	6,981.00	22,780.00
Entry Right Rent Expense	0.00	2,500.00	2,500.00
General Manager Services	43,800.40	312,446.74	356,247.14
<b>Total General Manager</b>	43,800.40	312,446.74	356,247.14
Insurance - Property	200.00	50.00	250.00
Insurance Liability	0.00	534.75	534.75
Miscellaneous Expenses			
Job Posting Expense	235.00	940.00	1,175.00
<b>Total Miscellaneous Expenses</b>	235.00	940.00	1,175.00
<b>Office Expenses</b>			
Cleaning	1,900.00	0.00	1,900.00
Conference Room Rental	0.00	1,145.00	1,145.00
Misc Office & Operating Exp	3,507.39	1,726.33	5,233.72
Pest Control & Maintenance	650.00	0.00	650.00
Trash Service	351.58	0.00	351.58
Water Expense	442.50	0.00	442.50
<b>Total Office Expenses</b>	6,851.47	2,871.33	9,722.80
Participant Refund	0.00	6,503,713.35	6,503,713.35
<b>Professional Fees</b>			
Bond Counsel	3,835.00	4,031.69	7,866.69
Bus/Comm Manager	0.00	193,412.37	193,412.37
Communication	166,685.15	162,077.68	328,762.83
Cost Development Model	0.00	9,780.96	9,780.96
Engineering & Technical Service	0.00	229,304.57	229,304.57
Env Planning/Permits Manager	0.00	356,793.67	356,793.67
Env/Biological Services	0.00	1,257,235.06	1,257,235.06
Environmental/Project Operation	0.00	326,300.00	326,300.00
EPP Manager	0.00	153,731.72	153,731.72
Federal Government Affairs Supp	15,000.00	15,000.00	30,000.00
General Legal Counsel	50,179.25	65,581.19	115,760.44
Geotechnical Engineering	0.00	183,384.04	183,384.04
Legislative/Reg/Strategic	47,000.00	25,000.00	72,000.00
Municipal Advisor	0.00	93,195.00	93,195.00
Operations/Simulation Modeling	0.00	709,493.84	709,493.84
Organizational Assessment	23,446.56	0.00	23,446.56
Permitting & Agreements	0.00	1,107,449.72	1,107,449.72
Program Ops Manager	0.00	291,874.23	291,874.23
Project Controls	0.00	1,173,897.15	1,173,897.15
Project Delivery Advisor	2,970.00	1,035.00	4,005.00
Project Integration	0.00	2,195,036.70	2,195,036.70
Project Operations	0.00	73,250.00	73,250.00
Public Outreach & Engagement	13,183.50	8,272.00	21,455.50
Real Estate	0.00	200,457.42	200,457.42
Reservoir Operations	0.00	25,573.98	25,573.98
ROW/Land Management	0.00	13,892.28	13,892.28
Special Legal	0.00	57,454.65	57,454.65

FOR MANAGEMENT PURPOSES ONLY

**Sites Project Joint Powers Authority**  
**Profit & Loss by Class - YTD**  
January through October 2019

	Authority	Reservoir	TOTAL
Total Professional Fees	322,299.46	8,932,514.92	9,254,814.38
Website, Data, Computer Support	1,882.35	7,529.42	9,411.77
<b>Total Expense</b>	<b>410,116.74</b>	<b>15,858,600.93</b>	<b>16,268,717.67</b>
Net Ordinary Income	96,177.03	-4,401,861.08	-4,305,684.05
<b>Other Income/Expense</b>			
Other Income			
Interest Income			
Interest Income-River City	10,797.74	93,349.75	104,147.49
Interest Income-US Bank	12.72	128.59	141.31
<b>Total Interest Income</b>	<b>10,810.46</b>	<b>93,478.34</b>	<b>104,288.80</b>
<b>Total Other Income</b>	<b>10,810.46</b>	<b>93,478.34</b>	<b>104,288.80</b>
Net Other Income	10,810.46	93,478.34	104,288.80
<b>Net Income</b>	<b>106,987.49</b>	<b>-4,308,382.74</b>	<b>-4,201,395.25</b>

FOR MANAGEMENT PURPOSES ONLY





Topic: **Reservoir Committee Agenda Item 4-2**      **2019 November 21**

Subject: **Payment of Claims**

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**Requested Action:**

Consider approval of the October 2019 Payment of Claims as presented in Attachment 4-2A with supporting details provided in Attachment 4-2B.

**Detailed Description/Background:**

Attachments A incorporates invoices received by the Sites Project Authority through November 4, 2019.

Attachment B summarizes how actual costs are allocated between Authority and Reservoir Committee.

**Prior Reservoir Committee Action:**

None.

**Fiscal Impact/Funding Source:**

Total Payment of Claims is \$1,073,601.60 with \$53,614.01 of costs being assigned to the Authority and \$1,019,987.50 assigned to the Reservoir Committee.

**Staff Contact:**

Joe Trapasso

**Attachments:**

Attachment A: October 2019 Payment of Claims.

Attachment B: October 2019 Monthly Invoice Summary and Cost Allocation.

Status:	Final	Prepared:	Trapasso	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	CA/CC:	Spesert	Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Trapasso	Ref/Rev #:	10.700		
Notes:				Page:	1	of	1



**WARRANTS DRAWN AGAINST  
Sites Project Authority  
November 25, 2019**

2019 November 21 Reservoir Committee,  
Agenda Item 4-2, Attachment A

<b>Warrant Number</b>	<b>Check Date</b>	<b>Vendor</b>	<b>Invoice Description</b>	<b>Amount Paid</b>	
2011	11/15/2019	ACWA	Auto & General Liability Program	2,139.00	
2012	11/15/2019	Adept Solutions	IT & Related Services	672.20	
2013	11/15/2019	AECOM Inc.	Engineering	41,657.70	
2014	11/15/2019	Bender Rosenthal Inc.	Real Estate	7,366.37	
2015	11/15/2019	Brown and Caldwell	Project Controls	95,330.35	
2016	11/15/2019	CH2M	Operations/SIM Modeling	138,761.39	
2017	11/15/2019	Darling H2O Consulting Inc.	Organizational Assessment	7,756.17	
2018	11/15/2019	Dunn Consulting	Legislative/Regulatory/Strategic Support	8,000.00	
2019	11/15/2019	Forsythe Group LLC	EPP Manager	30,764.56	
2020	11/15/2019	Fugro USA Land, Inc.	Geotechnical Engineering Services	26,041.42	
2021	11/15/2019	Gerald E Johns	Project Operations	2,250.00	
2022	11/15/2019	HDR Engineering Inc.	Project Integration	127,614.04	
2023	11/15/2019	ICF Jones & Stokes Inc.	Env/Biological Services & Permitting	385,610.38	
2024	11/15/2019	JC Watson Inc.	GM Services	35,988.32	
2025	11/15/2019	Katz and Associates Inc.	Communications	37,952.71	
2026	11/15/2019	Kcoe Isom LLP	Accounting	3,908.50	
2027	11/15/2019	Larsen Wurzel & Associates, Inc.	Cost Development	1,574.24	
2028	11/15/2019	MR Cleaning Services	Office Cleaning	200.00	
2029	11/15/2019	Void			
2030	11/15/2019	Void			
2031	11/15/2019	MBK Engineers Inc.	Reservoir Operations	9,895.73	
2032	11/15/2019	Mt Shasta Spring Water	Office Water	73.95	
2033	11/15/2019	Perkins Coie, LLP	Special Legal Counsel	11,725.20	
2034	11/15/2019	RDJT Associates Inc.	Env/Permits Manager	17,389.44	
2035	11/15/2019	Recology Butte Colusa Counties	Office Trash Pickup	35.95	
2036	11/15/2019	Rush Personnel Services Inc.	Administrative Services	5,490.45	
2037	11/15/2019	Spesert Consulting	Bus/Comm Manager	21,557.54	
2038	11/15/2019	Stradling Yocca Carlson & Rauth	Bond Council	3,121.69	
2039	11/15/2019	The Ferguson Group	Fed Govt Affairs Support	10,000.00	
2040	11/15/2019	Trapasso Consulting Services	Pgm Ops Manager	29,033.62	
2041	11/15/2019	U.S. Bank	Misc. Expenses	461.01	
2042	11/15/2019	Young Wooldridge LLP	Legal Counsel	8,599.67	
2043	11/15/2019	Maximum Pest Control	Pest Control	130.00	
				<b>Total Amount</b>	<b><u>1,071,101.60</u></b>

THE FOREGOING CLAIM, NUMBERED 2011-2043 ARE APPLIED TO THE  
GENERAL FUND OF SITES PROJECT AUTHORITY AND ARE WARRANTS AUTHORIZED THERETO.

County of Colusa

Westside Water District

Colusa County Water District

Placer County Water Agency/City of Roseville

County of Glenn

Sacramento County Water Agency/City of Sacramento

Glenn-Colusa Irrigation District

Reclamation District No. 108

Tehama Colusa Canal Authority





November 11, 2019



Topic: Program Operations - Finance

Subject: Consultant/Vendor Invoices Received for November 2019 Board Authority and Reservoir Committee

Purpose: Summarize the review of invoices for preparation of monthly Accountant and Treasurer's reports.

The following consultant and vendor invoices were received and reviewed for inclusion in Payment of Claims for the Authority Board and Reservoir Committee consideration at their November monthly meetings.

Consultant/Vendor	Invoice #		Total	Authority Board	Reservoir Committee	Review by
	Date	Period				
<b>Board Approval Items</b>						
<b>Adept Solutions</b>	MSP-137707		\$672.20	\$134.44	\$537.76	KMS
<i>IT Related Services/Computer Equipment</i>	11/1/19	11/19				
<b>AECOM Technical Services, Inc.</b>	2000282486		\$41,657.70		\$41,657.70	LEF
<i>Engineering/Tech</i>	11/1/19	10/19				
<b>Assoc. of California Water Agencies (JPIA)</b>	Letter		\$2,139.00		\$2,139.00	JAT
<i>Auto &amp; General Liability Program</i>	9/30/19	10/19				
<b>Bender Rosenthal, Inc. (G)</b>	19037.02-6		\$7,366.37		\$7,366.37	KMS
<i>Real Estate</i>	9/30/19	9/19				
<b>Brown and Caldwell (B)</b>	17356225		\$95,330.35		\$95,330.35	JAT
<i>Project Controls</i>	11/4/19	10/19				
<b>Capital Project Strategies, LLC</b>	No Invoice					JCW
<b>CH2M Hill Engineers (Operations) (D)</b>	D3205400-006		\$138,761.39		\$138,761.39	RDT
<i>Operations / Simulation Modeling</i>	10/11/19	9/19				
<b>Darling H2O Consulting, Inc.</b>	105		\$7,756.17	\$7,756.17		JCW
<i>Organizational Assessment</i>	11/3/19	10/19				
<b>Dunn Consulting</b>	Letter		\$8,000.00	\$4,000.00	\$4,000.00	KMS
<i>Legislative/Regulatory/Strategic Support</i>	11/4/19	10/19				
<b>Forsythe Group, LLC</b>	SPA-201910		\$30,764.56		\$30,764.56	JCW
<i>EPP Manager</i>	11/5/19	10/19				
<b>Fugro (I)</b>	04.72190035-7		\$26,041.42		\$26,041.42	LEF
<i>Geotechnical Engineering Services</i>	10/31/19	10/19				
<b>Gerald (Jerry) Johns</b>	Letter		\$2,250.00		\$2,250.00	RDT
<i>Project Operations</i>	11/3/19	10/19				
<b>HDR (A)</b>	1200226874		\$127,614.04		\$127,614.04	All Agents
<i>Project Integration</i>	11/5/19	10/19				
<b>ICF International (Environmental) (E)</b>	0142071		\$205,988.34		\$205,988.34	AEF
<i>Env/Biological Services</i>	10/15/19	9/19				
<b>ICF International (Permitting) (F)</b>	0142070		\$179,622.04		\$179,622.04	AEF
<i>Permitting and Agreements</i>	10/15/19	9/19				

Topic: Program Operations - Finance

Subject: Consultant/Vendor Invoices Received for November 2019 Board Authority and Reservoir Committee

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Consultant/Vendor	Invoice #		Total	Authority Board	Reservoir Committee	Review by
	Date	Period				
<b>J.C. Watson, Inc.</b> <i>General Manager Services</i>	SPA-051 11/2/19	10/19	\$35,988.32	\$5,205.53	\$30,782.79	JRT/GA
<b>Katz &amp; Associates (C)</b> <i>Communications</i>	413384 10/15/19	9/19	\$37,952.71	\$22,771.63	\$15,181.08	KMS
<b>K-Coe Isom, LLP</b> <i>Accounting</i>	KCO65857 10/31/19	10/19	\$3,908.50	\$781.70	\$3,126.80	JAT
<b>Larsen Wurzel &amp; Associates, Inc.</b> <i>Cost Development</i>	1609000-0919 10/7/19	9/19	\$1,574.24		\$1,574.24	JAT
<b>M.R. Cleaning Service</b> <i>Office Cleaning</i>	1226 11/3/19	10/19	\$200.00	\$200.00		KMS
<b>Maximum Pest Control</b> <i>Pest Spraying</i>	49504 9/26/19	9/19	\$65.00	\$130.00		KMS
<b>Maximum Pest Control</b> <i>Pest Spraying</i>	49726 10/30/19	10/19	\$65.00			KMS
<b>MBK Engineers</b> <i>Reservoir Operations</i>	19-09-4941.0 10/16/19	9/19	\$9,895.73		\$9,895.73	RDT
<b>Montague DeRose &amp; Associates, LLC</b> <i>Municipal Advisor</i>	No Invoice					JCW
<b>MT Shasta Water</b> <i>Office Water</i>	435669 10/8/19	10/19	\$41.60	\$73.95		KMS
<b>MT Shasta Water</b> <i>Office Water</i>	441890 10/29/19	10/19	\$32.35			KMS
<b>Perkins Coie, LLP</b> <i>Special Legal</i>	6087934 10/29/19	9/19	\$11,725.20		\$11,725.20	AEF
<b>RDJT Associates, Inc.</b> <i>Env Planning/ Permits Manager</i>	11-2019 11/5/19	10/19	\$17,389.44		\$17,389.44	JCW
<b>Recology Butte Colusa Counties</b> <i>Office Trash Pickup</i>	36543809 10/31/19	10/19	\$35.95	\$35.95		KMS
<b>Rush Personnel</b> <i>Yolanda Tirado Services</i>	IVC000000132559 10/21/19	10/19	\$1,411.20	\$1,098.09	\$4,392.36	KMS

Topic: Program Operations - Finance

**Subject: Consultant/Vendor Invoices Received for November 2019 Board Authority and Reservoir Committee**

Purpose: Summarize the review of invoices for preparation of monthly Accountant and Treasurer's reports.

The following consultant and vendor invoices were received and reviewed for inclusion in Payment of Claims for the Authority Board and Reservoir Committee consideration at their November monthly meetings.

Consultant/Vendor	Invoice #		Total	Authority Board	Reservoir Committee	Review by
	Date	Period				
<b>Rush Personnel</b> <i>Yolanda Tirado Services</i>	IVC000000132560 10/21/19	10/19	\$1,411.20			KMS
<b>Rush Personnel</b> <i>Yolanda Tirado Services</i>	IVC000000132917 11/5/19	10/19	\$1,256.85			KMS
<b>Rush Personnel</b> <i>Yolanda Tirado Services</i>	IVC000000132918 11/5/19	11/19	\$1,411.20			KMS
<b>Spesert Consulting</b> <i>Bus/Communications Manager</i>	11-19 11/5/19	10/19	\$21,557.54		\$21,557.54	JCW
<b>Stradling, Yocca, Carlson &amp; Rauth</b> <i>Bond Counsel</i>	358705-0001 10/24/19	9/19	\$3,121.69		\$3,121.69	JCW
<b>The Ferguson Group</b> <i>Federal Government Affairs Support</i>	1019154 10/1/19	10/19	\$10,000.00	\$5,000.00	\$5,000.00	JAT
<b>Trapasso Consulting Services</b> <i>Program Operations Manager</i>	SPA 17-25 11/2/19	10/19	\$29,033.62		\$29,033.62	JCW
<b>U.S. Bank - Credit Card</b> <i>Misc. Expenses</i>	Online 11/1 11/1/19	10/19	\$461.01	\$378.38	\$82.63	KMS
<b>Wiseman Consulting Group</b> <i>ROW/Land Management</i>	No Invoice					KMS
<b>Young Wooldridge, Law Offices, LLP</b> <i>Legal Counsel</i>	61194 10/31/19	10/19	\$8,599.67	\$6,048.17	\$2,551.50	JCW
<b>Advance Check Approvals</b>						
<b>Kannes, Karen &amp; Charlie, LLC</b> <i>Right of Entry Permit</i>	APN 012-160-047 10/11/19	10/19	\$2,500.00		\$2,500.00	KMS

<b>\$ Month's Total</b>	<b>\$1,073,601.60</b>	<b>\$53,614.01</b>	<b>\$1,019,987.59</b>
Board Approvals	\$1,071,101.60	\$53,614.01	\$1,017,487.59
Advance Approvals	\$2,500.00		\$2,500.00

Notes: \*





Topic: **Reservoir Committee Agenda Item 4-3**      **2019 November 21**

Subject: **Contract Amendment for Professional Services (AECOM)**

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**Requested Action:**

Consider approval of a recommendation to the Sites Project Authority to approve a modification to the AECOM contract period of performance by extending the contract from December 31, 2019 through June 30, 2020 with no change in cost.

**Detailed Description/Background:**

Until the procurement and task orders for engineering services are approved and should the need arise for engineering design-related work be needed after December 31, 2019, extending the AECOM contract ensures that such work could commence expeditiously to predominately support deliverables needed by other service area providers; such as environmental (Service Area E), permitting (Service Area F) and Real Estate (Service Area G).

The proposed amendment would extend the contract period of performance from December 31, 2019 through June 30, 2020. There is no change to the AECOM not to exceed contract value of \$2,533,454.

**Prior Reservoir Committee Action:**

At the July 19, 2019 meeting, the Reservoir Committee agreed to recommend to the Authority Board to extend the AECOM contract from July 31, 2019 through December 31, 2019.

At the February 21, 2019 meeting, the Reservoir Committee agreed to recommend to the Authority Board to extend the AECOM contract from March 31, 2019 through July 31, 2019.

At the October 18, 2018 meeting, the Reservoir Committee agreed to postpone or cancel the evaluation of submittals for Service Area H (Engineering Services).

**Fiscal Impact/Funding Source:**

No change to existing budget.

**Staff Contact:**

Joe Trapasso

**Attachments:**

Attachment A – AECOM Contract Amendment 12

Status:	<b>Final</b>	Preparer:	<b>Trapasso</b>	Phase:	<b>2</b>	Version:	<b>A</b>
Purpose:	<b>Sites Reservoir Committee Staff Report</b>	QA/QC:	<b>Watson</b>	Date:	<b>2019 November 21</b>		
Caveat:	<b>Informational</b>	Authority Agent:	<b>Trapasso</b>	Reffile #:	<b>12.221-210.018</b>		
Notes:				Page:	<b>1</b>	of	<b>1</b>







**SITES PROJECT AUTHORITY  
CONTRACT AMENDMENT**

**Consultant: AECOM Technical Services, Inc.**

**Contract:**

Sites Project Authority Consulting Agreement with AECOM dated November 2, 2015

**Contract Amendment No. 12:**

The period of performance of the AECOM contract is extended from December 31, 2019 through June 30, 2020.

**Budget:**

The authorized AECOM not to exceed contract budget ceiling is not changed and remains as \$2,533,454.

**AECOM**

**Sites Project Authority**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date





Topic: Reservoir Committee Agenda Item 4-4 2019 November 21

Subject: Contract Modification for Professional Services (Montague DeRose and Associates)

**Requested Action:**

Consider approval of a recommendation the Sites Project Authority consider approving an amendment to the Montague DeRose and Associates (MDA) contract to expand the scope of work and increase the contract amount from \$600,000 to \$770,000.

**Detailed Description/Background:**

Additional scope and budget are required to address upcoming Phase 2 (2019) project municipal advisor services such as support to the development for the financial model and affordability report, and Plan of Financing.

The proposed amendment scope of work applies the existing MDA Phase 1 municipal advisor scope of work to Phase 2 (2019) activities and increases the budget to initiate these Phase 2 (2019) work activities.

The approved Phase 2 (2019) Work Plan included additional budget to allow MDA to support these activities.

**Prior Reservoir Committee Action:**

Amendment No. 4 – included additional Phase 2 (2019) municipal advisor scope and budget to their contract with a contract ceiling increase from \$520,000 to \$600,000 and was signed on August 26, 2019.

Amendment No. 3 - included additional Phase 1 Critical Task scope of work and budget to their contract with a contract ceiling increase from \$480,000 to \$520,000 and was signed March 17, 2019.

Amendment No. 2 - included additional Phase 1 Critical Task scope of work and budget to their contract with a contract ceiling increase from \$400,000 to \$480,000 and was signed October 11, 2018.

Amendment No. 1 - included additional Phase 1 Critical Task scope of work and budget to their contract with a contract ceiling increase from \$75,000 to \$400,000 and was signed August 9, 2018.

Contract – was approved March 19, 2018.

**Fiscal Impact/Funding Source:**

Status:	Final	Prepared:	Trapasso	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	CA/CC:	Watson	Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Trapasso	Ref/ file #:	12.221-210.018		
Notes:				Page:	1	of	2

No change to existing Phase 2 (2019) approved budget as this scope and budget were included.

**Staff Contact:**

Joe Trapasso

**Attachments:**

Attachment A – Contract Amendment No. 5.



## SITES PROJECT AUTHORITY CONTRACT AMENDMENT No. 5

**Consultant: Montague DeRose and Associates**

**Contract:**

Sites Project Authority Professional Services Contract, March 19, 2018.

**Contract Amendment No. 5**

Contract Amendment No. 5 modifies the Montague DeRose and Associates Contract to include additional scope and budget.

**Scope of Work**

This amendment applies the Montague DeRose Phase 1 scope of work activities to Phase 2 (2019) activities for support to the Participation Agreements and Plan of Financing. Activities include:

- Continue work on the enterprise financial model to support the affordability analysis and reflect the contemplated revisions to Phase 2 (2020/2021) plan of finance.
- Serve as the liaison to potential bank lenders in the anticipation of the need for a bank line of credit for Phase 2 (2020/2021).
- Available to assist the Authority Board and Reservoir Committee with financial and project credit analysis in connection with the evaluation of changes to participation that may result as part of the end of Phase 2 (2019) rebalancing process.

**Contract Budget**

The authorized contract not to exceed budget amount is increased from \$600,000 to \$770,000 to perform the Phase 2 (2019) scope activities.

**Period of Performance**

The period of performance of the Contract is not changed and remains as March 31, 2022.

**Montague DeRose**

\_\_\_\_\_  
Signature

Doug Montague  
Printed Name

\_\_\_\_\_  
Date

**Sites Project Authority**

\_\_\_\_\_  
Signature

Jim Watson  
Printed Name

\_\_\_\_\_  
Date





Topic: **Reservoir Committee Agenda Item 4-5**      **2019 November 21**

Subject: **2019 Work Plan Revision Update**

---

**Requested Action:**

Discussion and possible direction of the revised Phase 2 (2019) Work Plan supporting a revised completion date from December 31, 2019 to June 30, 2020.

**Background:**

A joint Authority Board and Reservoir Committee workshop was held on November 15, 2019 providing a project status update related to operations, permitting, and repayment. A schedule was presented (Attachment A) and feedback was requested at the November Reservoir Committee meeting on next steps for developing the revised Phase 2 (2019) Work Plan.

**Prior Reservoir Committee Action:**

October 18, 2019: The Reservoir Committee directed staff to extend the Phase 2 (2019) work plan by "180 days" with no additional funding provided by the Reservoir Committee. The revised completion date is proposed to be changed from December 31, 2019 to June 30, 2020.

September 20, 2019: The Reservoir Committee approved the extension of the Phase 2 (2019) Participation Agreement by three months at no additional cost to Participants and directed staff to develop a work plan to accommodate this extension.

June 20, 2019: The Reservoir Committee approved their portion of the reduced, revised work plan and Exhibit B for inclusion in the Phase 2 (2019) Participation Agreement.

May 20, 2019: The Reservoir Committee considered approval of a reduced work plan based on revised revenue assumptions for Phase 2 (2019) and deferred approval of the revised plan back to the Budget and Finance Work Group for further evaluation.

November 16, 2018: The Reservoir Committee approved their portion of the work plan and Exhibit B for inclusion in the Participation Agreement.

November 19, 2018: The Authority Board approved the Final Work Plan and Budget.

July 16, 2018: The Authority Board approved the "Workplan and Monthly Cashflow Analysis for Phase 2 for the Sites Reservoir Project" with its release solely for the following uses:

- 1. Development of the Phase 2 Finance Plan.

Status:	<b>Draft</b>	Preparer:	<b>Robinette</b>	Phase:	<b>2</b>	Version:	<b>A</b>
Purpose:	<b>Sites Reservoir Committee Staff Report</b>	QA/QC:	<b>Zuber</b>	Date:	<b>2019 November 21</b>		
Caveat:	<b>Informational</b>	Authority Agent:	<b>Trapasso</b>	Ref/File #:	<b>12.221</b>		
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2. Developing an Exhibit to include in the Phase 2 Reservoir Project Agreement.
3. Developing an Exhibit to include in the Phase 2 Procurement Request for Qualifications.
4. Developing the FY2019 Budget.

**Fiscal Impact/Funding Source:**

Not yet determined.

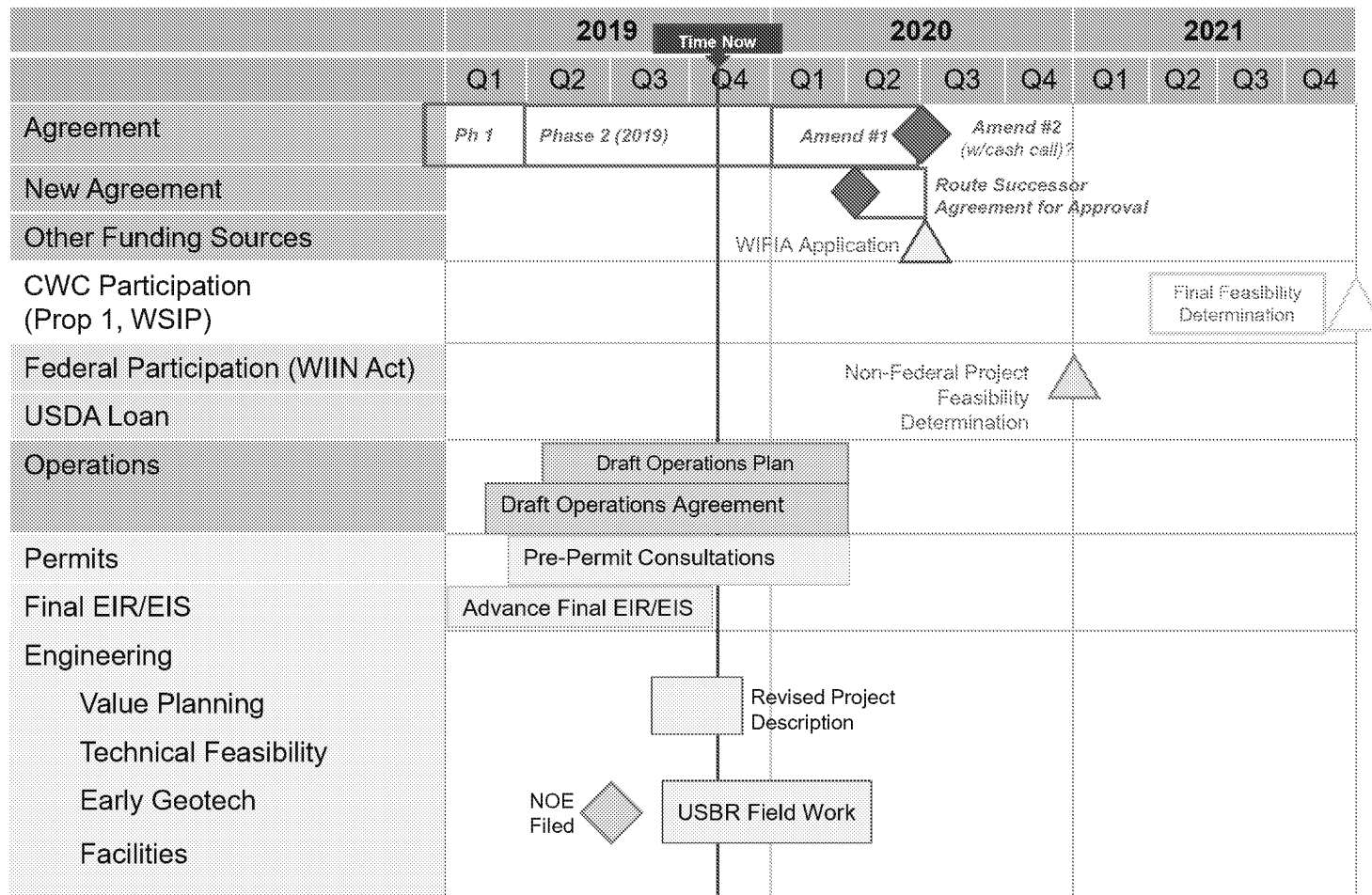
**Staff Contact:**

Joe Trapasso

**Attachments:**

Attachment A: Project Schedule Graphic.

# Where does the Project go from here?



Joint Workshop, 2019 Nov. 15 - Draft, Subject to Change





Topic: **Reservoir Committee Agenda Item 5-1**      **2019 November 21**

Subject: **First Amendment to the Phase 2 (2019) Reservoir Project Agreement**

---

**Requested Action:**

Consider approval of a recommendation to the Sites Project Authority to approve the "First Amendment to [the] 2019 Reservoir Project Agreement by and Among [the] Sites project Authority and the Project Agreement Members Listed Herein, dated as of January 1, 2020" (2019 Agreement) as presented in Attachment A.

**Detailed Description/Background:**

The need to amend this 2019 Agreement occurred when the Reservoir Committee approved a no-cost extension of time. The amendment is included as Attachment A to this Staff Report. For it to become effective, at least 75% of the total weighted vote needs to be in the affirmative.

**Prior Reservoir Committee Action:**

At their October 18, 2019 meeting, the Reservoir Committee approved a no-cost extension of time to complete activities defined in the Agreement's work plan (aka Exhibit B). Their approval extends the Agreement's period of performance from March 31, 2020 through June 30, 2020.

At their September 20, 2019 meeting, the Reservoir Committee approved a no-cost extension of time to complete activities defined in the Agreement's work plan (aka Exhibit B). Their approval extends the Agreement's period of performance December 31, 2019 through March 31, 2020.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Jim Watson/Joe Trapasso

**Attachments:**

Attachment A – First Amendment to [the] 2019 Reservoir Project Agreement by and Among [the] Sites project Authority and the Project Agreement Members Listed Herein, dated as of January 1, 2020.

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Status:	Working draft	Prepared:	Watson	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	QA/QC:		Date:	2019 November 21		
Caveat:	Informational	Authority Agent:	Trapasso	Ref/file #:	12.210-201		
Notes:				Page:	1	of	1



FIRST AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT

BY AND AMONG  
SITES PROJECT AUTHORITY

and

THE PROJECT AGREEMENT MEMBERS LISTED HEREIN

Dated as of January 1, 2020

THIS FIRST AMENDMENT TO RESERVOIR PROJECT AGREEMENT (this “First Amendment”), dated as of January 1, 2020, by and among SITES PROJECT AUTHORITY, a joint powers authority duly organized and existing under the laws of the State of California (the “Authority”), and the project agreement members listed in the Original Agreement referenced below (the “Project Agreement Members”) and amends that certain 2019 Reservoir Project Agreement dated as of April 1, 2019 (the “Original Agreement”), by and among the Authority and the Project Agreement Members;

WITNESSETH:

WHEREAS, Authority and the Project Agreement Members have determined to extend the term of the Original Agreement to June 30, 2020; and

WHEREAS, under Section 11 of the Original Agreement, the Original Agreement may be amended by a writing executed by the Authority and at least 75% of the total weighted vote as provided in Subsection 3(g) of the then-current Committee members; and

WHEREAS, all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and the entering into of this First Amendment do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and enter into this First Amendment;

NOW, THEREFORE, THIS FIRST AMENDMENT WITNESSETH, the Authority and the Project Agreement Members agree, as follows:

ARTICLE I

DEFINITIONS

Section 1.01. **Definitions.** All capitalized terms not otherwise defined herein shall have the meaning set forth in the Original Agreement.

ARTICLE II

AMENDMENTS TO 209 ORIGINAL AGREEMENT

Section 2.01. **Amendments to Section 8(b) of the Original Agreement.**

(a) The reference in Section 8(b) of the Original Agreement to December 31, 2019 shall be changes to June 30, 2020.

Section 2.02. **Work Plan**



(a) The 2019 Work Plan attached to the Original Agreement as Exhibit B has been amended on \_\_\_\_\_, 2019. A copy of such amended 2019 Work Plan is attached hereto as Exhibit A.

### ARTICLE III

#### MISCELLANEOUS

Section 3.01. **Effectiveness of Original Agreement.** Except as expressly amended by this First Amendment, the Original Agreement is hereby ratified and confirmed and shall continue in full force and effect in accordance with the terms and provisions thereof. The amendments set forth in this First Amendment shall be incorporated as part of the Original Agreement upon their effectiveness in accordance with Section 11 of the Original Agreement.

Section 3.02. **Execution in Several Counterparts.** This First Amendment may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the Authority and the Project Agreement Members shall preserve undestroyed, shall together constitute but one and the same instrument.

Section 3.03. **Laws Governing First Amendment.** The effect and meaning of this First Amendment and the rights of all parties hereunder shall be governed by, and construed according to, the laws of the State.

IN WITNESS WHEREOF, the Authority and Project Agreement Members hereto, pursuant to resolutions duly and regularly adopted by their respective governing bodies, have caused their names to be affixed by their proper and respective officers on the date shown below:

Dated: \_\_\_\_\_

SITES PROJECT AUTHORITY

By: \_\_\_\_\_

Name:

Title:

[PROJECT AGREEMENT MEMBER]

Dated: \_\_\_\_\_

\_\_\_\_\_

(Authority & Project Agreement Member)

By: \_\_\_\_\_

Name:

Title:





Topic: **Reservoir Committee Agenda Item 6-1**      **2019 November 21**

Subject: **CDFW 60-day Consultation**

---

**Requested Action:**

No action requested. Discussion and possible direction to staff regarding consultation discussion with the California Department of Fish and Wildlife (CDFW).

**Detailed Description/Background:**

The Sites Project staff continue to work through items identified in CDFW's comment letter to the Draft Environmental Impact Report / Environmental Impact Statement. Two additional Technical Team meetings have been held since the October Reservoir Committee and Authority Board meetings. These two meetings focused on how best to represent potential operational parameters in the Calsim modeling. One Executive Team meeting was also held in mid-November.

The Sites Project Team continues working to prepare a revised operations scenario along with a science, adaptive management and mitigation framework that would form the basis of upcoming permit applications.

**Prior Reservoir Committee Action:**

None.

**Fiscal Impact/Funding Source:**

None.

**Staff Contact:**

Ali Forsythe

**Attachments:**

None.

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Status:	Draft	Prepared:	Forsythe	Phase:	2	Version:	A
Purpose:	Sites Reservoir Committee Staff Report	QA/QC:	Watson	Date:	2019 November 21		
Content:	Informational	Authority Agent:	Forsythe	Ref/file #:			
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# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

## NOVEMBER 15TH



# Purpose of Workshop

- Provide status update for participants' use in upcoming key decisions
  - Operations
  - Value Planning
  - Repayment
- Discuss next steps for the Project

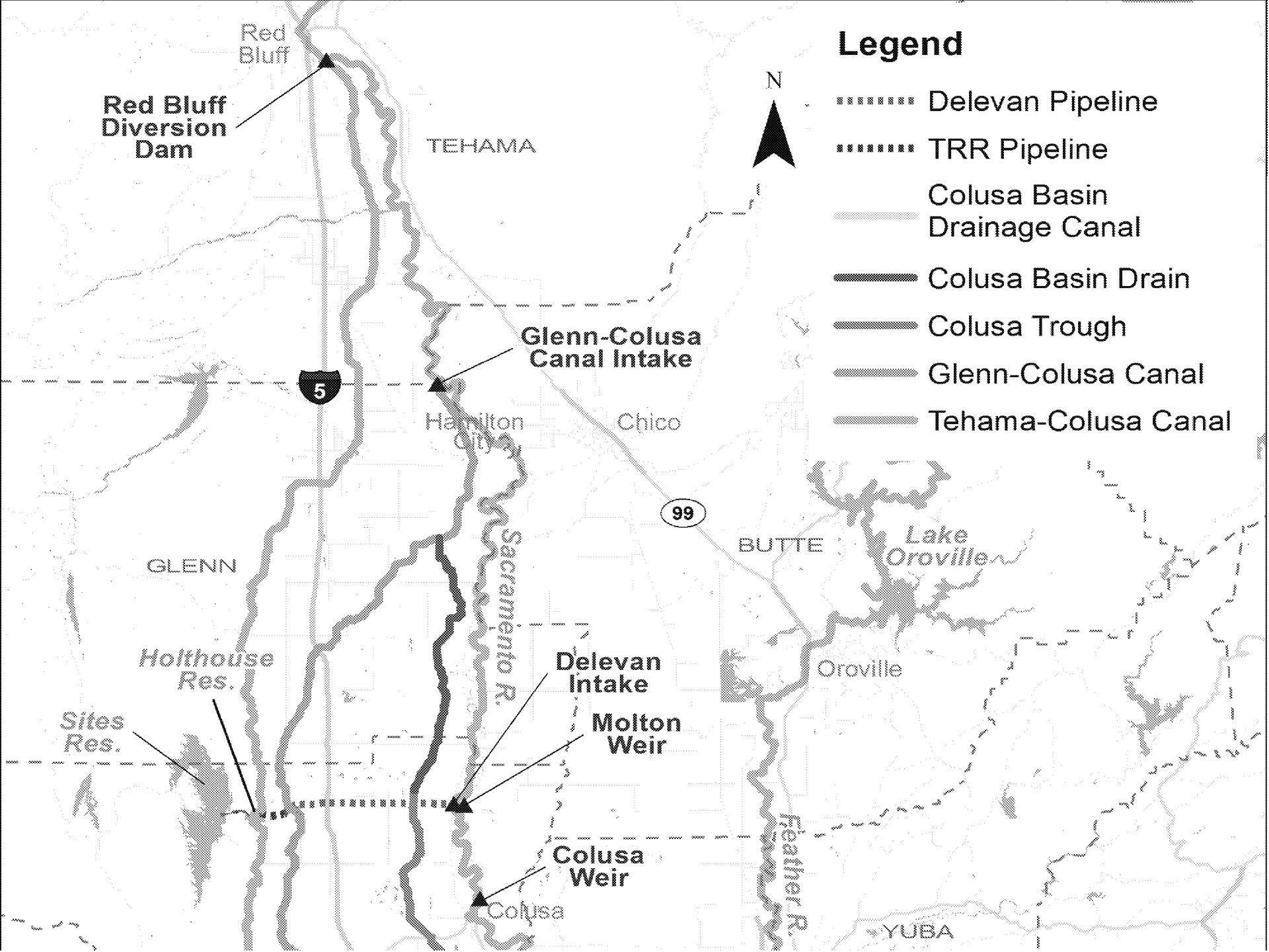


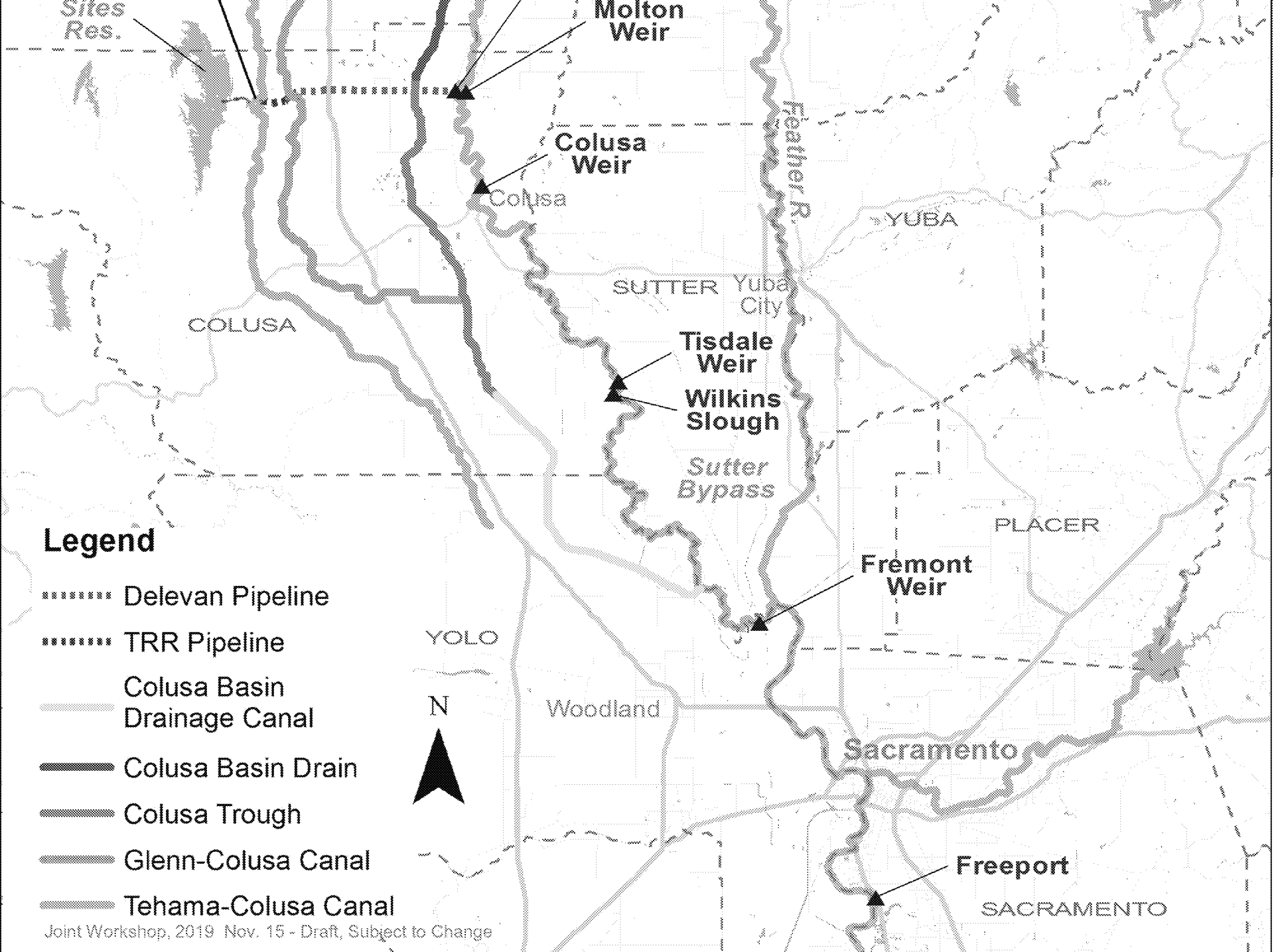
# OPERATIONAL CONSIDERATIONS STATUS



# Key Operational Activities

- Continued pre-application consultation discussions with CDFW on both construction and operational effects of the project to listed and fully-protected species
- Continued development of analysis tools for daily operations, bypass criteria, floodplain inundation and other operational effects
- Continued discussions with Reclamation on within year exchanges





**Legend**

- ..... Delevan Pipeline
- ..... TRR Pipeline
- Colusa Basin Drainage Canal
- Colusa Basin Drain
- Colusa Trough
- Glenn-Colusa Canal
- Tehama-Colusa Canal

Joint Workshop, 2019 Nov. 15 - Draft, Subject to Change

# Key Operational Considerations

- Wilkins Slough Bypass Flow
  - Indicator of in-river survival for juvenile salmonids
- Fremont Weir Notch
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Flows into the Sutter Bypass System
  - Protects bypass / floodplain rearing habitat and food production for juvenile salmonids
- Freeport Bypass Flow
  - Indicator of Delta survival for juvenile salmonids
- Net Delta Outflow Index (NDOI)
  - Spring NDOI directly correlates to fall longfin smelt population

# Recent Operations Modeling

- Recent modeling included combination of Calsim and Daily Model analyses conducted at a screening level
- Additional modeling will be needed to:
  - Determine effects to species that result from the recent operational scenarios (e.g., temperature, life cycle, Delta hydrodynamics, etc.)
  - Reflect Reclamation as a cooperating partner only
  - Incorporate ROC on LTO and new requirements from the NMFS Biological Opinion in the baseline



# Summary of Operational Scenarios Currently Being Discussed

Criteria	8,000 Wilkins with WaterFix Criteria	Scaled Diversion with WaterFix Criteria	Potential Revised Project – Sept 2019
Reservoir Size	1.5 MAF	1.5 MAF	1.5 MAF
Delevan Intake	Not included; Outlet only facility	Not included; Outlet only facility	Not included; Outlet only facility
Wilkins Slough Bypass Flow	8,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion	8,000 cfs April/May; all other times, 5,000 cfs; Scaled diversion
Fremont Weir Notch	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative	Prioritize the Fremont Weir Notch preferred alternative
Flows into the Sutter Bypass System	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale	Consider frequency and duration of spills at Moulton, Colusa, and Tisdale
Freeport Bypass Flow	Modeled WaterFix Criteria (applied daily)	Modeled WaterFix Criteria (applied daily)	15,000 cfs Jan-March; 13,000 cfs in December; 11,000 cfs all other times (monthly average)
Net Delta Outflow Index (NDOI) Prior to Project Diversions	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	Modeled WaterFix Criteria (using >44,500 cfs between March and May as a surrogate)	None; Minor changes in X2; Mitigation proposed
Total Deliveries (Average / Dry Year)	~220 TAF ~302 TAF	~234 TAF ~312 TAF	~332 TAF ~477 TAF

Potential Deliveries Range from 200,000 AF to 250,000 AF



# Major Permitting / Operations Challenges

- Challenges:
  - Magnitude of anticipated temperature benefit above Red Bluff need to be reassessed due to revised operational criteria
  - Discussions with Reclamation and analysis of water rights considerations on within year exchanges in Shasta are on-going
  - USFWS has announced it is updating the status review for longfin smelt and may propose it for listing under the Federal ESA but already consulting under CESA
  - Future Delta Conveyance and Voluntary Agreements may effect Sites operations and diversions but working to account for these in revised operational criteria

# Major Permitting / Operations Opportunities

- Opportunities:
  - Delta Conveyance, Voluntary Agreements, Eco Restore, and other projects present opportunities for improved fisheries conditions and for collaboration on science, monitoring and mitigation
  - Sites is anticipated to perform well and provide more water supply and ecosystem benefits in future climate change scenarios

# Key Takeaways

- Permittable operations, reflecting current permitting discussions, may result in a range from 200,000 AF to 250,000 AF average annual deliveries at Holthouse
- 200,000 AF average annual deliveries at Holthouse should be viewed as more of a "floor" -- additional science, monitoring and implementation of other actions (Eco Restore, VAs, etc) could increase this
- Additional detailed modeling on revised operational scenarios is needed to reduce uncertainties and refine analyses
- Additional discussions is needed with the regulatory agencies to develop and refine operational parameters to ensure they are implementable and meet the intended biological outcome

# VALUE PLANNING STATUS



# Overview

- Ad hoc representatives from the Reservoir Committee and Authority Board met on October 2 and 14, 2019 to discuss approaches that could potentially lower the cost of the project. AECOM and others conducted initial analyses on these approaches.
- Several facility modifications were identified, and nine alternative key facility layouts were developed. Further evaluation of these is needed.
- Appraisal level costs were developed in October 2015 dollars and escalated to 2018 dollars. These costs ranged from \$3.4 to \$4.0 billion (excluding risk management and financing costs) versus the \$5.2 billion for Alternative D.
- Authority agents developed comments on the appraisal evaluation but did not identify any “fatal flaws”.

# Value Planning Alternatives – Comparison

Features	Value Planning Alternatives								
	1	2	3	4a	4b	5a	5b	6a	6b
Cost (\$billions)	\$4.0B	\$4.0B	\$3.9B	\$3.8B	\$3.9B	\$3.5B	\$3.9B	\$3.4B	\$3.6B
Savings from 1.8 MAF Alternative D	\$1.2B	\$1.2B	\$1.3B	\$1.4B	\$1.3B	\$1.7B	\$1.3B	\$1.8B	\$1.6B
1.5 MAF Reservoir	.	.	.	.	.	.	.	.	.
1.3 MAF Reservoir									.
Funks/Sites PGP	.	.		.	.	.	.		
Replace Sites PGP with Two Smaller Plants			.					.	.
Delevan Canal/Pipeline Release	.	.	.	.	.				
Dunnigan Canal to CBD Release						.		.	
Dunnigan to River Release							.		.
Multi-Span Bridge	.		.	.	.	.	.	.	.
South Road to Lodoga		.							
South Road to Residents	.		.	.	.	.	.	.	.
Rockfill Embankment Dam	.	.	.			.	.		
Earthfill Dam				.				.	.
Hardfill Dam					.				

CBD = Colusa Basin Drain

MAF = million acre feet

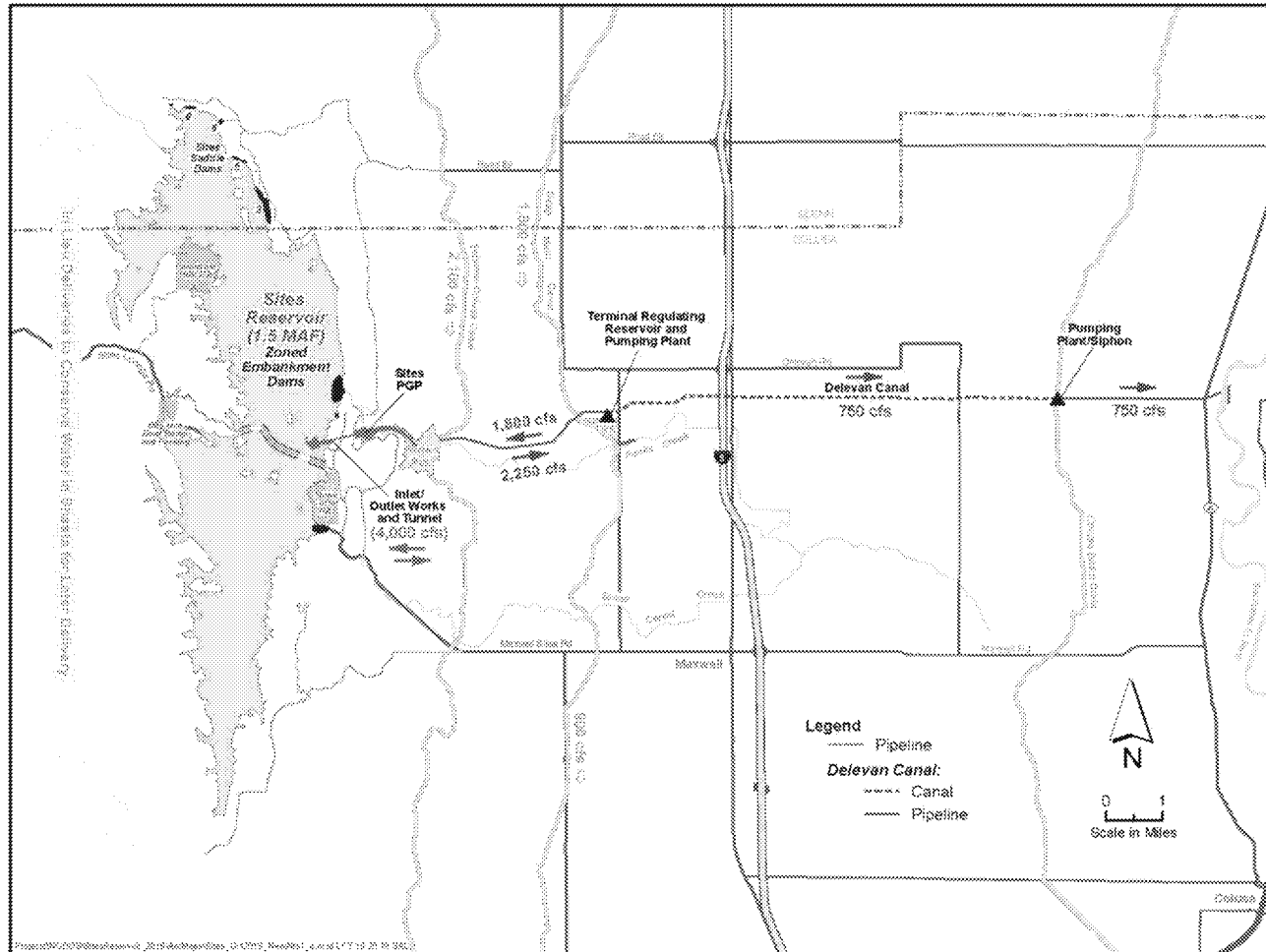
PGP = Pumping/Generating Plant

TCRR = Tehama-Colusa Regulating Reservoir

15 TRR = Terminal Regulating Reservoir



**Alternative 1 – Reduce Reservoir to 1.5 MAF, change bridge to multi-span bridge, and substitute a release only canal for the single Delevan pipeline from Colusa Basin Drain to TRR near TCC - \$4.0B. The other features are generally consistent with Alternative D - \$5.2B**



**Figure 1**



# Alternative 2 – Similar to Alternative 1 but uses the southern road alignment to Lodoga in place of the bridge - \$4.0B

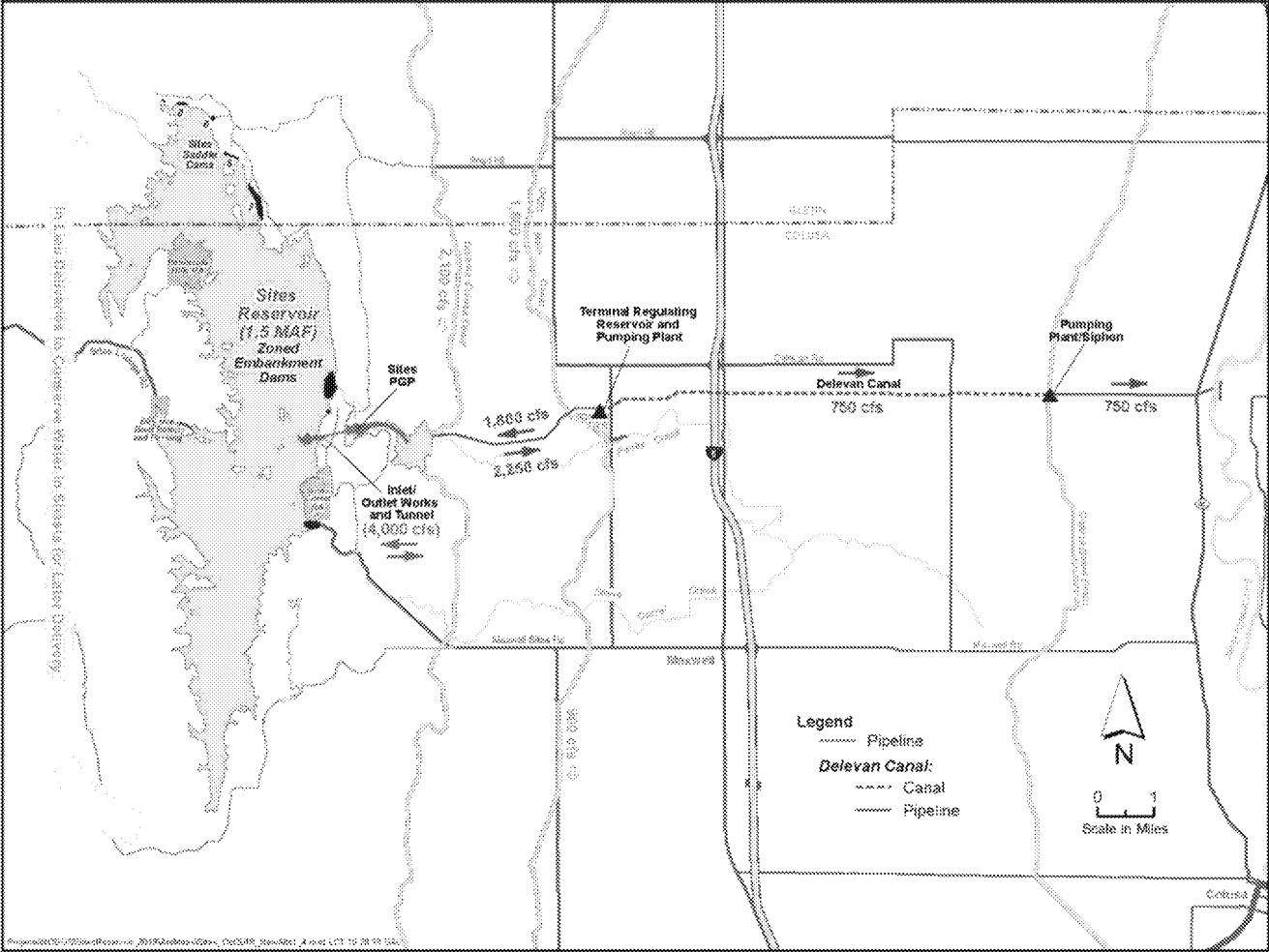


Figure 2

# Alternative 3 – Similar to Alternative 1, but replaces Sites PGP with the Tehama-Colusa Regulating Reservoir and PP and modified TRR - \$3.9B

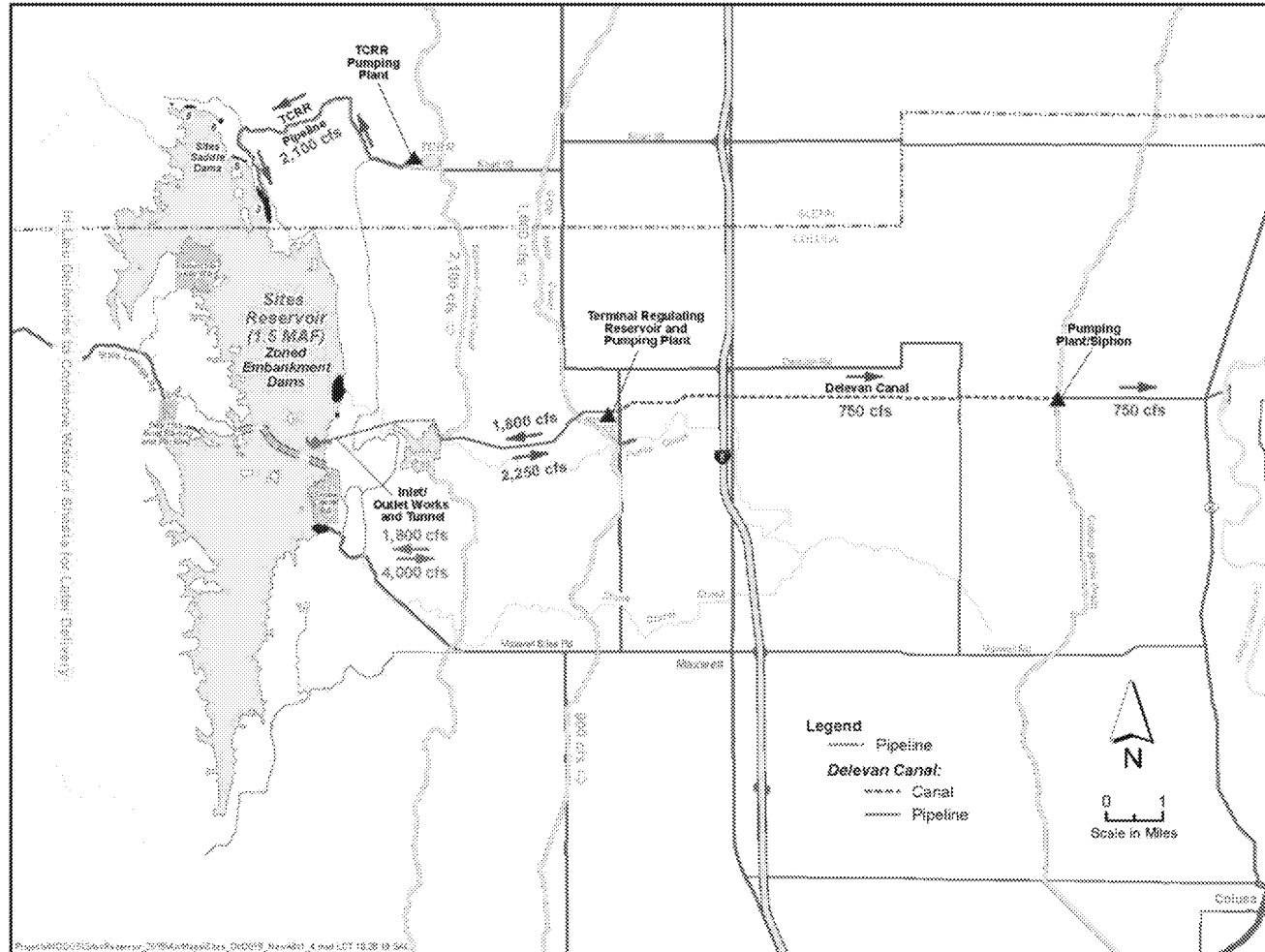


Figure 3

# Alternative 4a – Same as Alternative 1 but replaces the zoned rockfill embankment dam with an earthfill dam – \$3.8B

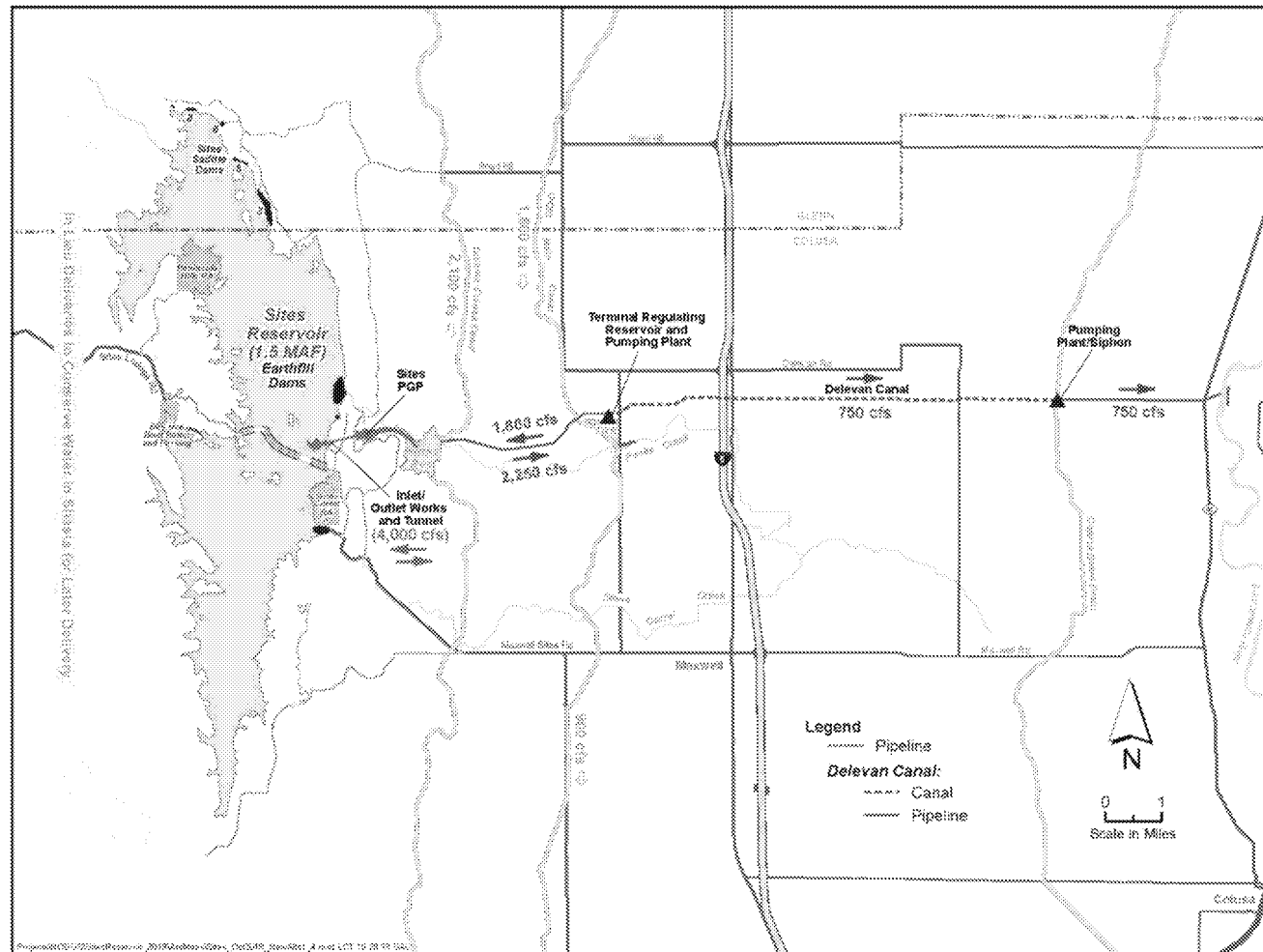


Figure 4a

# Alternative 4b – Same as Alternative 1 but replaces the zoned rockfill embankment dam with a hardfill dam – \$3.9B

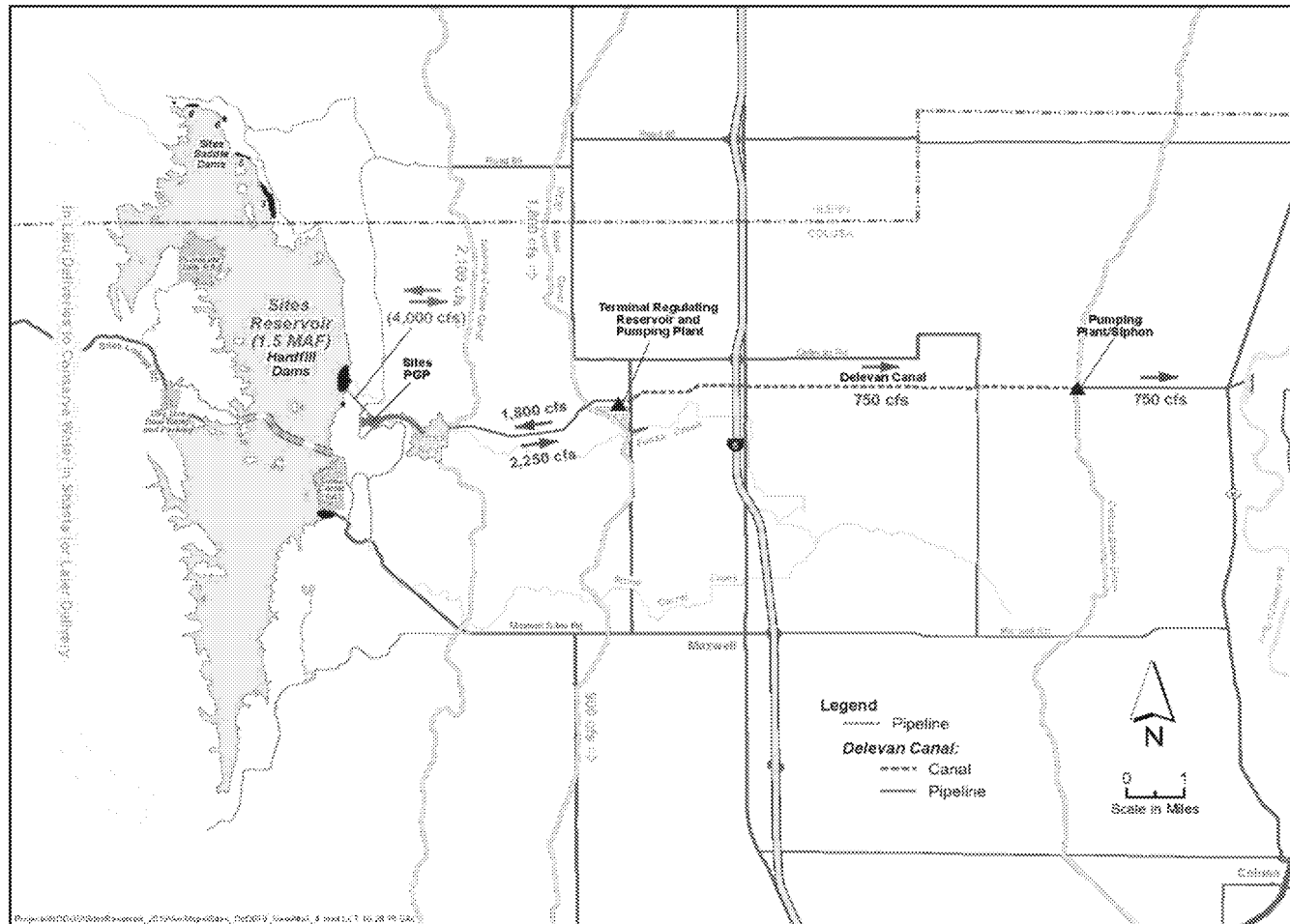


Figure 4b

# Alternative 5a – Similar to Alt 1, but replaces Delevan Canal/ Pipeline with pipeline/canal release from the Dunnigan Canal to the Colusa Basin Drain, thence through the lower portion of the Colusa Basis Drain to the Sacramento River - \$3.5B

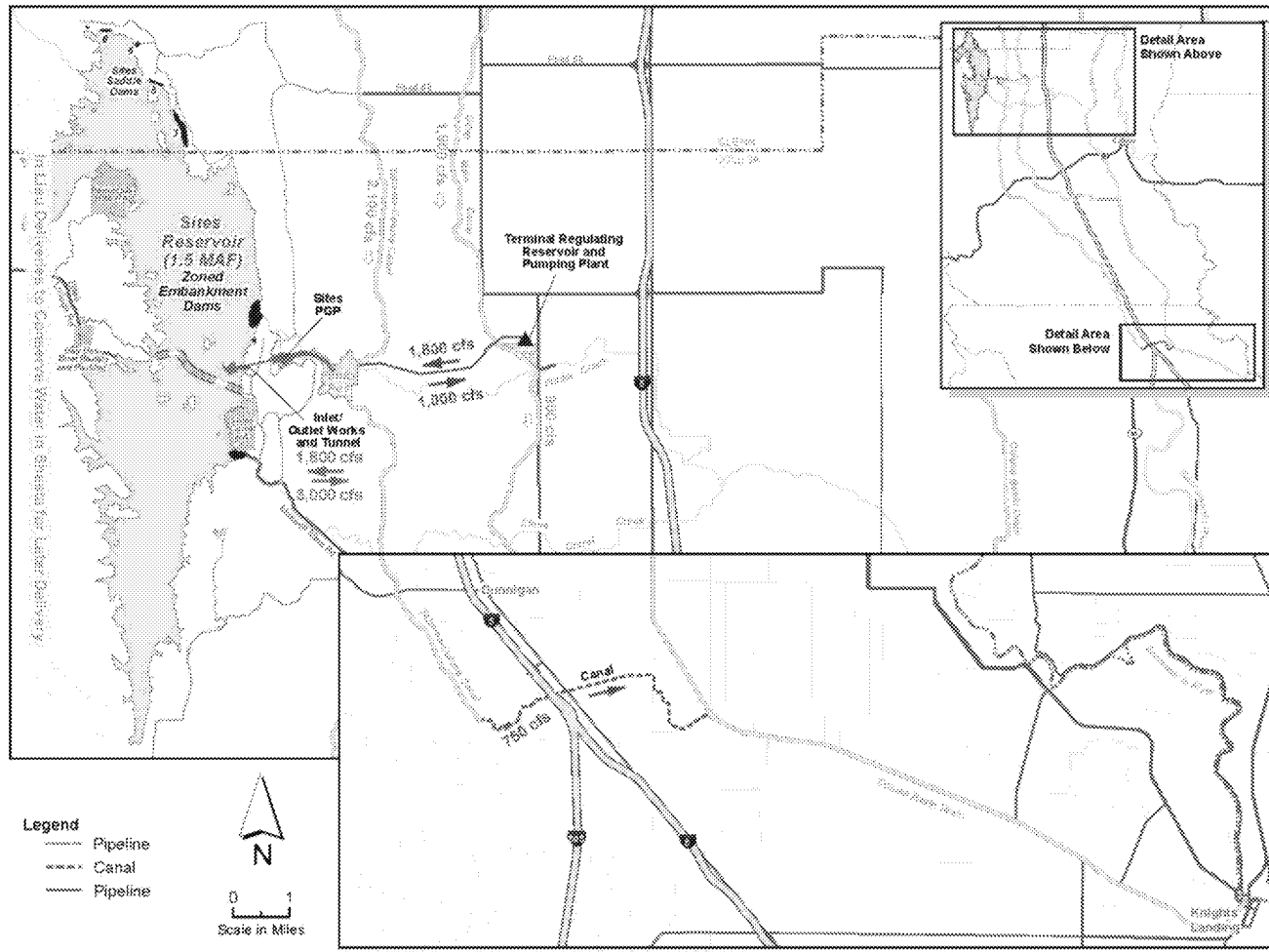


Figure 5a

# Alternative 5b - Similar to Alternative 5a but releases water from Dunnigan Canal to the Sacramento River via a canal, siphon and pumping plant - \$3.9B

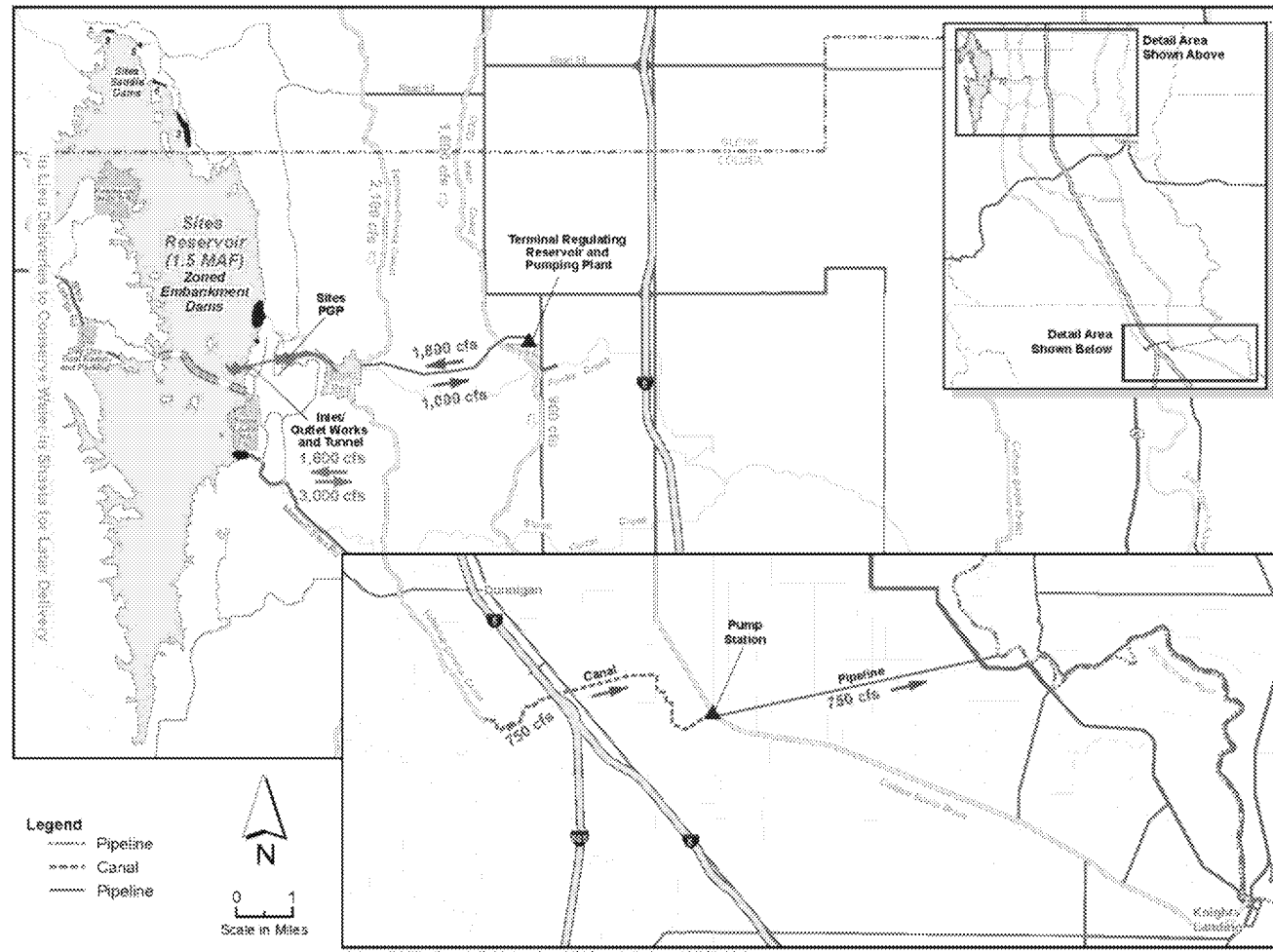


Figure 5b

# Alternative 6a – Lowest cost combination of Alt 3, 4 and 5a – replace Sites PGP with 2 smaller facilities, Dunnigan release to the CBD, and an earthfill dam - \$3.4B

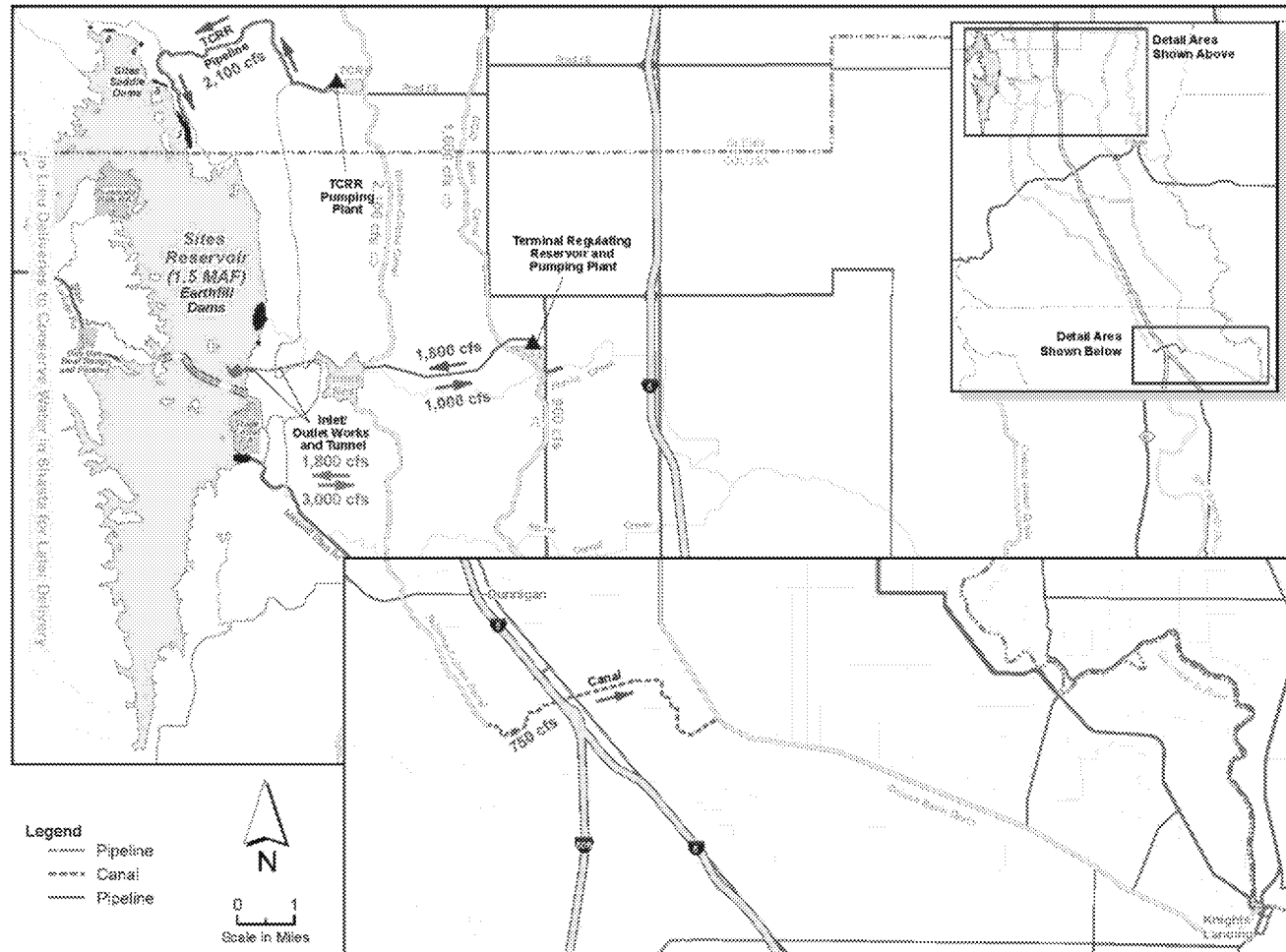


Figure 6a



# Alternative 6b – Similar to Alternative 6a, but reduces Reservoir to 1.3MAF and releases water from the Dunnigan Canal to the CBD - \$3.6B

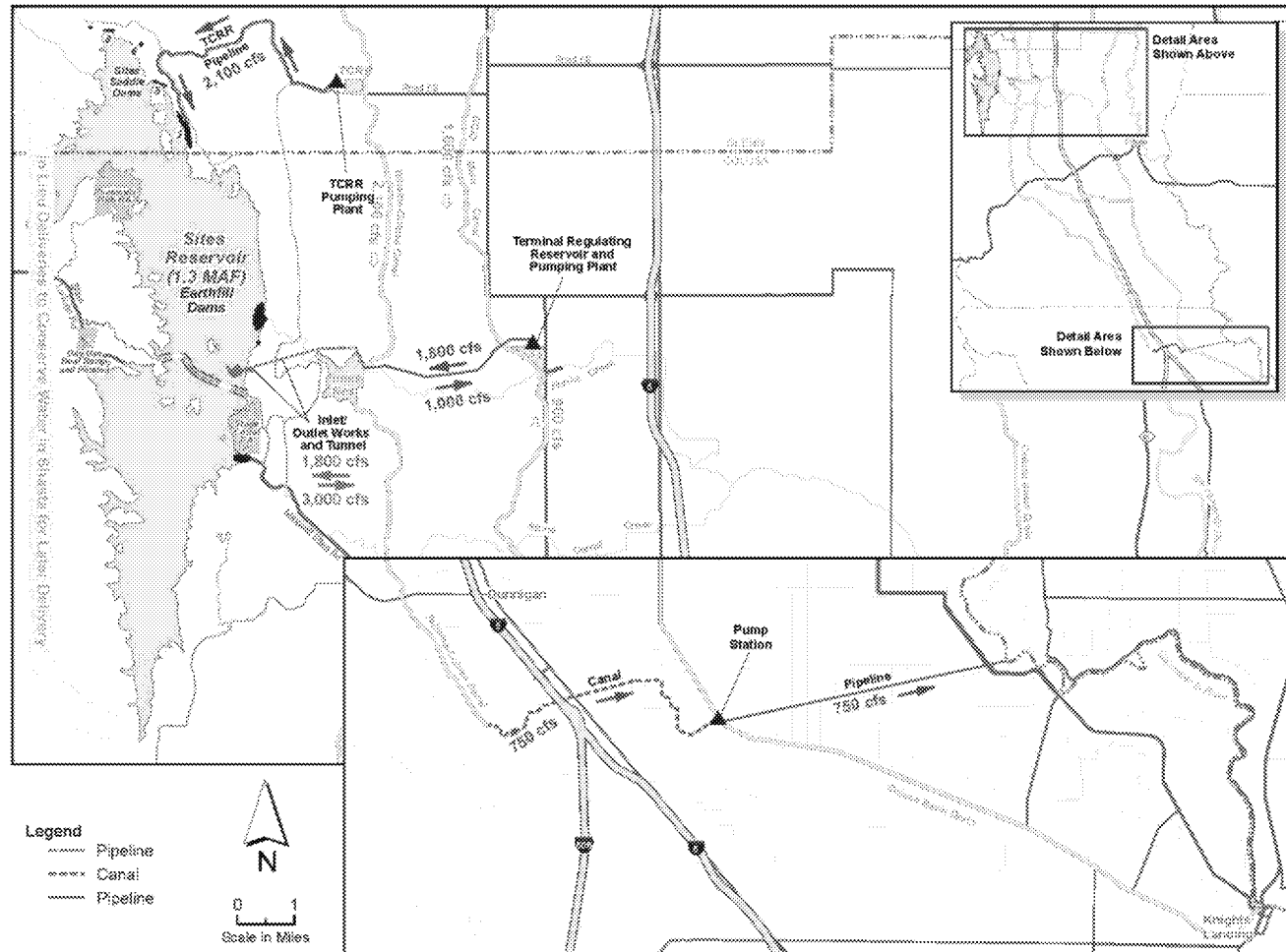


Figure 6b

# Estimated Project Costs

Alternative	Estimated Costs (\$2018) (financing cost not included)	Cost Reduction from Alternative D
Alternative D	\$5,235 million	0%
Alternative 1	\$3,970 million	24%
Alternative 2	\$3,988 million	24%
Alternative 3	\$3,868 million	26%
Alternative 4a	\$3,828 million	27%
Alternative 4b	\$3,861 million	26%
Alternative 5a	\$3,548 million	32%
Alternative 5b	\$3,876 million	26%
Alternative 6a	\$3,417 million	35%
Alternative 6b	\$3,584 million	32%

- Alternative Project Costs Range from \$3.4 to \$4.0B versus \$5.2B for Alternative D
- Alternative D includes \$218M of Risk (4.2%) from the February 2018 Risk Analysis. Value Planning estimates do not include risk adjustment or analysis.

# Value Planning Uncertainties

- Screening-level cost estimates have an expected variation range of (Association for Advancement of Cost Engineering):
  - Low range: -20% to +30%
  - High range: -50% to +100%
- But some facilities (especially the dams) have far more cost certainty than -50% to +100%. The higher percentages DO APPLY to facilities not included in Alternative D (e.g., a new regulating reservoir for the T-C Canal and a southern conveyance from Dunnigan).
- The entire project does NOT have a -50% to +100% estimate level. We don't have an \$8B project.
- Final project features and costs will vary from those presented.

# Key Elements of Success for Value Planning

- Permitting - identify the reasonable range of CDFW permitting outcomes
- Shasta Exchange - in cooperation with Reclamation, develop parameters and quantities for drier year exchanging Sites water into Shasta so that the Sites release facilities can be downsized / relocated
- Operations Plan – update the operations assumed for the WSIP application to reflect the above and current conditions
- Project Description – revise (if necessary) to reflect Value Planning outcomes

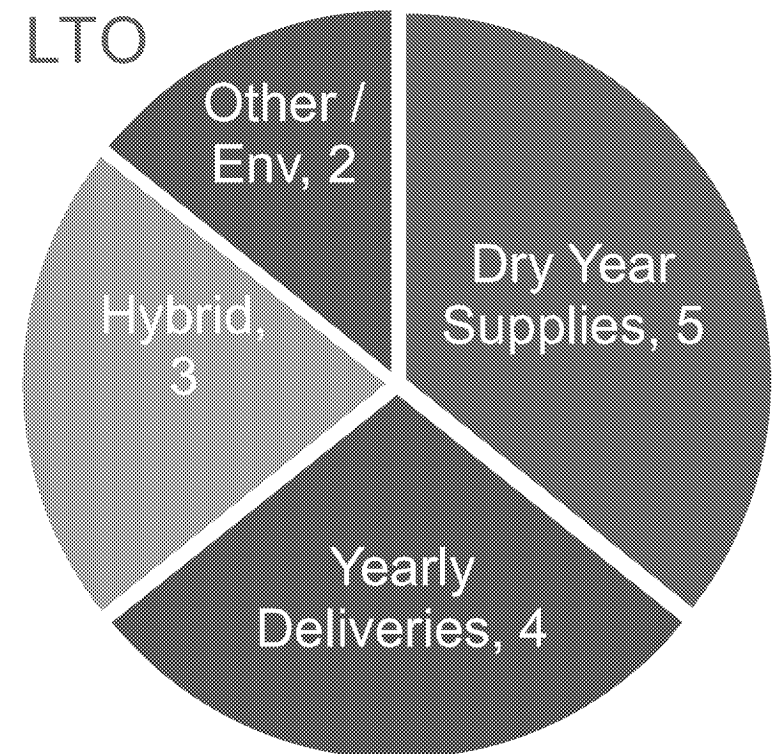
# OPERATIONS AND REPAYMENT STATUS



# Informal Survey Results

(2019 August)

- Responses: 14 of 21  
(108,442 AF of Participation = 56%)
- Diverse set of drivers  
(Cost, permitting, ROC on LTO  
CVP/SWP, VA's)
- Participation increases as  
costs decrease,  
particularly below  
\$750/AF



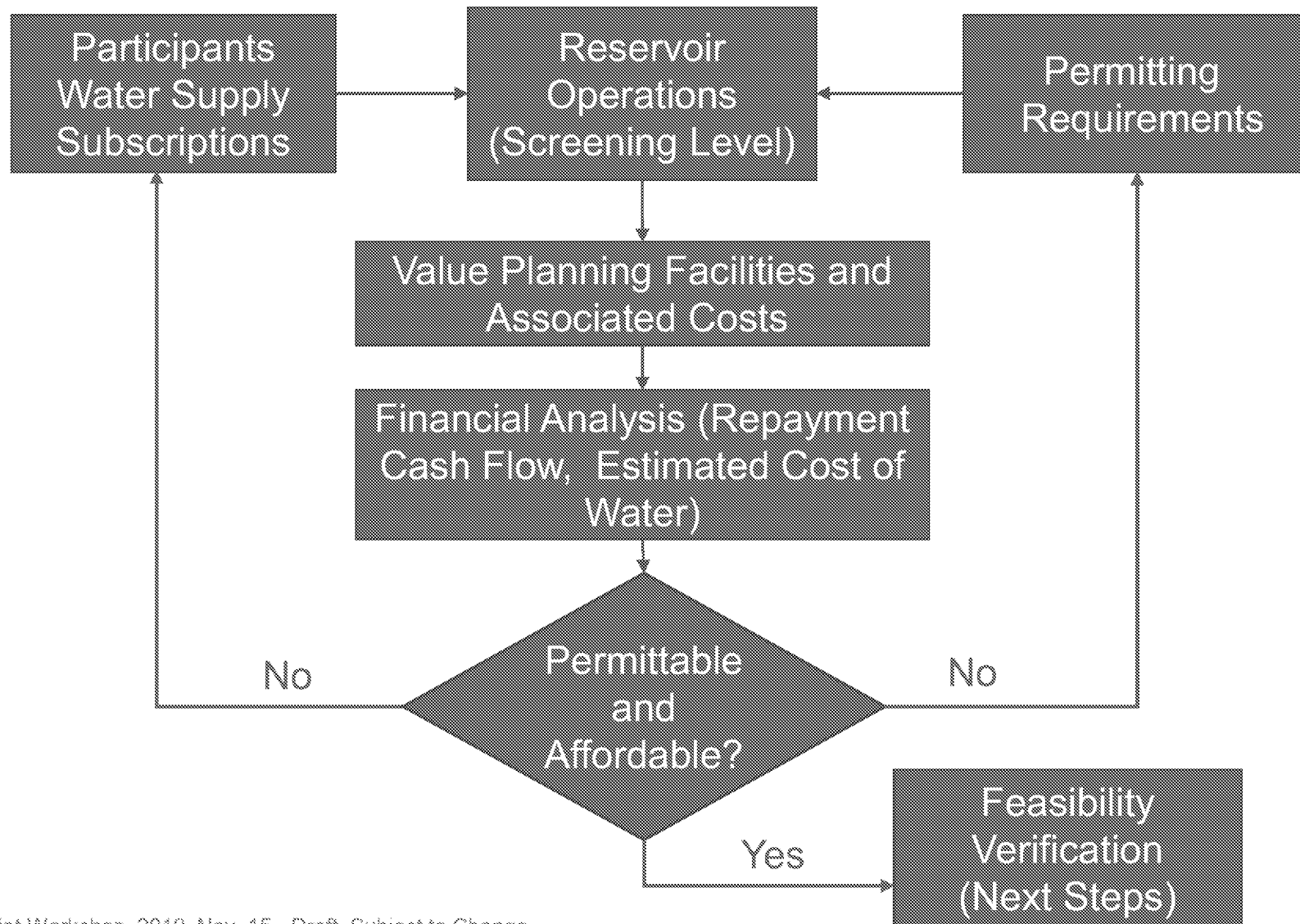


# Purpose of the Operations and Repayment Analysis

- Provide information regarding the potential range of cost of water in terms of annual repayment and operational costs
- Provide information regarding the potential range of annual cash flow requirements



# Operations and Repayment Analysis Process (Background)



# Participation Assumptions

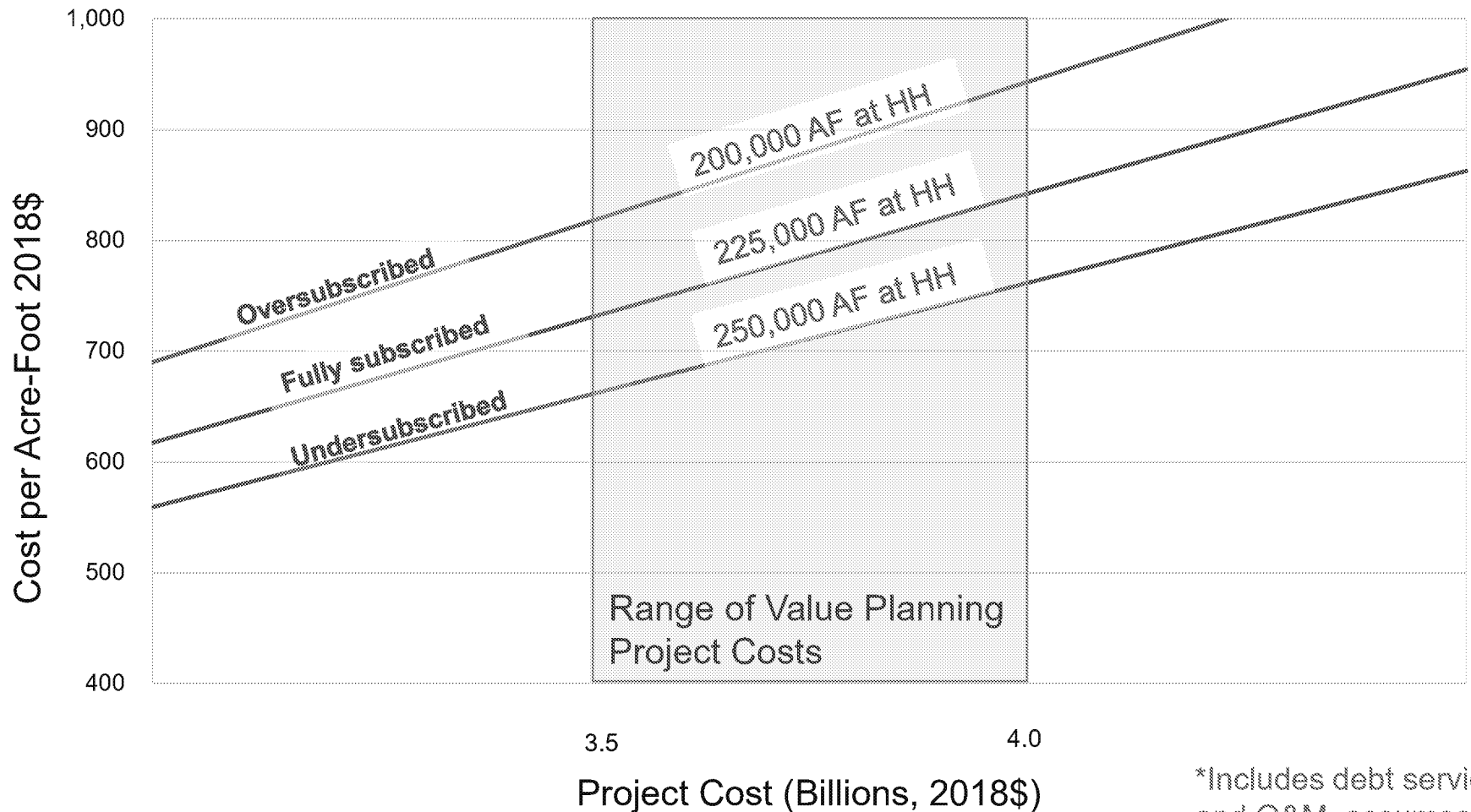
- Participant current subscription level = 192,812 AFY
- State based on Proposition 1 WSIP funding:
  - Total funding is \$816M
  - Deduct \$241.8M flood control and recreation benefits
  - Portion for environmental water supply is ~16,000 to 35,000 AFY
  - Assumes a separate storage account is used to cover O&M for environmental water

# Financial Working Assumptions

Item	Value
<b>Interim Loan</b>	
Interest Rate	3.00%
Unutilized Rate	0.75%
<b>Revenue Bonds</b>	
Interest Rate	5.00%
DSRF% of Maximum Annual Debt Service	50%
DSRF Earnings Rate	4.00%
Bond Fund Interest Earnings Rate	2.00%
First Maturity	12/1/2032
Final Maturity	6/1/2066
<b>USDA Loan</b>	
Interest Rate	3.875%
<b>WIFIA Loan</b>	
Interest Rate	3.500%
Construction Risk Mitigation Percentage	4.20%
<b>Inflation Escalators</b>	
Pre-Construction Escalation/year	1.50%
Construction Escalation/year	2.02%
Labor Inflation Rate/year	2.00%
Non-Labor inflation rate/year	2.00%
Electrical Generation Price Escalation/year	2.00%
Months for Generation post COD	24

# Annualized Cost per AF Delivered at Holthouse (HH)

Reservoir Committee Annualized Cost per AF



\*Includes debt service and O&M, assumes WIFIA loan

# Operations and Repayment Matrix – With WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	560	660	760	860	
225,000	620	730	840	950	
200,000	690	820	940	1,070	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.

# Operations and Repayment Matrix – Without WIFIA Loan

## Value Planning Range of Costs

		Reservoir Cost (2018\$, billions)			
		3	3.5	4	4.5
Water Deliveries (AF)	Estimated cost per AF Released*				
250,000	610	710	810	910	
225,000	670	780	890	1,000	
200,000	750	870	1,000	1,120	
<b>*Includes O&amp;M, in 2018 dollars</b>					

Rounded to the nearest \$10.



# SIMPLIFIED REPAYMENT TOOL

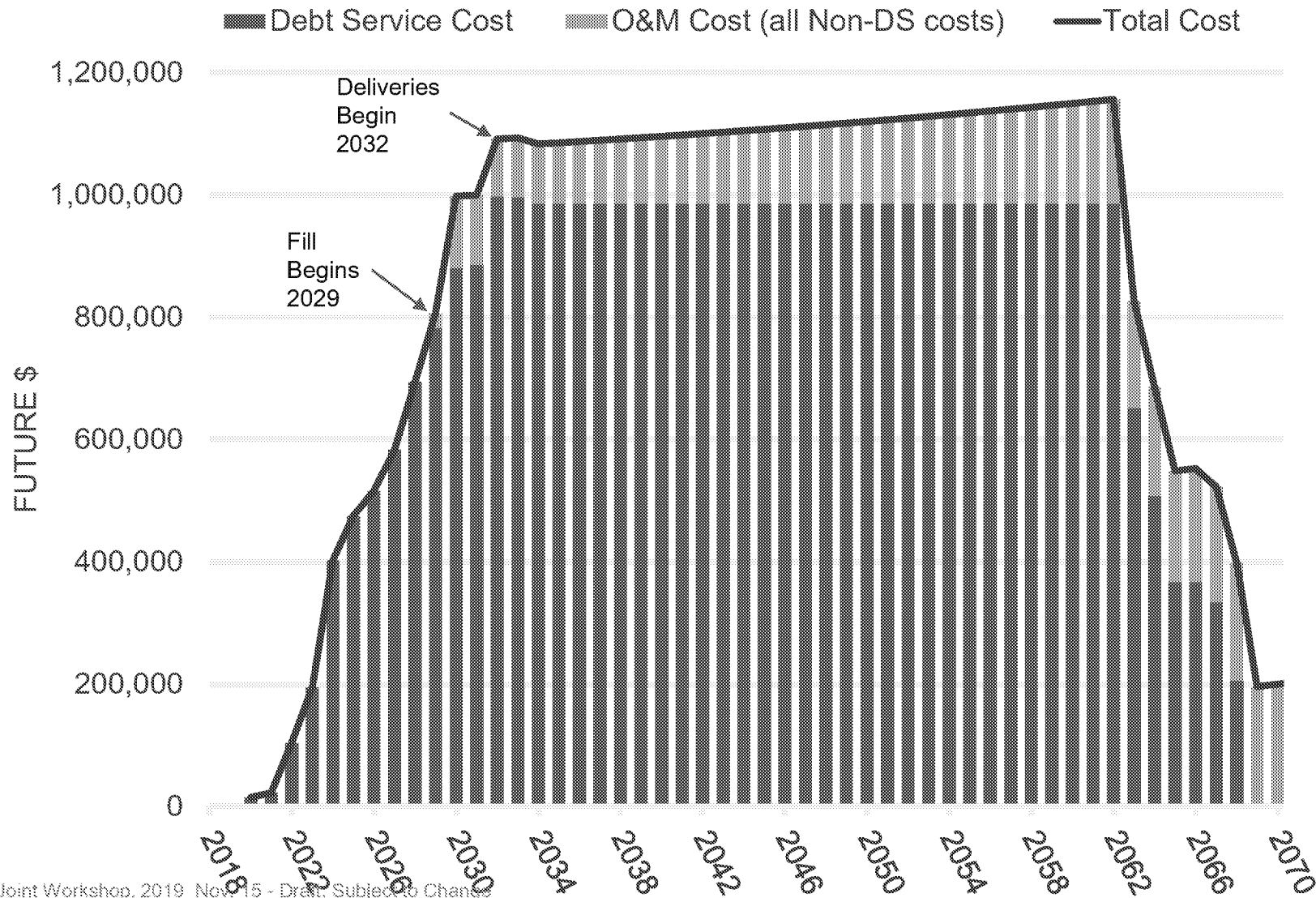




# Simplified Repayment Tool

- Input
  - Project Cost (\$3B-4.5B)
  - Deliveries at Holthouse (150-250 TAF)
  - Participation level (your agency, AF)
  - Include WIFIA financing (yes/no)
- Output (2018\$ and future \$)
  - Cash flow (from your agency)
  - Finance costs (debt service)
  - O&M costs
  - Annual average cost of water (\$/AF)

# Annual Expenses for 1,000 AF of Participation \$3.5B Project, 225,000 AF/YR Operations



# Simplified Repayment Tool Demonstration

<b>Input in green cells</b>	<b>Reservoir Cost (\$billions, \$2018)</b>				3.5
	<b>AF Water Deliveries at Holthouse</b>				225
	<b>Include WIFIA (yes=1, no=0)?</b>				1
	<b>Participation Level</b>				1,000
<b>Water Deliveries (AF)</b>	<b>Reservoir Cost (\$2018, billions)</b>				
	3.0	3.5	4.0	4.5	
	<b>Total \$/AF Released (w/o WIFIA) (2018\$)</b>				
250,000	605	705	805	905	
225,000	668	780	891	1,002	
200,000	747	873	998	1,123	
175,000	849	992	1,135	1,278	
150,000	984	1,152	1,318	1,485	
	<b>Total \$/AF Released (w/ WIFIA) (2018\$) (\$/AF)</b>				
250,000	559	661	762	863	
225,000	617	730	842	954	
200,000	690	817	943	1,069	
175,000	783	929	1,073	1,217	
150,000	908	1,077	1,246	1,414	

# NEAR TERM IMPLEMENTATION



# Where does the Project go from here? (1 of 3)

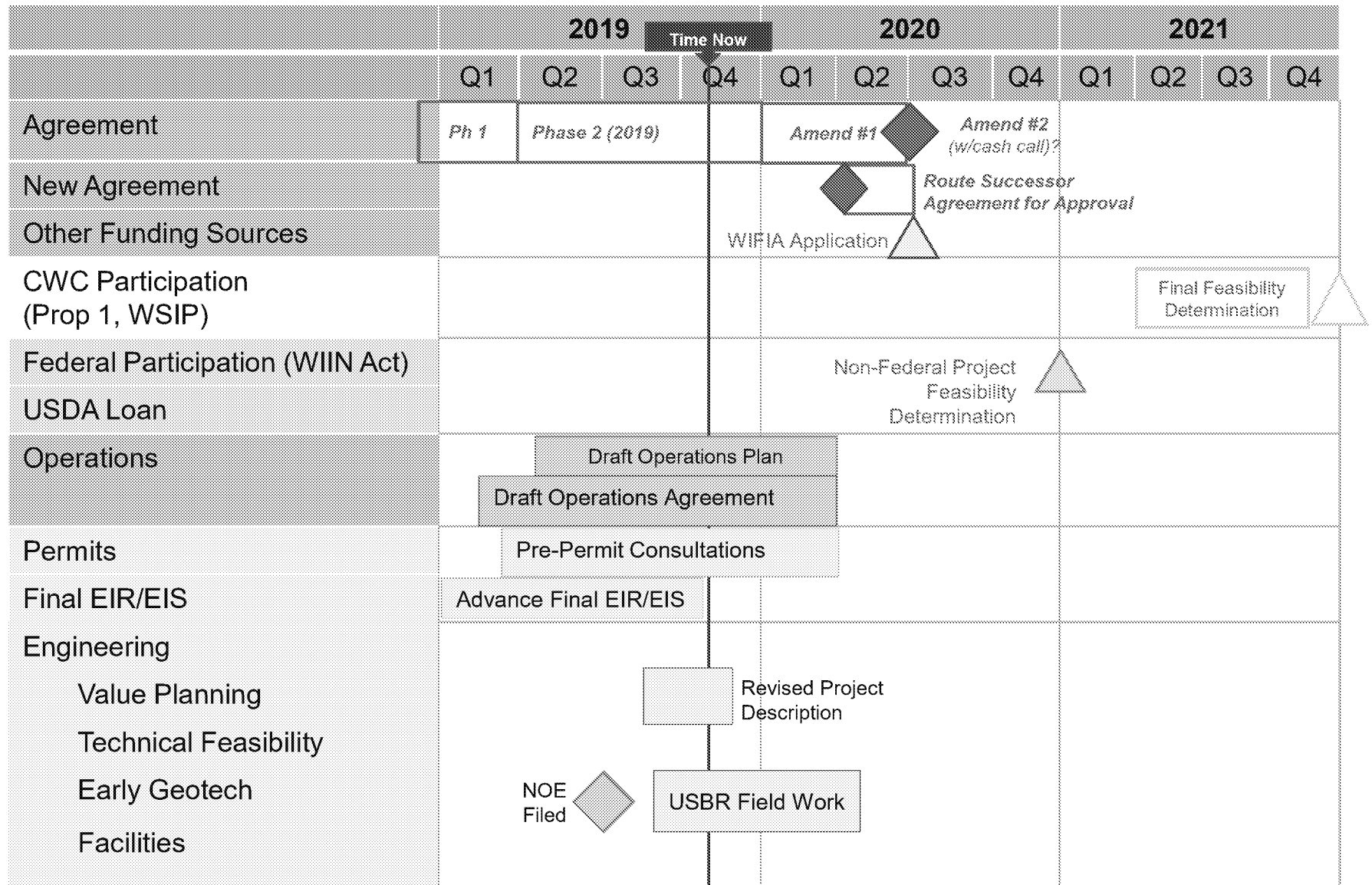
- Are Value Planning cost ranges adequate for the next Participant funding decision?
- Proceed with further Value Planning analyses (not currently budgeted)?
- Has permitting uncertainty been narrowed sufficiently for the next Participant funding decision?
- Proceed with detailed modeling to continue to make progress on addressing permitting, water rights, and operational uncertainty?



# Where does the Project go from here? (2 of 3)

- Revise Work Plan accordingly?
- Continue discussions with Reclamation regarding Operations Principles and Sites/Shasta exchanges? Work to develop a Financial Assistance Agreement for funding via the WIIN Act?
- Determine if further Value Planning should run in series with or parallel to discussions with Reclamation regarding Sites/Shasta exchanges?
- Identify criteria for, and proceed to narrow, the Alternatives?
- Determine if the Project Description should be revised and what changes are needed to the EIR/EIS?
- Update or conduct a new risk analysis for the preferred Value Planning alternatives?

# Where does the Project go from here? (3 of 3)





# JOINT AUTHORITY / RESERVOIR COMMITTEE WORKSHOP

NOVEMBER 15TH



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**Sent:** 11/19/2019 1:17:15 PM  
**To:** Obegi, Doug [dobegi@nrdc.org]; jon@baykeeper.org; Barry Nelson (barry@westernwaterstrategies.com) [barry@westernwaterstrategies.com]; greg@bayecotarium.org; Chris Shutes [blancapaloma@msn.com]; Kim Delfino [KDelfino@defenders.org]; Zwillinger, Rachel (Mail Contact) [rzwillinger@defenders.org]  
**CC:** Monique Briard (Monique.Briard@icf.com) [Monique.Briard@icf.com]; Jim Watson [jwatson@sitesproject.org]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Tull, Robert/SAC [Robert.Tull@jacobs.com]; Kevin Spesert [kspesert@sitesproject.org]; John Spranza (john.spranza@hdrinc.com) [john.spranza@hdrinc.com]; Grimaldo, Lenny [Lenny.Grimaldo@icf.com]  
**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up  
**Attachments:** 20191115 Workshop Presentation.pdf

Hi all – I thought I would circle back with you all for a quick update.

We held a joint public workshop of the Reservoir Committee and Authority Board late last week. We talked through where we are with operational criteria, the value planning effort and the affordability analysis. I've attached the workshop presentation. It will be posted to the Authority website shortly.

As you'll see in the attached presentation, Sites has continued our discussions with CDFW on operating criteria (diversion criteria), albeit at a little slower pace more recently. We have also recently had a joint meeting with NMFS, USFWS, and CDFW to begin dialogue on operational criteria as a group. Not much progress has been made on the running the NMFS winter-run life-cycle model for the Project – we continue to work thru the contracting process and refine the operating criteria so we're not ready to run the model yet.

We have also continued to work on refinements to the Project to right-size it for the current participants. We are considering a number of right-sizing actions, such as reducing the size of the reservoir, no Delevan intake, no Delevan outfall, and other options. The Authority embarked on an initial Value Planning effort to look at a number of possible cost reduction measures. The initial options out of the this effort and the potential resulting cost savings are identified in the attached presentation. Also identified is the potential cost of water for different reservoir costs and deliveries at Holthouse (deliveries to participants, including the CWC / WSIP water).

With so much in flux right now, we have taken a break from following up on the action items from our August meeting. We will continue to hold these out there and intend to follow up on them once we have a better sense of how the Authority Board would like to move forward with the project.

If you have any questions on Sites or the attached presentation, please don't hesitate to reach out to me.

Hope everyone is well and you all have a great Thanksgiving next week (I cant believe we're already there)!

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Alicia Forsythe  
**Sent:** Monday, October 14, 2019 7:47 AM  
**To:** Obegi, Doug <dobegi@nrdc.org>; jon@baykeeper.org; Barry Nelson (barry@westernwaterstrategies.com) <barry@westernwaterstrategies.com>; greg@bayecotarium.org; Chris Shutes <blancapaloma@msn.com>; Kim Delfino

<KDelfino@defenders.org>; Zwillinger, Rachel (Mail Contact) <rzwillinger@defenders.org>

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**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up

Thank you Doug and Chris for the refinements to the Action Items. Below is an updated list – text of items 3 and 4 have been updated and items 5 and 6 were added.

I've also attached a PDF of the presentation. Note that the PDF file changes templates and page numbers part way thru. We actually used 2 presentations that day and I combined them both into one PDF file. The actual PPT files are too large to send via email.

And thanks Doug for the four papers!

Revised Action Items:

1. Schedule a terrestrial focused meeting to focus on (among other topics): (1) terrestrial species and habitat impacts; (2) impacts to refuge and refuge easements; (3) impacts to giant garter snake; and (4) mitigation strategy for terrestrial species.
2. Look at possibility of releasing the Daily Model. (Note, I talked with the team on this late last week. We are scheduling an internal Sites discussion on the possibility of releasing the model along with the timing and what documentation should accompany a release. I should have more info on this in about 2 weeks.)
3. Can Sites add the Yolo Bypass to the floodplain modeling effort? (Note, we are already planning on adding the Sutter Bypass to the floodplain modeling effort, but had not planned on including Yolo. So this action item is focused on Yolo as we had not originally planned on including the Yolo Bypass in the floodplain modeling effort. Sutter will be included.)
4. Continue discussion on effects to salmonid survival throughout the Sacramento River and Delta. – Doug sent over papers on 10/9.
5. Email copy of PPT presentation from meeting. – Completed with this email.
6. Provide deliveries and current demands in the Glenn-Colusa and Tehama-Colusa canals downstream of a prospective Sites Reservoir -- what volume of water annually could Sites serve to current water users on the Glenn-Colusa and Tehama-Colusa canals?

We are working on the action items and I'll provide an update on status next week.

Ali

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Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
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**From:** Obegi, Doug <[dobegi@nrdc.org](mailto:dobegi@nrdc.org)>

**Sent:** Wednesday, October 9, 2019 5:25 PM

**To:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>; [jon@baykeeper.org](mailto:jon@baykeeper.org); Barry Nelson ([barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)) <[barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)>; [greg@baycotarium.org](mailto:greg@baycotarium.org); Chris Shutes <[blancapaloma@msn.com](mailto:blancapaloma@msn.com)>; Kim Delfino <[KDelfino@defenders.org](mailto:KDelfino@defenders.org)>; Zwillinger, Rachel (Mail Contact) <[rzwillinger@defenders.org](mailto:rzwillinger@defenders.org)>

**Cc:** Monique Briard ([Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)) <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>; Jim Watson <[jwatson@sitesproject.org](mailto:jwatson@sitesproject.org)>;

Jim Lecky ([jjim.Lecky@icf.com](mailto:jjim.Lecky@icf.com)) <[jjim.Lecky@icf.com](mailto:jjim.Lecky@icf.com)>; Tull, Robert/SAC <[Robert.Tull@jacobs.com](mailto:Robert.Tull@jacobs.com)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; John Spranza ([john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)) <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Grimaldo, Lenny <[Lenny.Grimaldo@icf.com](mailto:Lenny.Grimaldo@icf.com)>

**Subject:** RE: Sites Meeting with NRDC, et al. - Follow-up

Hi Ali,

Thank you for following up on our prior meeting, and I agree that it makes sense to hold off on scheduling another meeting at this point.

Attached are 3 papers from 2018 and 2019 regarding Sacramento River flows and salmon survival, including the Friedman et al 2019 paper I mentioned in the meeting, as well as the Zeug et al 2014 paper showing a very strong correlation between Stanislaus River flows and juvenile salmon survival.

In terms of the action items from the meeting, I thought that item #4 was not limited to impacts downstream of Freeport (see Perry et al 2018), but instead was regarding impacts in the Sacramento River below the intakes as well as further downstream. I believe item #3 was broader floodplain inundation modeling, not limited to Yolo Bypass (?). In addition, would you please email us a copy of the PPT presentation that was shared at the meeting with us? That was on my list of action items from the meeting.

Thanks,  
-d

---

**From:** Alicia Forsythe <[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org)>

**Sent:** Wednesday, October 9, 2019 4:16 PM

**To:** [jon@baykeeper.org](mailto:jon@baykeeper.org); Barry Nelson ([barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)) <[barry@westernwaterstrategies.com](mailto:barry@westernwaterstrategies.com)>; [greg@bayecotarium.org](mailto:greg@bayecotarium.org); Obegi, Doug <[dobegi@nrdc.org](mailto:dobegi@nrdc.org)>; Chris Shutes <[blancapaloma@msn.com](mailto:blancapaloma@msn.com)>; Kim Delfino <[KDelfino@defenders.org](mailto:KDelfino@defenders.org)>; Zwillinger, Rachel (Mail Contact) <[rzwillinger@defenders.org](mailto:rzwillinger@defenders.org)>

**Cc:** Monique Briard ([Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)) <[Monique.Briard@icf.com](mailto:Monique.Briard@icf.com)>; Jim Watson <[jwatson@sitesproject.org](mailto:jwatson@sitesproject.org)>; Jim Lecky ([jjim.Lecky@icf.com](mailto:jjim.Lecky@icf.com)) <[jjim.Lecky@icf.com](mailto:jjim.Lecky@icf.com)>; Tull, Robert/SAC <[Robert.Tull@jacobs.com](mailto:Robert.Tull@jacobs.com)>; Kevin Spesert <[kspesert@sitesproject.org](mailto:kspesert@sitesproject.org)>; John Spranza ([john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)) <[john.spranza@hdrinc.com](mailto:john.spranza@hdrinc.com)>; Grimaldo, Lenny <[Lenny.Grimaldo@icf.com](mailto:Lenny.Grimaldo@icf.com)>

**Subject:** Sites Meeting with NRDC, et al. - Follow-up

All –

I sincerely apologize for the long delay in circling back to you all after our meeting. I know how important it is to follow up on our commitments and time just got away from me on this. My apologies.

I wanted to say thank you very much for taking the time to chat with us. Below are the action items that I recorded. Please let me know if I missed any or have mischaracterized any.

I also wanted to share that we continue with our discussions with CDFW on operating criteria (diversion criteria). We have also had an initial re-engagement meeting with NMFS and plan to meet with them and CDFW together in the coming weeks. NMFS is agreeable to us entering into a contract with them to run their winter-run life-cycle model for the Project. We are starting to work on the contracting effort and are hopeful that this wraps up about the time we have revised operational criteria for NMFS to run – likely late this calendar year.

We have also continued to work on refinements to the Project to right-size it for the current participants. We continue to consider a number of right-sizing actions, such as reducing the size of the reservoir along with no Delevan intake. Once the Authority identifies a preferred project, we will assess the changes and how best to move forward with the CEQA / NEPA compliance effort.

There is a lot in flux right now, so I'd like to hold off on meeting again. As we narrow down on a preferred project and new operations criteria, I would like to circle back and get your input on these. I am always happy to chat if you have questions or suggestions in the meantime.

Action Items:

1. Schedule a terrestrial focused meeting to focus on (among other topics): (1) terrestrial species and habitat impacts; (2) impacts to refuge and refuge easements; (3) impacts to giant garter snake; and (4) mitigation strategy for terrestrial species.
2. Look at possibility of releasing the Daily Model. (Note, I talked with the team on this late last week. We are scheduling an internal Sites discussion on the possibility of releasing the model along with the timing and what documentation should accompany a release. I should have more info on this in about 2 weeks.)
3. Can Sites add the Yolo Bypass to the floodplain modeling effort?
4. Continue discussion on effects to salmonid survival downstream of Freeport. Check Freedman (spelling?) 2019 paper and a recent paper from the Stanislaus River (Doug, I didn't catch the title of this one. Can you send it over or send the title?)

We will follow up on these action items in the coming weeks.

Please don't hesitate to contact me if you have any questions, thoughts or concerns on the Sites Project.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**Sent:** 11/19/2019 2:31:38 PM  
**To:** Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) [Kristal.Davis-Fadtke@wildlife.ca.gov]  
**Subject:** Sites - Joint Workshop Last Week  
**Attachments:** 20191115 Workshop Presentation.pdf

Hi Kristal – I hope you’re doing well and your ankle is better!

We had a joint Reservoir Committee / Authority Board workshop last week. Attached is the presentation from it (which will also be posted to our website soon so its public information). Thought this might give you a sense of where Sites is going with operational criteria, the Value Planning effort, and the affordability analysis.

We are awaiting direction from the Reservoir Committee at their meeting this Thursday, but we are proposing that we have narrowed the range of operational criteria sufficiently for now. We’re proposing that we embark on more detailed modeling of the WaterFix scenarios so we have more confidence in the Calsim results – along with temperature and DSM2 modeling. I am hopeful that the Reservoir Committee supports our approach. From there, I think we’d like to sit back down with you, Ken and whomever you’d like to include to talk about updates to Calsim, other modeling we should run, etc, along with schedule. I am thinking that it will take Jacobs at least 6, maybe 8 weeks (and maybe longer with the holidays coming up) to really work things out and get all of this represented in Calsim in a way that we can all agree upon. They still haven’t been able to get the recent updates working in a way that they are comfortable with them – hence why we don’t have an updated table for you and your teams review.

Anyway, just wanted to give you a quick update on where things are. Happy to chat if you’d like.

Ali

-----  
Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |  
[aforsythe@sitesproject.org](mailto:aforsythe@sitesproject.org) | [www.SitesProject.org](http://www.SitesProject.org)

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**From:** Thad Bettner [tbettner@gcid.net]  
**Sent:** 11/22/2019 12:49:04 PM  
**To:** Rob Kunde [rkunde@wrmsd.com]; 'William Vanderwaal' [WVanderwaal@rd108.org]; DRuiz@westsidewd.com; Randall Neudeck [rneudeck@mwdh2o.com]; CCwd2@frontiernet.net; gevans@countyofcolusa.org; mjazevedo@countyofcolusa.org; Jamie [jamie@tnpfarms.com]; Jim Watson [jwatson@sitesproject.org]; Rob Thomson [rthomson@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]; Tull, Robert/SAC [Robert.Tull@jacobs.com]; Herrin, Jeff [jeff.herrin@aecom.com]; john.spranza@hdrinc.com; jsutton@tccanal.com; bencarter@succeed.net; svalles@mwdh2o.com  
**Subject:** RE: Sites Value Planning Ad Hoc Group - Availability for Next Meeting Dec 16 or 17

I'm only available the 16<sup>th</sup>, thanks

---

Thaddeus L Bettner  
Glenn-Colusa Irrigation District  
PO Box 150  
Willows, CA 95988  
530.934.8881 (office)  
530.588.3450 (cell)



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**From:** Rob Kunde [mailto:rkunde@wrmsd.com]  
**Sent:** Friday, November 22, 2019 11:41 AM  
**To:** 'William Vanderwaal'; DRuiz@westsidewd.com; Thad Bettner; Randall Neudeck; CCwd2@frontiernet.net; gevans@countyofcolusa.org; mjazevedo@countyofcolusa.org; Jamie; Jim Watson; Rob Thomson; Alicia Forsythe; Tull, Robert/SAC; Herrin, Jeff; john.spranza@hdrinc.com; jsutton@tccanal.com; bencarter@succeed.net; svalles@mwdh2o.com  
**Subject:** Sites Value Planning Ad Hoc Group - Availability for Next Meeting Dec 16 or 17

Ladies and Gentlemen of the Sites Value Planning Ad Hoc Group:

At the Nov 21 RPC meeting, it was decided to start narrowing the Value Planning Alternatives. I asked staff to develop some screening criteria and set up a meeting the week of Dec 2 (forgetting that was ACWA Conference Week). Bill Vanderwaal and I subsequently decided to target one of the following dates for an in person meeting:

Mon, Dec 16, 1:00 pm at RD108  
or Tues, Dec 17, 1:00 pm at RD108

**Please advise regarding your availability.**

Randall and I request Jamie bring lunch again.

This meeting would include selected Sites staff and contractors to discuss the Alternatives, how to mix and match components (roads, dam type, release facilities, reservoir size, etc), consideration of other components



not yet presented to the RPC, and the screening criteria and applicability to selected Alternatives. The goal is to narrow the alternatives and make progress toward a Project Description prior to the December 19 Reservoir Project Committee meeting.

**Robert J. Kunde, P.E.**

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

12109 Highway 166, Bakersfield, CA 93313

cell: 661-345-3719 email: [rkunde@wrmwsd.com](mailto:rkunde@wrmwsd.com)

---

**From:** Rob Thomson [rthomson@sitesproject.org]  
**Sent:** 11/25/2019 10:13:26 AM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**CC:** Kevin Spesert [kspesert@sitesproject.org]; Jim Watson [jwatson@sitesproject.org]  
**Subject:** FW: Sites - Humboldt  
**Attachments:** Sites agenda package 12-10-2019.pdf

As previously forwarded

---

**From:** Seemann, Hank <HSeemann@co.humboldt.ca.us>  
**Sent:** Friday, November 22, 2019 5:07 PM  
**To:** Rob Thomson <rthomson@sitesproject.org>  
**Cc:** Bohn, Rex <RBohn@co.humboldt.ca.us>  
**Subject:** Sites - Humboldt

Rob-

Supervisor Madrone (whose district encompasses the Trinity River) has requested that the Humboldt County Board of Supervisors re-visit its position on the Sites Reservoir Project at the Board's December 10 meeting. PCFFA drafted two letters and I was asked to facilitate putting them on the Board's agenda. A copy of the agenda package is attached. Wanted to give you the heads up in case you'd like to attend. The week before the meeting, I'll work with the clerk of the Board to establish a time-set for the item.

Hank

-----  
Hank Seemann  
Deputy Director - Environmental Services  
Humboldt County Public Works Department  
1106 Second Street  
Eureka, CA 95501  
707-268-2680

---

**From:** Thad Bettner [tbettner@gcid.net]  
**Sent:** 9/11/2019 8:03:06 AM  
**To:** Kristen White (knwhite@usbr.gov) [knwhite@usbr.gov]  
**CC:** Tull, Robert/SAC [Robert.Tull@jacobs.com]; Leaf, Rob/SAC (Rob.Leaf@jacobs.com) [Rob.Leaf@jacobs.com]; Rob Thomson [rthomson@sitesproject.org]; Jim Watson [jwatson@sitesproject.org]; WELSH, RICHARD <rwelsh@usbr.gov> (rwelsh@usbr.gov) [rwelsh@usbr.gov]  
**Subject:** Sites Operations/Shasta Exchange

**Importance:** High

Kristen,

To follow our conversation yesterday morning and the email I sent you and Jeff on August 8, I had a call with the Sites team to discuss modeling that has been done based on my initial proposal below.

We do have some results to share with you and your team and would like to propose an initial call on Monday at 3 pm if that could work. We could get to you prior to the call a brief operations write-up and some modeling results to get the conversation going.

Let me know if that works.

Thanks,

Thad

**From:** Thad Bettner <tbettner@gcid.net>  
**Sent:** Thursday, August 08, 2019 9:44 AM  
**To:** jrieker@usbr.gov; Kristen White (knwhite@usbr.gov) <knwhite@usbr.gov>  
**Cc:** James Watson (jwatson@SitesProject.org) <jwatson@SitesProject.org>; Tull, Robert/SAC <Robert.Tull@jacobs.com>; Rob Thomson <rthomson@sitesproject.org>  
**Subject:** [EXTERNAL] Sites-Shasta Operations 866.453.5550, 2056729#

Jeff/Kristen,

Thanks again for your willingness to discuss the Sites-Shasta operations. As I discussed earlier this week given the uncertainty and timeliness of congressional authorization and appropriations for the federal government to invest in Sites as a partner, we need to be looking at the benefits of how a Sites – Shasta exchange can happen to benefit both of the projects.

The Operational Report submitted to the Water Commission by Sites states:

*One of the major environmental benefits of the operations of the Sites Reservoir Project is the ability to allow a portion of the water demand within significant parts of the CVP service area along the Tehama Colusa Canal and Glen Colusa Canal south of Sites Reservoir to be met from Sites Reservoir in the summer and allow a like amount of water to be retained in Shasta Reservoir (via exchange) to assist in cold water pool management. As Sites water is stored via exchange with CVP obligations, it will create a Sites Water Account (SWA) in the Shasta Reservoir. The Authority, working on behalf of its member agencies, will manage this account in cooperation with Reclamation.*

To operationalize this statement, I provided the following scenario:

- a) GCID and TCCA would divert up to 1,000 cfs daily (this is a conservative amount) in the spring/summer from Sites and leave a like amount of that undiverted water in Shasta.
- b) That would allow for an upto 1,000 cfs reduction in Shasta release in flow that we would have otherwise diverted which would accrue to a "Sites" account.( understanding there could be a temperature control issue at CCR with reduction in release)
- c) "Sites" water would accrue in Shasta and be held for release in the summer - fall to Sites investors (similar to a 2014-15 operations) which would improve cold water pool conditions.
- d) Accrual would not exceed 250,000 acre-feet and would be evacuated by XXX date or subject to spill. (This volume limitation would provide Reclamation some reassurance that CVO retains all operational discretion, also need to address fall operations and fall redd river flow stabilization)
- e) Exchange into Shasta would likely occur in a Dry/Critical year only, other exchanges in other year types would likely be smaller or would be handled through the Delevan pipeline.

What would helpful for our call would be to focus on 3 key issues:

- 1. What is approximately daily exchange rate that makes sense, 750, 1000, 1250, 1500 cfs?
- 2. What is the pool of water in Shasta that Sites could accrue, 100K, 150K, 200K
- 3. What is period to withdraw water from Shasta and at what rate?

---

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PO Box 150  
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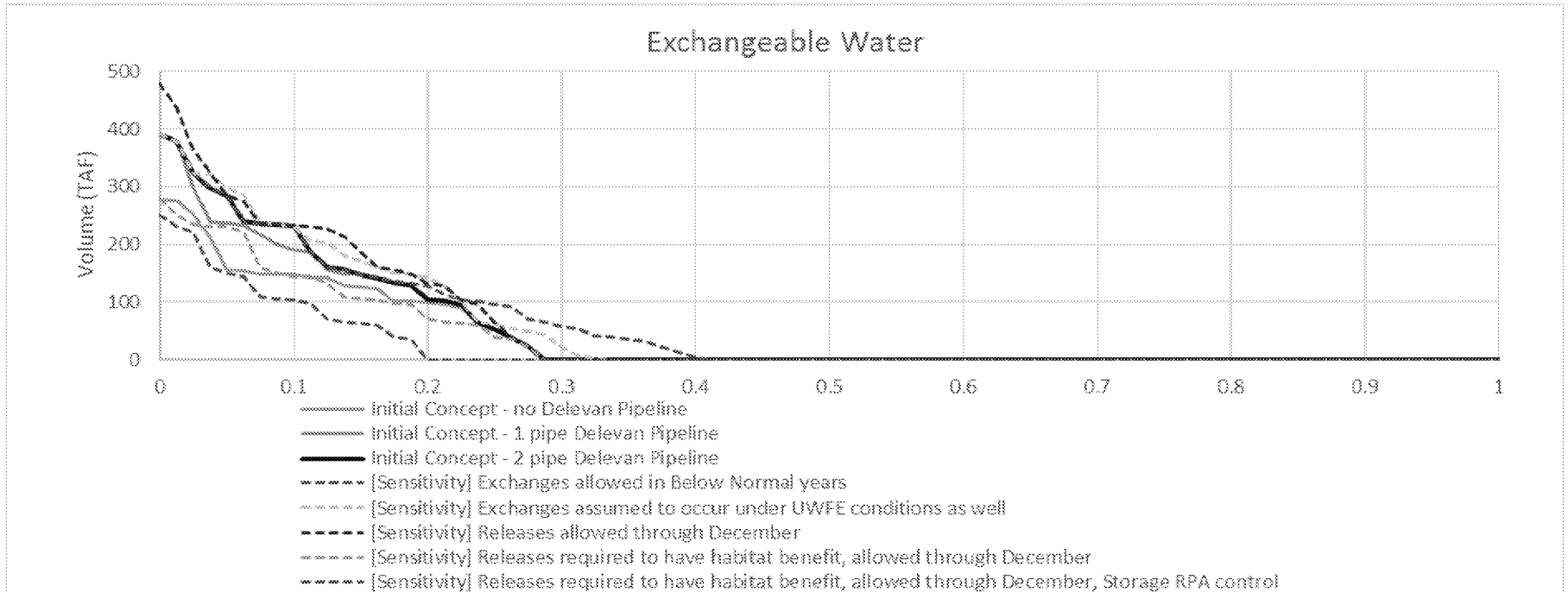
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DCR 2015

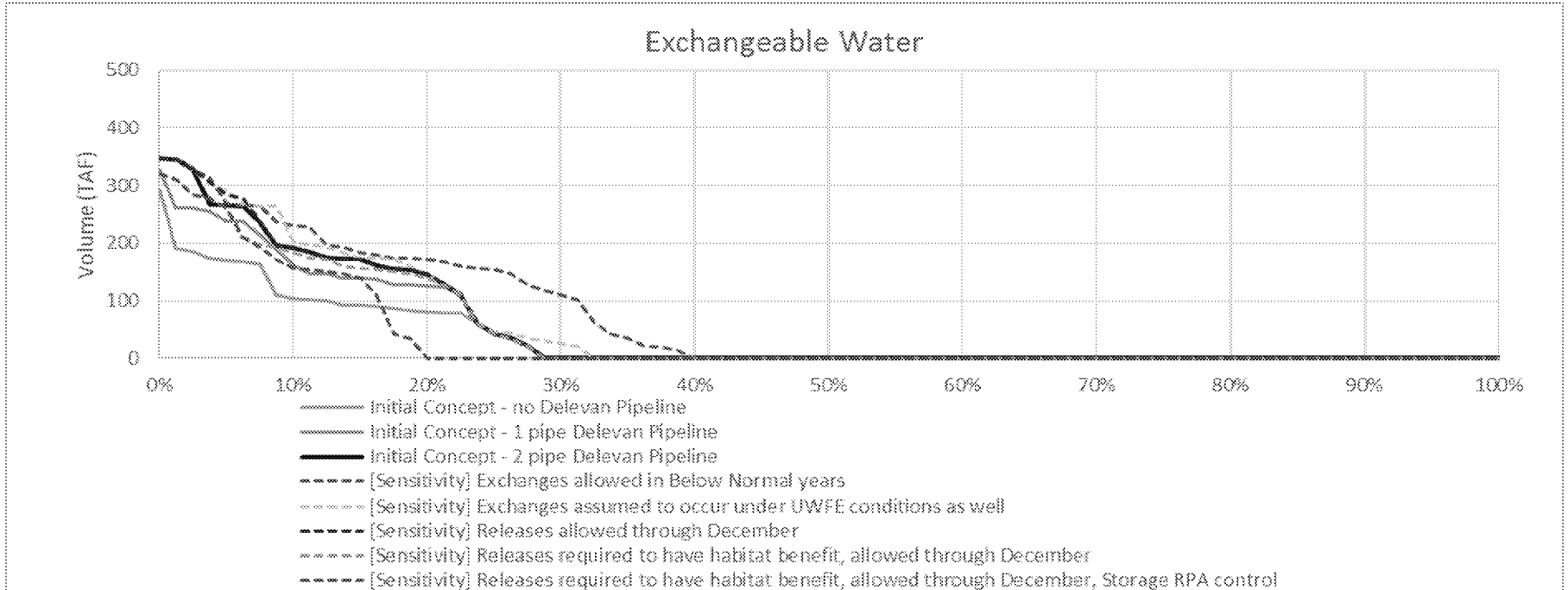
Sites-Shasta Exchangeable Water

	Initial Concept - no Delevan Pipeline	Initial Concept - 1 pipe Delevan Pipeline	Initial Concept - 2 pipe Delevan Pipeline	[Sensitivity] Exchanges allowed in Below Normal years	[Sensitivity] Exchanges assumed to occur under UWFE conditions as well	[Sensitivity] Releases allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December, Storage RPA control
Long-Term Average	38	48	51	59	57	59	38	24
Dry Periods	80	111	124	124	133	140	94	36
Wet Years	0	0	0	0	0	0	0	0
Above Normal Years	0	0	0	0	0	0	0	0
Below Normal Years	0	0	0	43	0	0	0	0
Dry Years	119	141	144	144	156	177	100	100
Critical Years	80	114	130	130	149	133	104	9



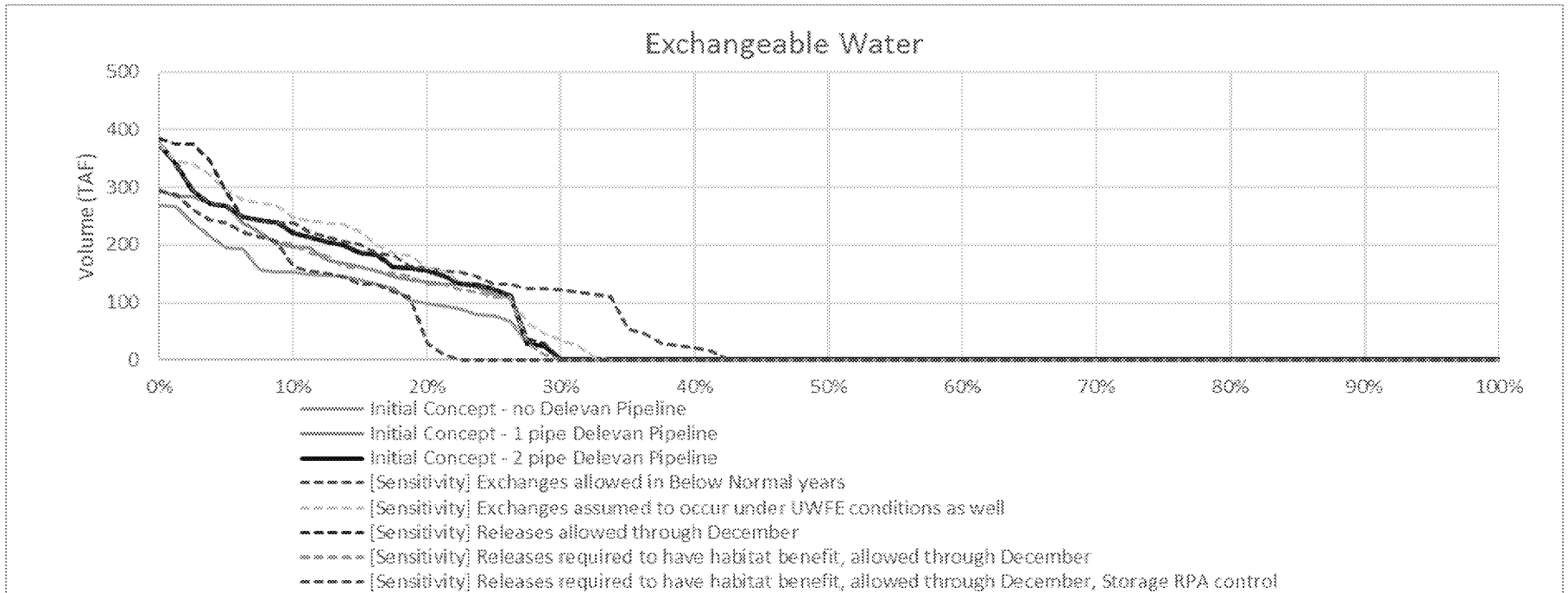
**LTO Current Operations Scenario**  
**Sites-Shasta Exchangeable Water**

	Initial Concept - no Delevan Pipeline	Initial Concept - 1 pipe Delevan Pipeline	Initial Concept - 2 pipe Delevan Pipeline	[Sensitivity] Exchanges allowed in Below Normal years	[Sensitivity] Exchanges assumed to occur under UWFE conditions as well	[Sensitivity] Releases allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December, Storage RPA control
Long-Term Average	32	45	51	68	56	52	48	37
Dry Periods	70	101	117	117	122	118	115	62
Wet Years	0	0	0	0	0	0	0	0
Above Normal Years	0	0	0	0	0	0	0	0
Below Normal Years	0	0	0	125	0	0	0	0
Dry Years	98	135	156	156	170	160	143	143
Critical Years	53	78	86	86	93	86	86	9



**LTO Proposed Action**  
**Sites-Shasta Exchangeable Water**

	Initial Concept - no Delevan Pipeline	Initial Concept - 1 pipe Delevan Pipeline	Initial Concept - 2 pipe Delevan Pipeline	[Sensitivity] Exchanges allowed in Below Normal years	[Sensitivity] Exchanges assumed to occur under UWFE conditions as well	[Sensitivity] Releases allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December	[Sensitivity] Releases required to have habitat benefit, allowed through December, Storage RPA control
Long-Term Average	41	52	57	70	65	60	50	38
Dry Periods	83	114	129	129	135	135	109	52
Wet Years	0	0	0	0	0	0	0	0
Above Normal Years	0	0	0	0	0	0	0	0
Below Normal Years	0	0	0	91	0	0	0	0
Dry Years	129	153	167	167	192	179	138	138
Critical Years	63	96	109	109	116	109	109	29





---

**From:** Leaf, Rob/SAC [Rob.Leaf@jacobs.com]  
**Sent:** 10/3/2019 9:42:10 AM  
**To:** Leaf, Rob/SAC [Rob.Leaf@jacobs.com]  
**Subject:** RE: Sites Operations/Shasta Exchange - Conference Call Materials  
**Attachments:** NoUSBRShastaStoragecontrol.xlsx

This table summarizes the storable water with the condition that Shasta Storage must be above 1,800 TAF:

With Min Storage Rule	
LT	46
W	0
AN	0
BN	0
D	167
C	29

Without Min Storage Rule	
LT	57
W	0
AN	0
BN	0
D	167
C	109

When looking at temperature tiers, the tier only changes in 2 years: 1964 and 1976.

Both sets of calculations are in the attached spreadsheet.

**File Provided Natively**

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**From:** Garcia, Donna [dcgarcia@usbr.gov]  
**Sent:** 11/26/2019 10:10:17 AM  
**To:** Thad Bettner [tbettner@gcid.net]; Alicia Forsythe [aforsythe@sitesproject.org]; Jim Watson [jwatson@sitesproject.org]; White, Kristin N [knwhite@usbr.gov]; WELSH, RICHARD A. [RWelsh@usbr.gov]; 'Spranza, John' [John.Spranza@hdrinc.com]  
**CC:** 'Spranza, John' [John.Spranza@hdrinc.com]  
**Subject:** Re: Hold for Sites/USBR Ops Meeting  
**Attachments:** Sites COA integration slides.pptm

All- My slides on Sites integrated water management framework discussion from this morning's meeting. Thanks, Donna

---

**From:** Thad Bettner <tbettner@gcid.net>  
**Sent:** Monday, November 25, 2019 1:12 PM  
**To:** Alicia Forsythe <aforsythe@sitesproject.org>; James Watson (jwatson@SitesProject.org) <jwatson@SitesProject.org>; White, Kristin N <knwhite@usbr.gov>; Garcia, Donna <dcgarcia@usbr.gov>  
**Cc:** 'Spranza, John' <John.Spranza@hdrinc.com>  
**Subject:** [EXTERNAL] RE: Hold for Sites/USBR Ops Meeting

Hi All,

For the meeting tomorrow and in an effort to start from a common point of understanding, I am including the following:

- Workshop presentation (Kristen/Donna, the first 12 pages provide a good overall summary of where things stand)
- 2 Past email strings on operational scenario, Policy focused
- 2 Past emails from technical group

Thanks,

Thad.

---

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530.588.3450 (cell)



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

**From:** Thad Bettner  
**Sent:** Monday, November 18, 2019 8:37 AM  
**To:** Thad Bettner; Alicia Forsythe; James Watson (jwatson@SitesProject.org); Kristen White (knwhite@usbr.gov); Donna Garcia (dcgarcia@usbr.gov); Alicia Forsythe; James Watson (jwatson@SitesProject.org); Kristen White (knwhite@usbr.gov); Donna Garcia (dcgarcia@usbr.gov)

**Cc:** Spranza, John; Spranza, John

**Subject:** Hold for Sites/USBR Ops Meeting

**When:** Tuesday, November 26, 2019 8:00 AM-10:00 AM (UTC-08:00) Pacific Time (US & Canada).

**Where:** CVO

Reminder to hold meeting with USBR, CVO will send meeting invite when their email comes back up.

---

**From:** Kevin Spesert [kspesert@sitesproject.org]  
**Sent:** 11/28/2019 1:43:20 PM  
**To:** Alicia Forsythe [aforsythe@sitesproject.org]  
**CC:** Jim Watson [jwatson@sitesproject.org]; Rob Thomson [rthomson@sitesproject.org]  
**Subject:** Fwd: [env-trinity] Sites Reservoir could harm Trinity River, groups warn  
**Attachments:** Untitled

FYI

---

**From:** Nadine Bailey <nadine.bailey@sbcglobal.net>  
**Sent:** Thursday, November 28, 2019 1:03 PM  
**To:** Kevin Spesert; Jim Watson  
**Subject:** Fw: [env-trinity] Sites Reservoir could harm Trinity River, groups warn

Happy Thanksgiving.

Sent from Yahoo Mail on Android

----- Forwarded Message -----

**From:** "Tom Stokely" <tstokely@att.net>  
**To:** "Env-trinity" <env-trinity@velocipede.dcn.davis.ca.us>  
**Cc:**  
**Sent:** Thu, Nov 28, 2019 at 7:52 AM  
**Subject:** [env-trinity] Sites Reservoir could harm Trinity River, groups warn

# Sites Reservoir could harm Trinity River, groups warn

- By AMY GITTELSOHN The Trinity Journal

- 13 hrs ago

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A proposed new reservoir in the western Sacramento Valley isn't supposed to affect Trinity River fisheries, but river advocates say they've found the devil in the details.

The Sites Reservoir planned by the state in Colusa and Glenn counties is pitched as a means of catching and storing excess water from major storms. Located off-stream, water from the Sacramento River would be pumped to the new reservoir.

About half of the Trinity River's water is diverted to the Sacramento River each year for Central Valley Project uses. However, under the Trinity River Record of Decision, a set amount of water is also released to the river each year based on water year type.

The draft Environmental Impact Report/Statement for the project indicates that it poses no significant impacts on water quality to the Trinity River.

Opponents of the plan disagree, saying the trouble is with changes to the timing of water diversions.

Tom Stokely, a former Trinity County Natural Resources planner who is now a board member for Save California Salmon, said the project has "significant impact to the Trinity River that was not disclosed."

The Pacific Coast Federation of Fishermen's Association and Save California Salmon have been sharing what they found out about the project after a hydrologist with experience modeling studies related to operations of Trinity and Lewiston reservoirs reviewed the draft environmental report.

Hydrologist Greg Kamman debates the EIR's conclusions regarding impacts to the Trinity River.

Kamman concluded that the revised Trinity River Division water operations associated with the Sites Project will lead to increased water temperatures in Lewiston Reservoir during critical time periods in dry years, which in turn will cause releases of water to the Trinity River to be warmer.

Kamman said this is due to a general pattern seen in the data shifting operations in dry and critically dry years so the rate of diversions is increased through the winter months (December-March) and reduced through the summer/fall months (July-November). The latter will slow the flow of water through Lewiston Reservoir, allowing it to warm up more.

Increased river water temperatures in the fall are especially a concern, he said, noting that October is a time when meeting downstream temperature objectives is already compromised.

Any increase in temperature of water released to the Trinity River would increase the potential for violations of objectives established under the Trinity River Record of Decision to protect out-migrating juvenile salmon, Kamman wrote.

The evaluation in the environmental study doesn't take these temperature changes into account.

Further, Kamman notes that the environmental study doesn't include in its analysis the 50,000 acre-feet of water to be released each year for Humboldt County and downstream water users.

The Humboldt County Board of Supervisors has supported the project if it doesn't harm the Trinity River, but will soon consider calls to withdraw that conditional support.

Trinity County so far hasn't weighed in on the Sites project, but its Trinity County Fish and Game Advisory Commission is drafting a letter recommending that the Board of Supervisors here get involved.

The Sites Reservoir potential impact on the Trinity River was raised at the last meeting of the advisory commission by member Richard Cole of Lewiston.

It was noted that under the Record of Decision, the total volume of river flows is set depending on what year type. However, there was agreement by fisheries experts on the commission that Trinity Lake levels could be drawn down in a way that could affect river temperatures in dry years.

The advisory committee unanimously voted to draft a letter asking the supervisors to join others in requesting that a new Environmental Impact Report be completed which considers impacts to the Trinity River.

Stokely, from Save California Salmon, said he'll recommend to the Humboldt and Trinity County supervisors that they request a water right condition be placed on the water rights application for Sites that no Trinity River water be used to fill the Sites Reservoir unless the Trinity River Division is making Safety of Dams releases and Shasta Lake is making flood control releases at the time.

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<http://www2.dcn.org/mailman/listinfo/env-trinity>