

Sites Project Update

September 9, 2021



Agenda

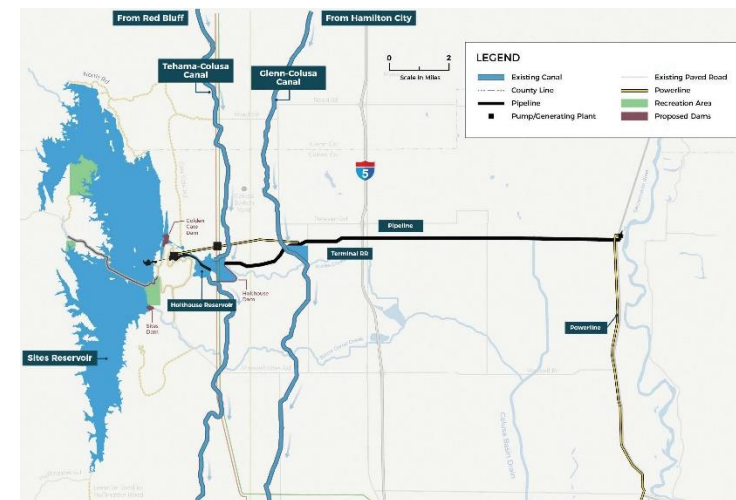
1. Introductions
2. Project History
3. Preferred Project
4. Overview of Project Operations
5. Schedule

Project History and Current Status



Original Proposed Project and 2017 Draft EIR/EIS Comments

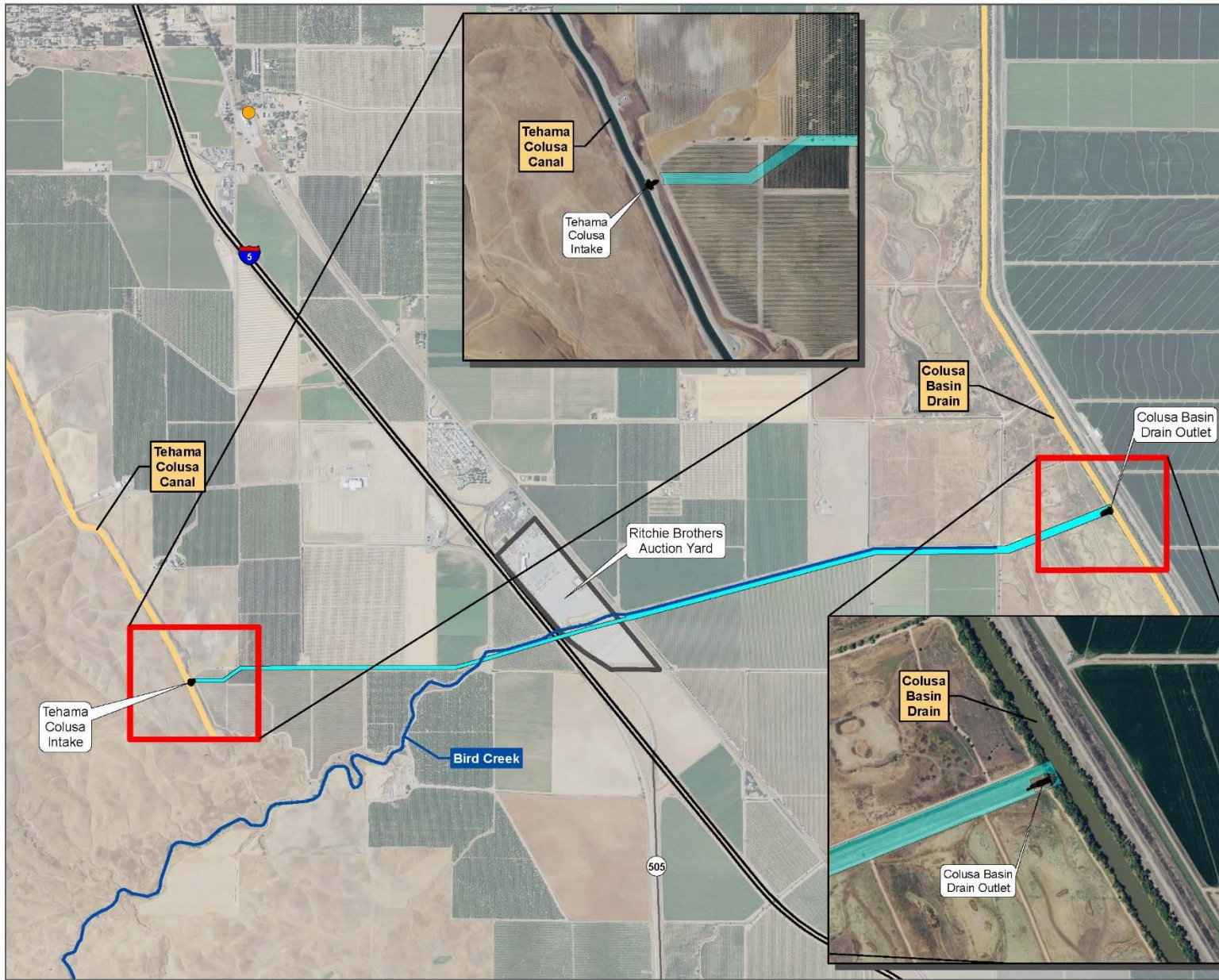
- Original Project:
 - 1.8 million acre-foot reservoir
 - 3 intakes (about 6,000 cfs diversion capacity in total)
 - New Delevan Pipeline and intake
 - Pump/generation facility
- 2017 Draft EIR/EIS – August 2017
- 137 comment letters received, 11 from conservation organizations



Alt 1 – Authority’s Preferred Project

Facilities / Operations	Alternative 1
Reservoir Size	1.5 MAF
Diversion(s)	Diversion from Sacramento River into existing TC Canal at Red Bluff and the existing GCID Main Canal at Hamilton City
Conveyance Release / Dunnigan Release	Release 1,000 cfs into new pipeline to the Colusa Basin Drain
Releases into Funks and Stone Corral Creeks	Specific flow criteria to maintain flows to protect downstream water right holders and ecological function
Reclamation Involvement	<ul style="list-style-type: none"> • Funding Partner up to 7% Cost-Share • Operational exchanges
DWR Involvement	Operational Exchanges with Oroville and use of SWP facilities South-of-Delta
Hydropower	Incidental power generation up to 40 megawatts each at Funks PGP and TRR PGP

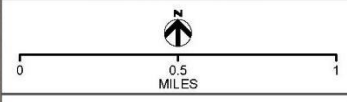
Alt 1 – Preferred Project



- LEGEND**
- City/Town
 - Bird Creek
 - Dunnigan Underground Pipeline

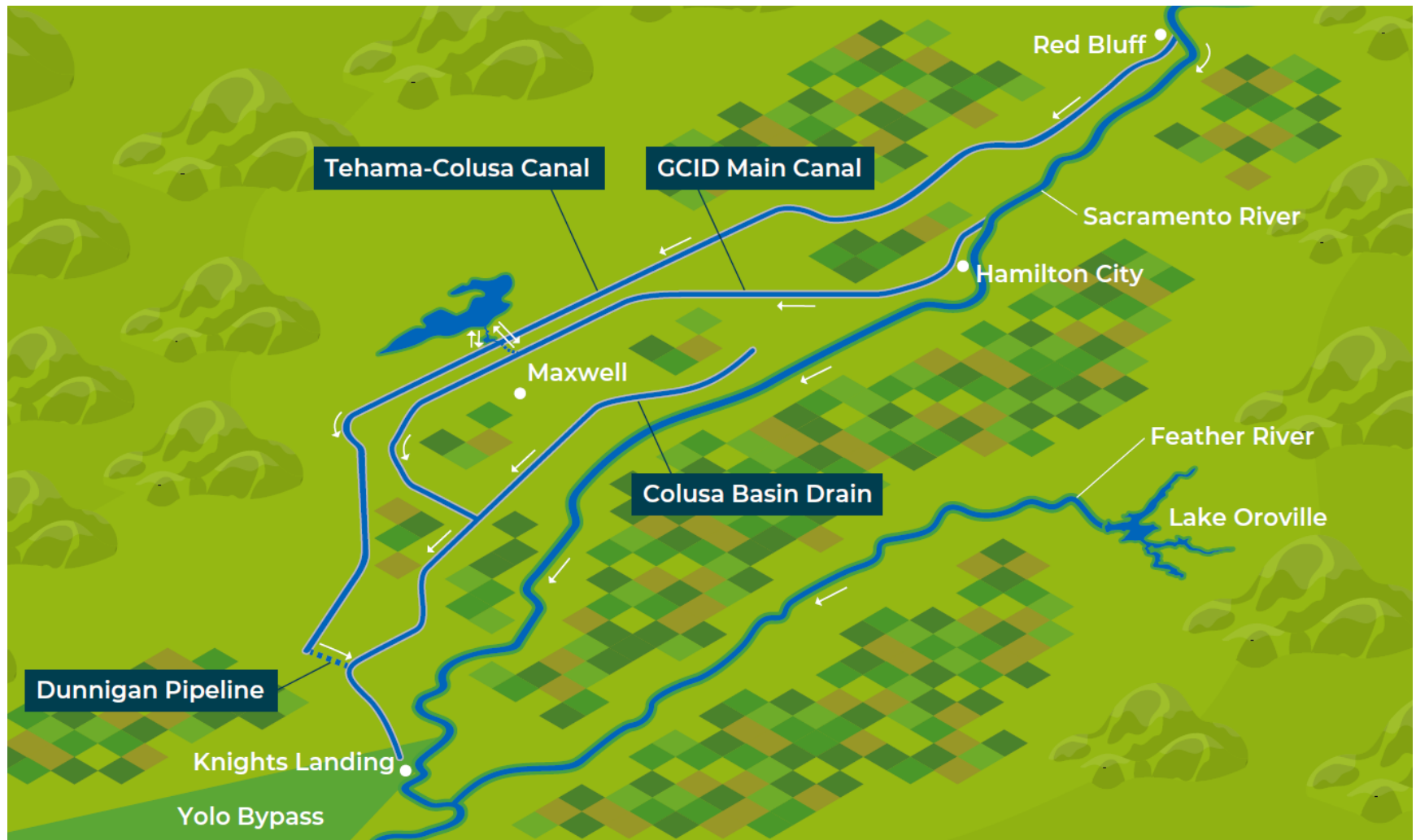
DATA SOURCES: City/Town - GNS, 2020; Project Features - AECOM, 2020; Canals (NHD) - USGS, 2018; Aerial Imagery (NAIP) - USDA, 2020.
 DISCLAIMER: This exhibit is preliminary and is subject to change.
 MAP DATE: 12/22/2020

FIGURE 2-2
 ALTERNATIVE 1 AND 3
 CONVEYANCE TO SACRAMENTO
 RIVER COMPONENTS



Overview of Project Operations

Project Water Operations

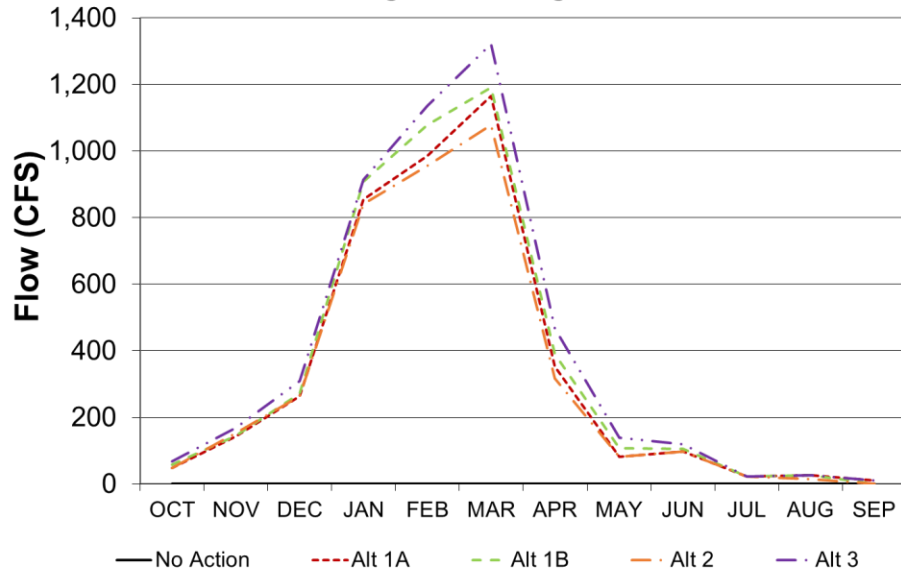


Operations Project Description

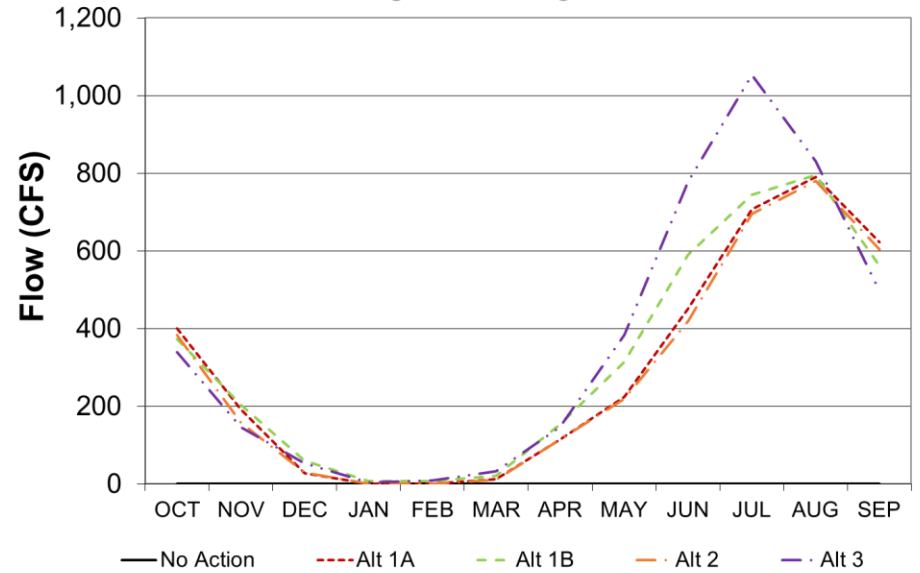
- Operational Criteria
 - Junior diverter – Diverting after all senior water rights and water quality and flow requirement are met
 - Diverting during “excess conditions” (as determined by Reclamation and DWR)
 - Diversion locations in priority:
 1. Red Bluff Pumping Plant into the Tehama-Colusa Canal
 - Up to 2,100 cfs diversion for Sites (plus losses), subject to other uses
 2. Hamilton City Pump Station into the GCID Main Canal
 - Up to 1,800 cfs diversion for Sites (plus losses), subject to other uses
 - Diversions when Sacramento River not fully appropriated (September 1 to June 15)

Diversions and Releases

Total Sites Diversion to Fill
Long-term Averages



Total Sites Release
Long-term Averages



Water Rights



Purpose of Use

- How water diverted into Sites Reservoir would subsequently be used
- Generally follow the purposes of use in the SWP and CVP water right permits
- Purpose of Use:
 - Irrigation
 - Domestic
 - Municipal
 - Industrial
 - Water Quality
 - Recreational
 - Fish and Wildlife Preservation and Enhancement
 - Incidental Power Generation
- Working with State Board staff on how to address groundwater replenishment, contributing to the goals of SGMA

Source

- Sources:
 - Sacramento River
 - Stone Corral Creek
 - Funks Creek

Diversion to Off-stream Storage

- How much the project seeks to divert and store over what time period
- Request would be consistent with the available canal capacity and facilities to move water into Sites
- Season limited to the season when the Sacramento River is not fully appropriated
- Storage of up to 1.5 million acre-feet per year from all sources

Points of Diversion

- Locations where the project would divert water (or take “control” of water)
- Points of diversion:
 - Tehama-Colusa Canal (existing, screened facility)
 - Glenn-Colusa Irrigation District’s Main Canal (existing, screened facility)
 - Sites Dam
 - Golden Gate Dam

Releases from Sites for Storage Partners

- Storage Partners –
 - Those that have funded and received a Storage Allocation in Sites Reservoir and the resulting water supply or water supply related environmental benefits
 - Includes local agencies, the State of California, and the Federal Government
- Partners along the TC Canal and GCID Main Canal
- Partners along the Sacramento River
- Partners along the Colusa Basin Drain, Yolo Bypass, and North Bay Aqueduct
- Partners South-of-Delta

Points of Rediversion

- Waterways where water previously diverted for the project could be re-diverted
- Points of re-diversion:
 - North Bay Aqueduct
 - Contra Costa's facilities
 - Reclamation's Rock Slough Intake
 - SWP Delta and South-of-Delta facilities
 - CVP Delta and South-of-Delta facilities

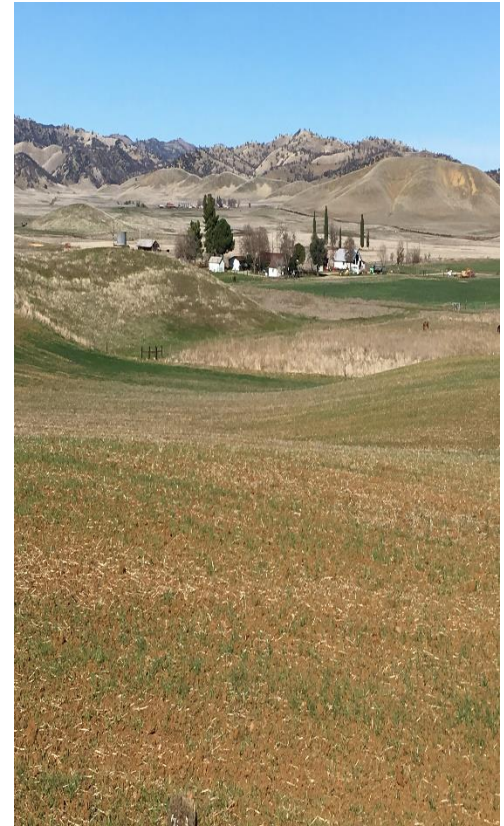
Place of Use

- Area where water diverted to storage could subsequently be used
- Place of Use:
 - Sites Reservoir, associated facilities and recreation areas
 - CVP and SWP place of use upstream of the Delta where water from Sites Reservoir can physically be delivered
 - All areas of Colusa County where water from Sites Reservoir can physically be delivered
 - Entire CVP and SWP area of export
- Place of use includes Yolo Bypass

Schedule

Schedule Overall

- Fall/winter 2021
 - Revised Draft EIR/Supplemental Draft EIS Released
- December 2021
 - Biological Assessment to Agencies
 - Submit State ITP Applications
- Spring 2022
 - Final EIR/EIS
- Spring 2023
 - All permits obtained
- Spring 2024 Construction Begins



Water Right Schedule

- Late Summer – Revised Draft EIR/Supplemental Draft EIS
- December 2021 – Submit Application
- Early 2022 – State Board Notice
- Spring 2022 – Final EIR/EIS
- Spring/Summer 2022 – Formal Protest Resolution Period
- Winter 2022/Early 2023 – Hearing (if needed)
- Spring 2023 – State Board issues Order and water right

Action Items and Next Steps



Thank you!

Operations Project Description (cont.)

- Diversion Criteria
 - Pulse flow protection implemented at Bend Bridge:
 - Each pulse protected (previously protected one pulse per month)
 - Pulse “reset” to differentiate between pulses
 - Wilkins Slough Bypass flow requirements:
 - 8,000 cfs April/May
 - 5,000 cfs all other months
 - Fremont Weir Notch:
 - Objective is to limit changes to frequency and duration
 - Model:
 - First 600 cfs held to 1% change
 - 600 – 6,000 cfs held within 10%
 - No restriction above 6,000 cfs





Modeling and Baseline

Additional Topics from the Group

- Any additional questions or thoughts?
- Topics for the next meeting?

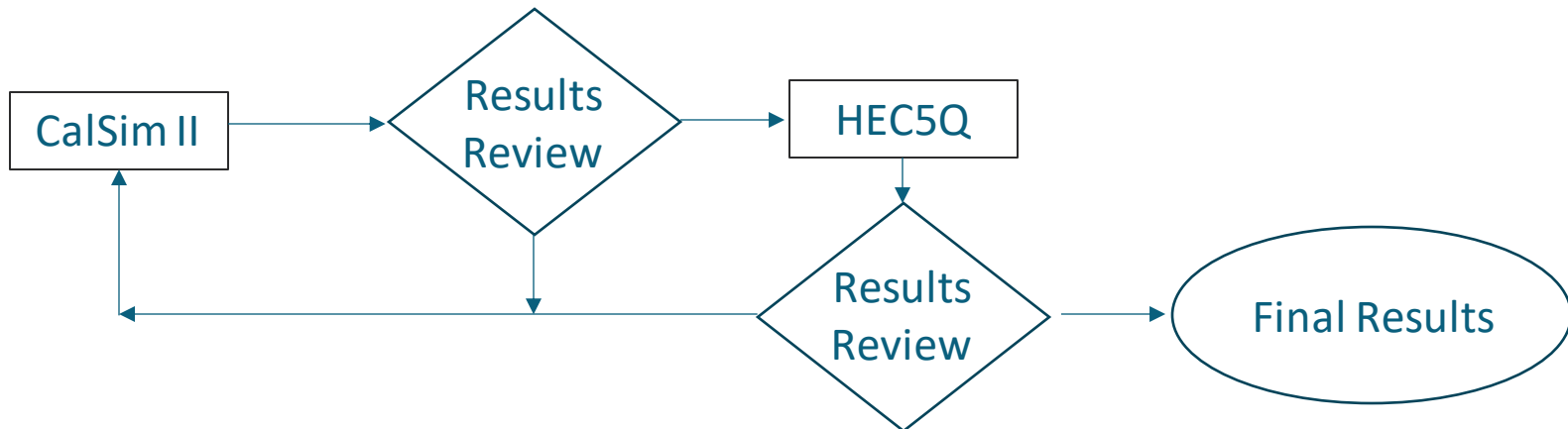


Baseline

- 2020 Benchmark CalSim II Model
 - Existing conditions
 - 2019 BiOps and 2020 SWP ITP
- Developed by Reclamation in coordination with DWR and CDFW
- All baseline actions preserved in alternatives evaluated in Revised Draft EIR/Supplemental Draft EIS

Modeling Framework

- Develop operations in CalSim II
- Inform secondary models with CalSim II results
- Update CalSim II based on analysis of:
 - CalSim II results
 - Secondary model results



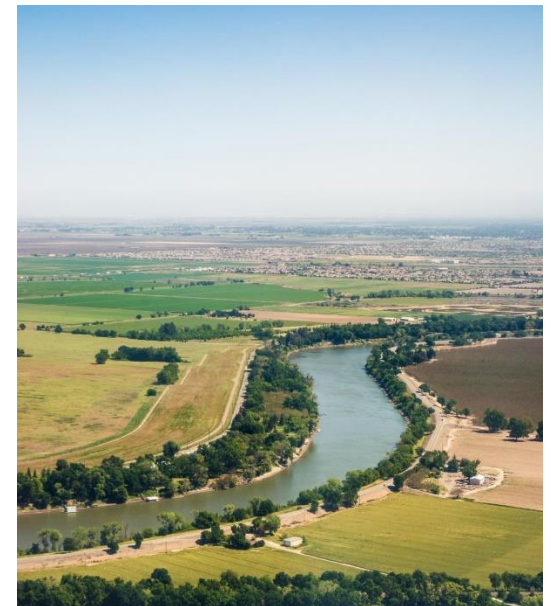
CalSim II Model

- Monthly hydrologic operations model
- Developed and maintained by Reclamation and DWR
- Simulates operations of CVP and SWP over a range of hydrologic conditions
- Allows for specification and achievement of user-specified allocation targets



DSM2

- 1-Dimensional Hydrodynamic Model of the Sacramento – San Joaquin River Delta
- Developed by DWR
- Inputs are informed with CalSim II results
- DSM2 Modules:
 - HYDRO: Hydrodynamics
 - QUAL: Water Quality
- Informs aquatics models



HEC5Q

- 1-Dimensional reservoir operation, routing and temperature model
- Sacramento and American Rivers
- Inputs are informed with CalSim II results
- Considers reservoir operations, temperature control devices (TCDs) and meteorology
- Informs aquatics models



Reclamation Temperature Model

- 1-Dimensional reservoir operation, routing and temperature model
- Feather River
- Inputs are informed with CalSim II results
- Considers reservoir operations and meteorology



Winter-Run Early Life Stage Mortality

- Two methods:
 - Martin model: Considers temperature throughout redd's lifespan
 - Anderson model: Considers a 5-day “critical period” before hatching
- Relied upon for real-time operations
- Informed with results of HEC5Q model



SALMOD

- Evaluates mortality as a function of flow and temperature
- Considers mortality at several stages of the life cycle
 - Spawning
 - Egg incubation
 - Alevins
- Not a life-cycle model
 - Assumes same number of female returning spawners each year
- Inputs are informed with results of HEC5Q model

Additional Models

- IOS, conducted by Cramer Fish Sciences
- OBAN, conducted by QEDA
- Juvenile Chinook salmon flow-survival threshold analysis (Michel et al. 2021), conducted by ICF
- Various in-river and Bay-Delta species- and effect-specific analyses, conducted by ICF

