South Delta Gates Project



April 2, 2025

California Department of Water Resources With the U.S. Bureau of Reclamation

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- Commenters will be called on in the order in which they 'raise their hands'
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- Please focus comments on the SDG project scope and effects. Please respect everyone's time and each other.



Agenda	Subtopics
Background	 Overview (Jacob McQuirk,
	Current conditions: Tempor
South Delta Gates Project	Potential Scope & Location
	Early Evaluations (Robert ⁻
	 Modeling Framework (Mich
Open Discussion: Q&A	
5 min break	

South Delta Gates Project, continued	 Geotechnical Investigation
	Hamamoto, DWR)
	Permitting, CEQA and NEF

Plain, USBR)

Open Discussion: Q&A



- DWR & Todd Plain, USBR)
- rary Barriers Project (Jacob McQuirk, DWR)
- ns (Kate Le, DWR)
- Trang, DWR)
- hael MacWilliams, FlowWest)

, Cultural Surveys, Tribal Engagement (Lesley

PA Processes (Lesley Hamamoto, DWR & Todd

Meeting Purpose

- Introduce the potential South Delta Gates (SDG) Project
- Engage with, and solicit input from, the public and interested parties of the potential SDG project
- Provide updates regarding preliminary activities and next steps



ates (SDG) Project ne public and

Project Partnership

- CA Department of Water Resources (DWR) is managing the project
- US Bureau of Reclamation (USBR) and DWR share benefits and financial responsibility
 - Potential cost is \$200M
- South Delta Water Agency supports the proposed project objectives









Current Conditions

Temporary Rock Barriers

- Constructed annually (May-Nov)
- Minimize adverse water level impacts to local agricultural diverters within the South Delta Water Agency
- Remain in place May-November

Barrier Installation Cons:

- Impacts to fish species
- Operational limitations, duration of construction
- Emissions and other construction-related impacts
- Cost of annual installation





Temporary Rock Barrier, Old River, 2015.

South Delta Gates Background CALFED Record of Decision (2000) – identified installation of

- permanent operable gates
- CALFED Bay-Delta Authorization Act (Title I of P.L. 108-361) (2004) – congressional authorization for CALFED activities
- South Delta Improvement Program (SDIP) DWR and USBR jointly intended to implement the program and prepared Final **Environmental Impact Statement / Environmental Impact Report** (FEIS/EIR; 2006). USBR was the federal sponsor and NEPA lead.
- The SDIP program development was not finalized.
- State appropriation of \$43.7 M for SDG (2023)



Need for Potential Project

In the South Delta maintaining adequate water levels is a challenge

Additional challenges include:

- Reduced water quality
- Fisheries issues
- Climate variability







Potential Project Goals

- Improve water level management for agricultural and local diversions
- Enhance water quality by inducing circulation via tidal flow and gate operation
- Improve fish passage
- Improve options for response to climate variability
- Improve boat passage



South Delta Gates Potential Locations



Conceptual Drawings







****CONCEPTUAL – Subject to Revision****

Potential Benefits

- State-of-the-art, permanent solution
- Could improve operational flexibility with gates operating near real-time
- Could improve water level protection for local diversion
- Could improve water circulation \rightarrow improved water quality
- Could reduced environmental impacts, including to listed fish species and associated mitigation





Banks and Tracy Pumping Plants

Upstream to San **Joaquin River**

Temporary Rock Barrier – Schematic Drawing



Obermeyer Operable Gate – Conceptual Drawing

Early Evaluations

- Starting place for discussion to bring our best thinking to the public-input process
- Soliciting feedback prior to initiating planning and design efforts
- Early engagement and collaboration so we have a potential project that benefits the public and interested parties
 - **Vessel Traffic**
 - Fish Passage
 - **DWR Preliminary Gate Type Evaluation**



Vessel Traffic Analysis

September-November 2024

- Developed South Delta Gates Project
 Vessel Traffic Assessment Technical Memo
- Memo provides a qualitative and quantitative assessment of vessel traffic
- Data Obtained
 - Interviews (recreational boaters, law enforcement, marine contractors, and regulatory agencies)
 - DWR records
 - Vessel Automated Identification System (AIS)









TECHNICAL MEMORANDUM

Prepared for ESA and California Department of Water Resources November 2024

South Delta Gates Project Vessel Traffic Assessment



Vessel Traffic Analysis

Preliminary Design Considerations

Entity	Length (ft)	Beam (ft)	Draft (ft) 1)	Vesse
Marinas ²⁾	35.0	10.0	4.5	Recre
Sheriff ²⁾	38.0	13.0	4.0	Firebo
Reclamation District ²⁾	21.0	6.0	2.0	Bosto
U.S. Coast Guard ²⁾	31.6	8.4	2.8	Port 8
CA-DBW ²⁾	70.0	14.0	3.0	FAV H
Commercial ²⁾	105.0	19.7	12.0	Comn
Marine Contractors 3)	230.0	60.0	10.0	Large

Estimated.

Active in the South Delta.

3) Representative of the largest floating equipment marine contractors have used for work in the South Delta.

- Physical constraints in the south Delta channels
- Lock dimensions for boat passage at Old River and Grant Line Canal
- Gate type and configuration





el Type

ational Vessel

oat

on Whaler

& Waterways Boat

Harvester

mercial vessels

Deck Barge

Fish Passage Analysis

- Coordination meetings with fishery agencies since late 2024
- Onboard Consultant RMA to develop 2D computer model for Fish Passage Design (September 2024)
- **Evaluate Fish Passage opening** size/placement and water velocities
- Modeling Tools:
 - Delta Simulation Model II: 1-D model
 - Hydrologic Engineering Center River Analysis System (HEC-RAS): 2-D model



CALIFORNIA DEPARTMENT OF ER RESOURCES

Entire Delta

- DSM2 (1-D)
 - Tidal flows

 - Long simulations (months/years)

Average velocities

Explore gate operations

 Provides flows & water levels to HEC-RAS

Single Channel

• HEC-RAS (2-D)

- · Constant flow
- Velocities across channel
- Study gate location (center vs side of channel)
- Explore energy dissipation to reduce velocities (e.g. baffles)

Fish Passage Analysis

DSM2 Mean Velocity through Fish Passage May - Nov 2021



DWR Preliminary Gate Type Evaluation

Μ MACDONALD

May-August 2024

- Developed project requirements and constraints based on project goals
- Conducted DWR discipline consultations
- Developed multi-criteria analysis and evaluation methodology
- Facilitated internal DWR workshop discussions and scoring
- Gate Evaluation Report (August 2024)







South Delta Gates (SDG) **Evaluation**

Multi-Criteria Analysis

August 2024

CA Department of Water Resources

DWR Preliminary Gate Type Evaluation

Conclusions and Areas of Further Study

- Top score at Grant Line, Middle River, and Old River include Bottom-Hinged and Radial Gates
 - Bottom-hinged gates: Potential navigation and environmental benefits due to greater width. Concerns with maintainability.
 - Radial gates: Meet requirements. Have lower maintenance requirements and high reliability.





Modeling Framework Overview

Purpose:

- Document modeling approach to evaluate the effects and potential benefits to water surface elevation (WSE), water quality (WQ), and fish passage from SDG
- Support design of SDG structures and fish passage openings
- SDG Modeling Framework Models:
 - DSM2: Primary modeling tool
 - SCHISM: Special studies that require detailed full-delta hydrodynamics
 - HEC-RAS 2D & OpenFOAM: Fish passage design
- Expected Outcome:

R RESOURCES

SDG Operations Framework: Establish the operational triggers for the opening and closing of each of the SDG to balance objectives and benefits





Modeling Framework Schedule

SDG Operations Framework outcome: Establish the operational triggers for the opening and closing of each of the SDG to balance objectives and benefits.

		20	25		
	Q1	Q2	Q3	Q4	Q1
Historical and Baseline Conditions					
Analyze Potential Benefits of SDG					
Engagement on Modeling					
Future Conditions					
Special Studies					
SDG Operations Framework					







Open Discussion – 15 minutes

Break – 5 Minutes



South Delta Geotechnical Investigations

- On-land and in-water drilling
- Soil evaluations
- Estimated start:
 - April July 2025 on land
 - Late Summer 2025 in water
- Estimated 12-month duration





Tribal Engagement

- State Laws and Policy:
 - California Environmental Quality Act (CEQA)
 - Tribal Cultural Resources
 - (Assembly Bill 52)
- Executive Orders
- DWR Tribal Policy
- CA Natural Resources Agency Tribal Consultation Policy





Cultural Resources

- Cultural Resources Review:
 - Literature Review
 - California Historical Resources Information System (CHRIS) **Record Search**
 - Pedestrian Survey



Permitting for Construction

- Water Quality Certification (Clean Water Act Section 401)
- Individual Permit (Clean Water Act Section 404)
- **Rivers and Harbors Act Section 10**
- Lake and Streambed Alteration Agreement (F&GC Section 1600 et seq.)
- California Endangered Species Act Incidental Take Permit
- Delta Plan Consistency





California Environmental Quality Act (CEQA)

- Beginning preparation of an Initial Study (IS)
- Mitigated Negative Declaration (MND) or Environmental Impact Report (EIR)





National Environmental Policy Act (NEPA; Federal Compliance)

- Possibly start with Environmental Assessment (EA)
- If significant impact, then possibly elevate to Environmental Impact Statement (EIS)
- Cooperating Agency Request letter (Reclamation to US Army Corps of Engineers)
- Environmental Species Act (ESA) formal/informal TBD Extent of National Historic Preservation Act (NHPA) consultations TBD



Anticipated Project Schedule

	2025	2025			2026	2027	2028	2029	2030
	WINIER	SPRING	SUMMER	FALL					
Geotechnical investigations – Land		*							
Geotechnical investigations – Water			*						
Design			*	*	*	*			
Environmental review and permitting	*	*	*	*	*	*			
Construction							*	*	
Gates operational									*







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Jacob McQuirk, DWR Program Manager Jacob.McQuirk@water.ca.gov



Open Discussion





Thank you!

Next Biannual Meeting: Fall 2025