South Delta Gates Project

Biannual Meeting #2: October 14, 2025

California Department of Water Resources
with the US Bureau of Reclamation

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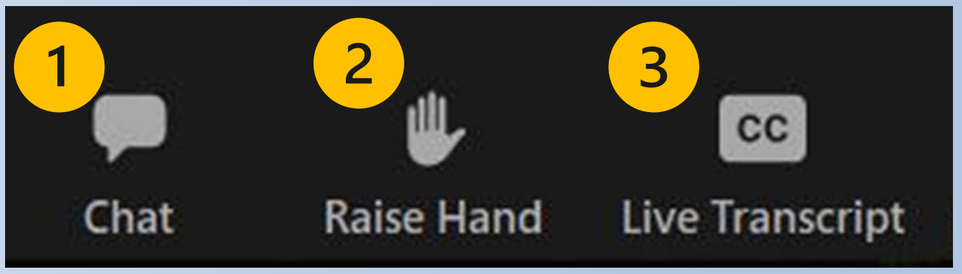

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Ground Rules

Discussion sessions will occur at the halfway point and again at the end of the presentation.

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- Please focus your comments on the SDG project scope and effects.
- Please respect everyone's time and each other.

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Agenda Item	Speaker
1. Zoom Webinar and Agenda	Shay Humphrey, ICF, Facilitator
2. Welcome and Introduction	Jacob McQuirk, DWR, Program Manager Todd Plain, USBR, Project Manager
3. Project Overview	Kate Le, DWR, Project Manager
4. Design and Other Planning	Kate Le, DWR, Project Manager
5. Early Evaluation Status ▪ **Fish Passage Analysis** ▪ **Gate Type Evaluation**	Robert Trang, DWR, Supervising Engineer
6. Operations Framework Modeling	Michael McWilliams, FlowWest, Modeling Manager
7. Open Discussion	Shay Humphrey, ICF, Facilitator
8. Geotechnical Investigation	Rebekah Cesmat, DWR, Project Geology
9. Tribal Engagement	Lesley Hamamoto, DWR, Env Permit Manager
10. Environmental Compliance Update	Lesley Hamamoto, DWR, Env Permit Manager
11. Anticipated Project Schedule	Kate Le, DWR, Project Manager
12. Open Discussion, Closing	Shay Humphrey, ICF, Facilitator

Meeting Purpose

- Review key project information
- Provide updates regarding the potential South Delta Gates Project (SDG or project)
- Engage with interested parties for project planning

Review: 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

Review: Project Partnership and Support

- CA Department of Water Resources (DWR) is managing the project.
- US Bureau of Reclamation (USBR) and DWR share benefits and financial responsibility.
- Project Proponents:
  - South Delta Water Agency
  - Great Valley Farm Water Partnership

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BUREAU OF RECLAMATION

SOUTH DELTA WATER AGENCY

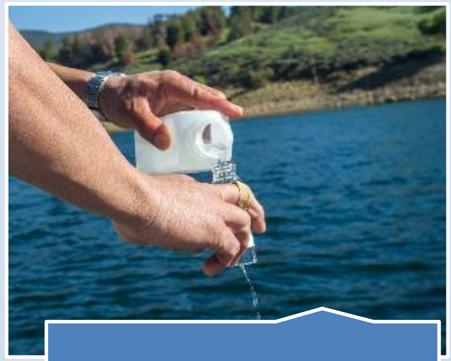
FARMER-TO-FARMER
GREAT VALLEY FARM WATER PARTNERSHIP

Review: South Delta Gates Project

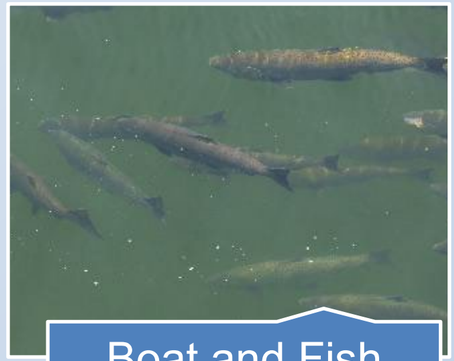
Purpose

To replace the existing temporary rock barriers with permanent operable gates to improve water level management while also improving water quality, fish passage, and reducing environmental impacts in the south Delta.

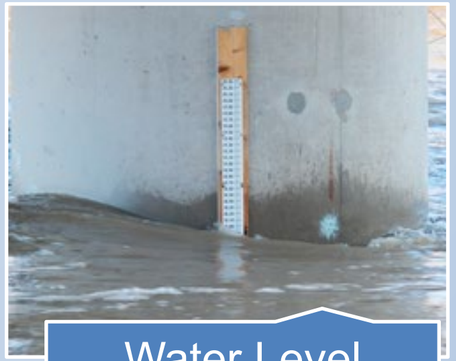
Benefits



Water Quality

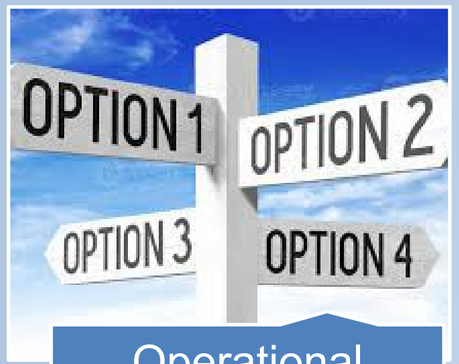


Boat and Fish Passage



Water Level Management

Climate Variability Management



Operational Flexibility

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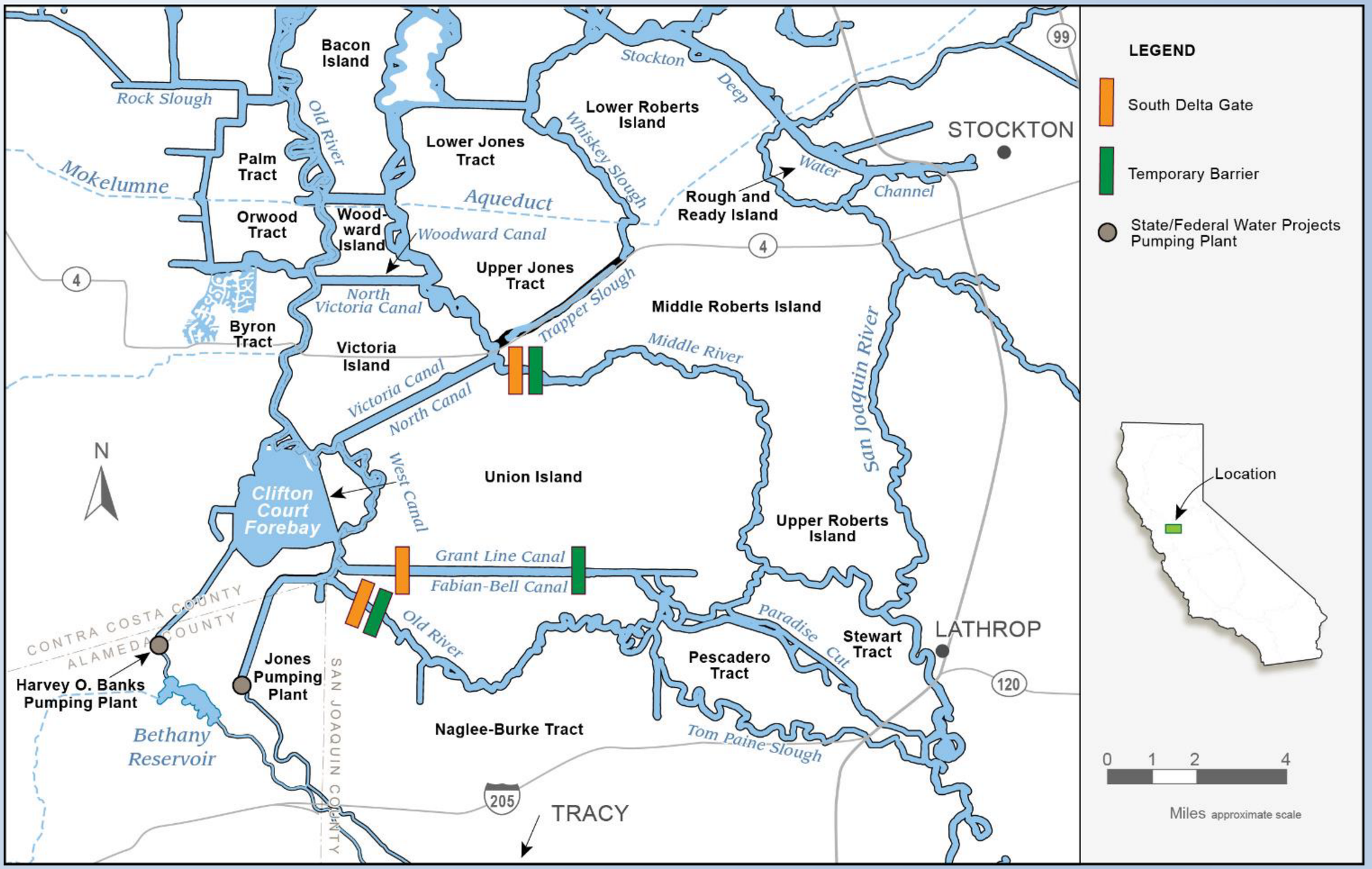
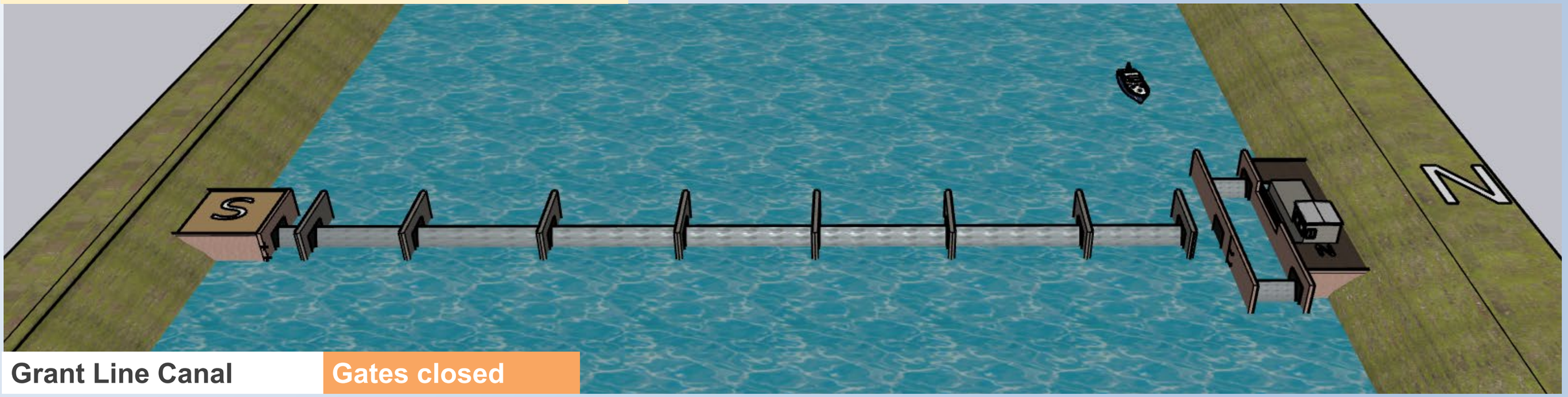
Review: South Delta Gates Potential Locations

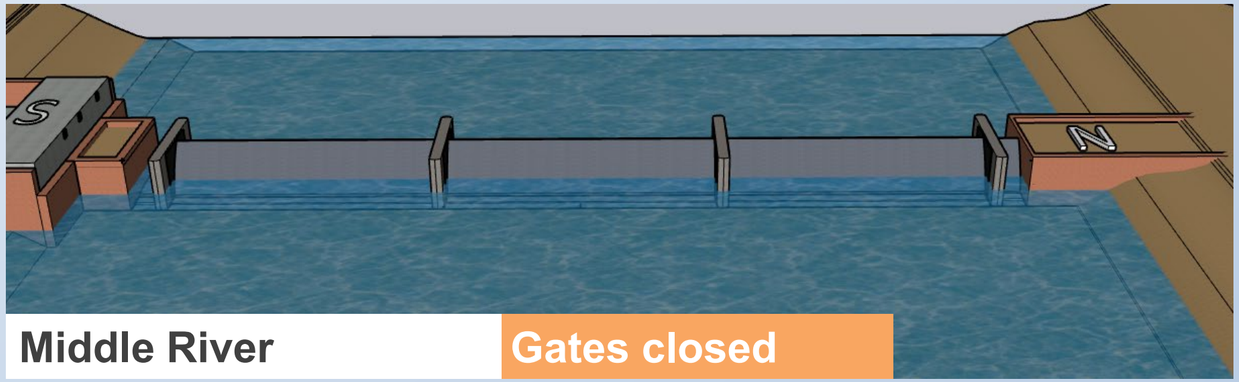


Review: Conceptual Drawings

** CONCEPTUAL – Subject to Revision **



Grant Line Canal | Gates closed



Middle River | Gates closed

Old River | Gates open

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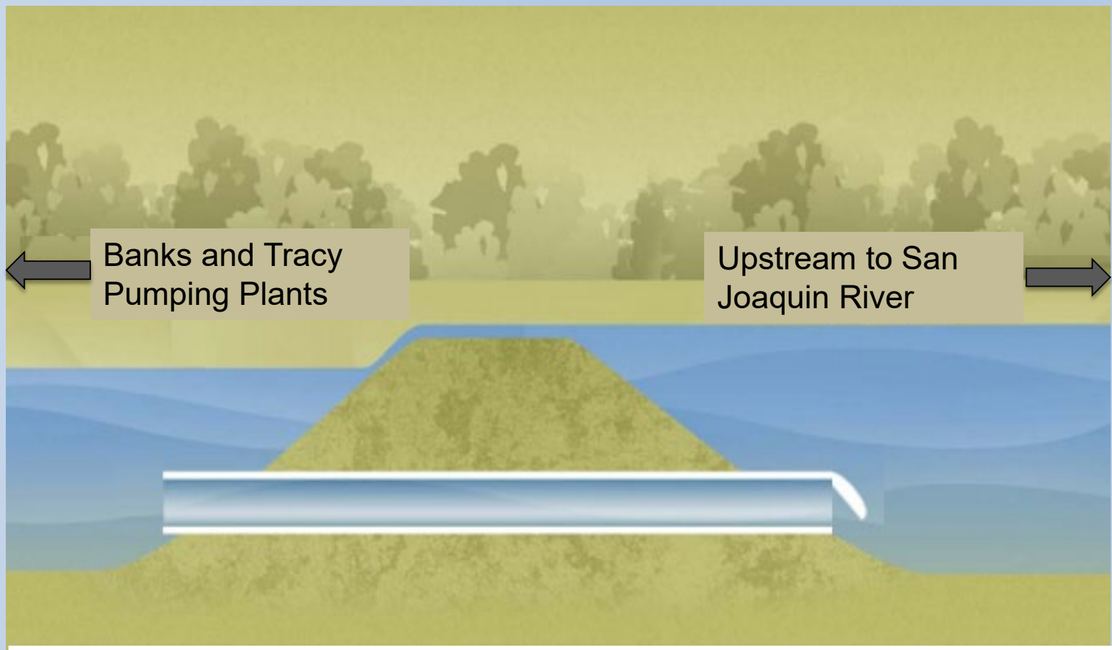
Review: Potential Benefits

- State-of-the-art, permanent solution
- Could improve operational flexibility with gates operating near real-time
- Could improve water level management for local diversion
- Could improve water circulation, resulting in improved water quality
- Could reduce environmental impacts, including those on listed fish species, and associated mitigation requirements



Schematic Drawing of Temporary Rock Barrier

Example of Bottom-Hinge Gate

Source: steelfabinc.com

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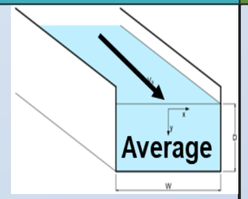
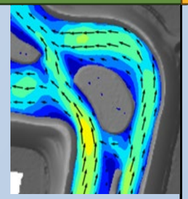
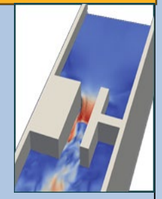
Design and General Updates

- Structural design contract is expected to be awarded by end of the year.
- Collaboration between DWR and USBR on a cooperative agreement continues.
- Ongoing project briefings to interested parties:
  - State and Federal Water Contractors
  - San Luis Delta Mendota Water Authority
  - Great Valley Farm Water Partnership

Review: Fish Passage Analysis 2024-2026

- Evaluate fish passage opening size and placement and water velocities. Fish passage likely a permitting requirement.
- Hold coordination meetings with fishery agencies.
- Modeling tools:

Entire Delta	Single Channel	Close to Gate
DSM2 (1D) • Tidal flows • Average velocities • Long simulations (month/years) • Provide flow and water levels to HEC-RAS → 	**HEC-RAS (2D)** • Constant and tidal flows • Velocities across channel • Refine fish passage design and location (center vs. side of channel) • Informs OpenFOAM modeling → 	**OpenFOAM (3D)** • Constant flow • Velocities in all directions in the immediate vicinity of gate and fish passage structures • Short simulations (few minutes) • Refine fish passage design 

Fish Passage Analysis

Criteria

- Preferred velocity for passage ≤ 8 ft/s
- Width passage ≥ 5 ft
- Depth ≥ 3 ft
- Species of interest: sturgeon, listed salmonids

Since Biannual Meeting #1 in April 2025

- Evaluated different passage widths.
- Passage may extend the full depth of water column to accommodate fish at all depths.
- Passage design will balance width, depth, and velocity criteria for the target fish species with other project objectives.

Gate Type Evaluation

Review: Top Scoring Gate Types

- **Bottom-hinged gates:** Potential navigation and environmental benefits due to greater width. Potential maintenance concerns.
- **Radial gates:** Meet requirements. Lower maintenance requirements and high reliability.

Since Biannual Meeting #1

- Recommending mechanically actuated bottom-hinged gates—which have wide gates, limited intermediate piers, and no overhead structure.
  - Optimize vessel navigation
  - Maximize environmental benefits
  - Ability to install stoplogs and dewater to perform required maintenance

Bottom-Hinged Gates

Radial Gates

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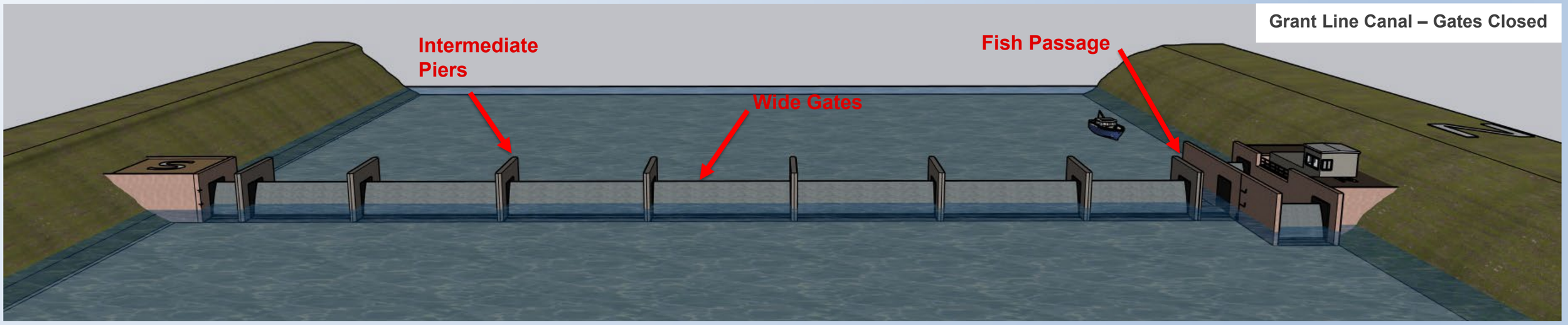
Conceptual Design

** CONCEPTUAL – Subject to Revision **



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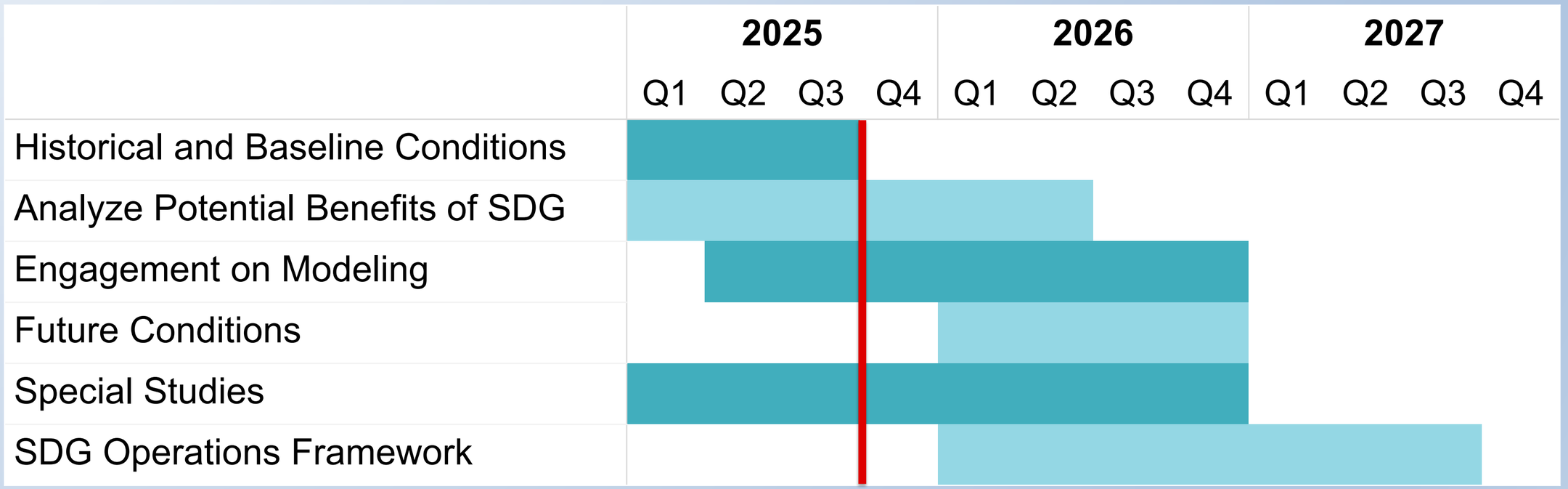
Modeling Framework Updates

- SDG Operations Framework purpose – Establish operational triggers for the opening and closing of each of the south Delta gates to balance objectives and benefits.
- Anticipated Schedule



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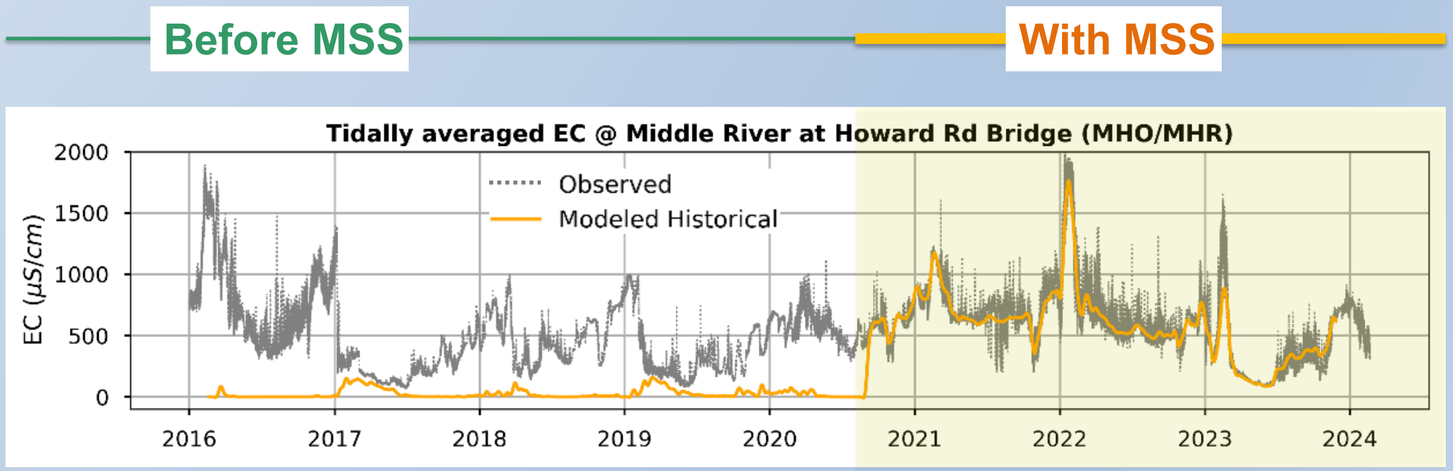
Modeling Framework Updates

- Completed updates to Delta Simulation Model II (DSM2) model to merge recalibration and Modeling Special Studies (MSS) versions (Jul 3, 2025 public release)
- Made improvements to DSM2 prediction of water surface elevations in the south Delta (Sept 18, 2025 public release)
- Refined DSM2 assumptions about gate geometry and energy losses
- Established new DSM2 baseline scenario and new SDG scenario
- Held first Technical Working Group (TWG) meeting on July 16, 2025



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Open Discussion – 15 minutes

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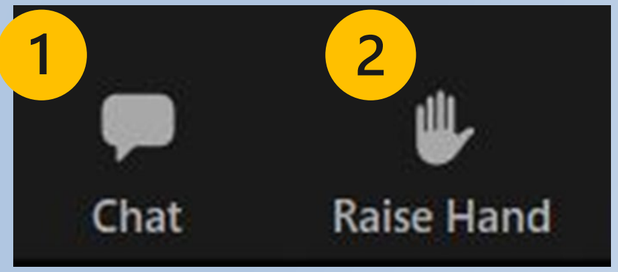

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South Delta Geotechnical Investigations

Why Geotechnical Data Is Needed

- Subsurface soil data will inform design

Geotech Outreach

- Calls with county supervisors
- Notifications to US Coast Guard and locals

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South Delta Geotechnical Investigations

Overwater Drilling

- Permits acquired in spring 2025
- Drilling began August 26, 2025
- Status
  - 12 out of 14 drill holes completed
  - Middle River site (completed)
  - Grant Line Canal site (completed)
  - Old River (active)
- End of drilling
  - Projected October 31, 2025

2025 Overwater Drilling Activities on site at Middle River

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South Delta Geotechnical Investigations

Proposed Land-based drilling

- Target start in 2026
- Grant Line Canal: 8 drill holes, 6 cone penetration tests
- Middle River: 9 drill holes
- Old River: 7 drill holes

Soi Core Sample

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Tribal Engagement

- Assembly Bill 52 notifications to Tribes were issued in early 2025. Project updates sent to Tribes in October 2025.
- DWR is currently in early stages of Consultation with several Tribal groups.
- DWR will continue conducting outreach biannually to interested Tribes.

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California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA)

- DWR will be the CEQA lead agency.
  - Anticipating CEQA Mitigated Negative Declaration (MND)
- USBR will be the NEPA lead agency.
  - Anticipating an Environmental Assessment/ Finding of No Significant Impact (EA/FONSI)
- CEQA/NEPA documents are expected to be circulated for public comment in late 2026.

Review: Permitting for Construction

Permit applications planned for submission beginning in summer 2026

- 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 (Fish and Game Code Section 1600 *et seq.*)
- California Endangered Species Act—Incidental Take Permit
- Delta Plan Consistency
- Endangered Species Act and National Historic Preservation Act consultations (USBR will be federal lead)

Anticipated Project Schedule

	2025	2026	2027	2028	2029	2030	2031	2032
Geotechnical investigations – Water	*							
Design	*	*	*	*				
Geotechnical investigations – Land		*						
Environmental review and permitting		*	*	*				
Construction (if approved)					*	*	*	
Gates operational (if approved)								*

Contacts

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Jacob McQuirk, DWR, Program Manager
Jacob.McQuirk@water.ca.gov, 916.873.5314

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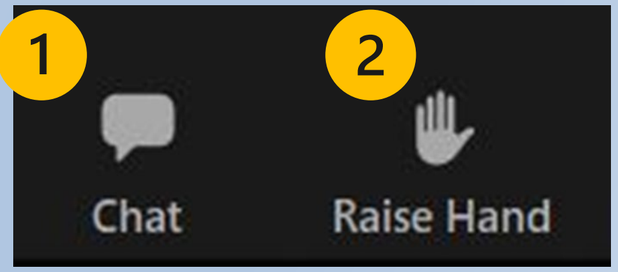

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Thank you!

Next Biannual Meeting:

- Spring 2026

Survey:

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