

Update on the Delta Tunnel

Contra Costa Special Districts Association

Presentation by:

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Soluri Meserve

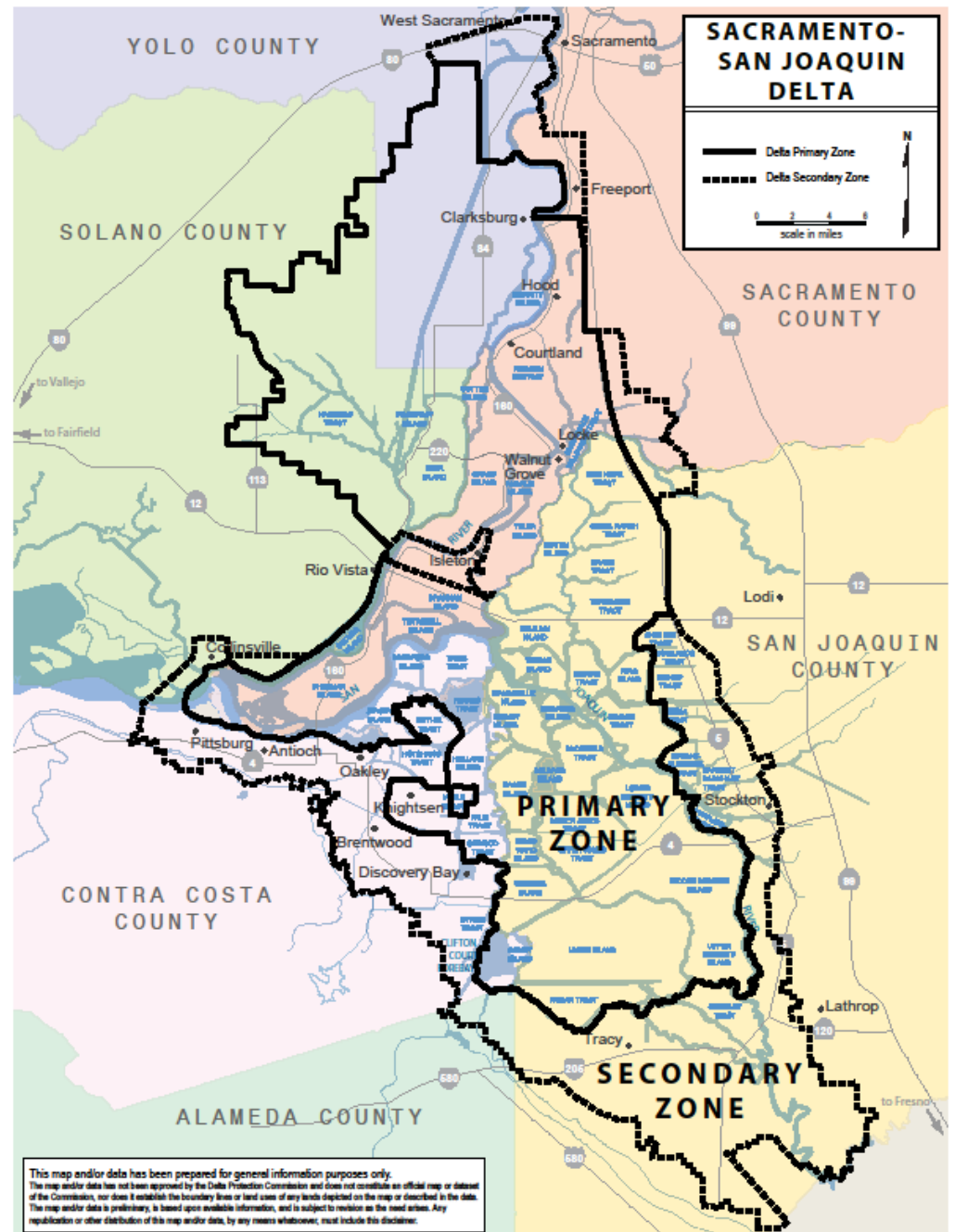
Ryan Hernandez
Contra Costa County

Presentation Outline

- **Sacramento-San Joaquin Delta**
- **Delta Tunnel Project Overview**
 - **Bethany Alternative - Preferred**
- **River Flows - Sacramento and San Joaquin**
- **Alternatives to the Tunnel**

Sacramento-San Joaquin Delta

National Heritage Area

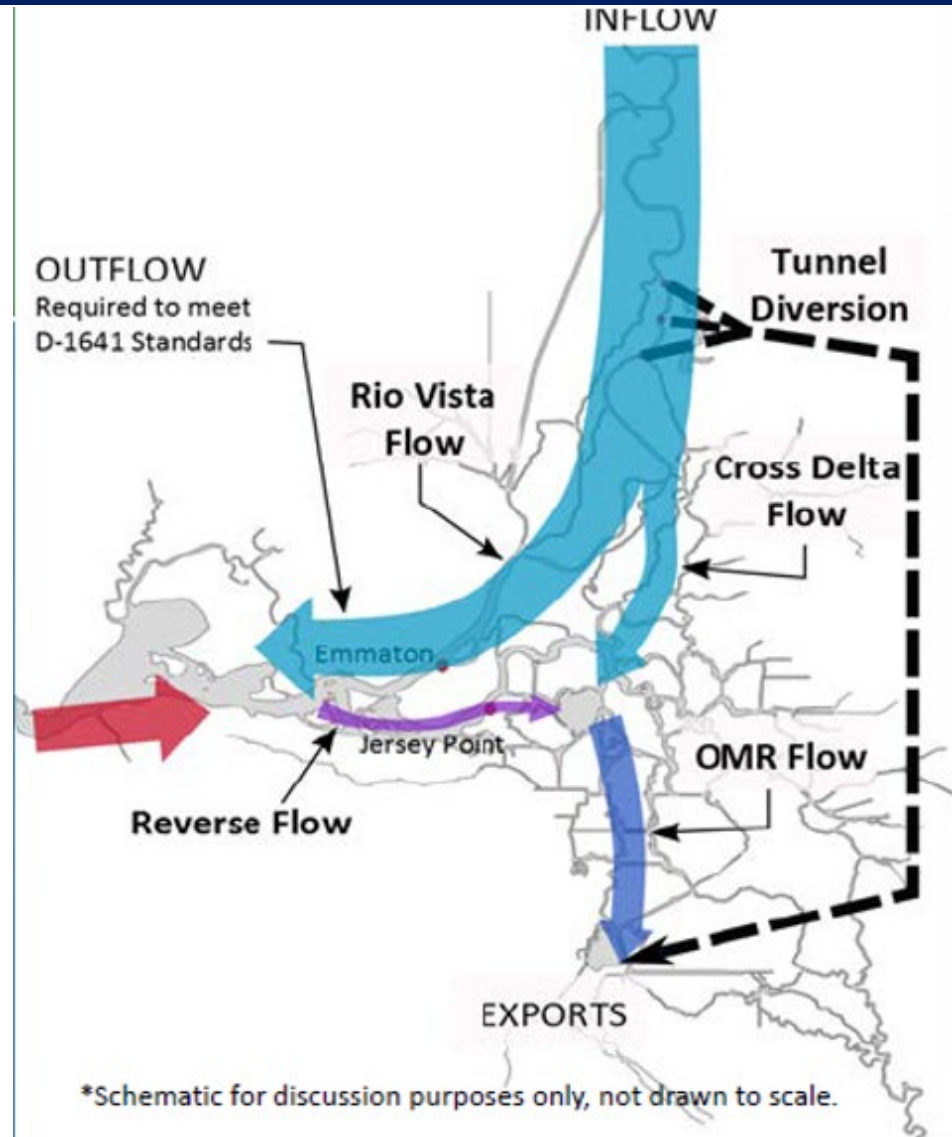


What is the Delta Tunnel?

The Delta tunnel project is the latest version of a massive State water infrastructure project to redirect Delta flows.

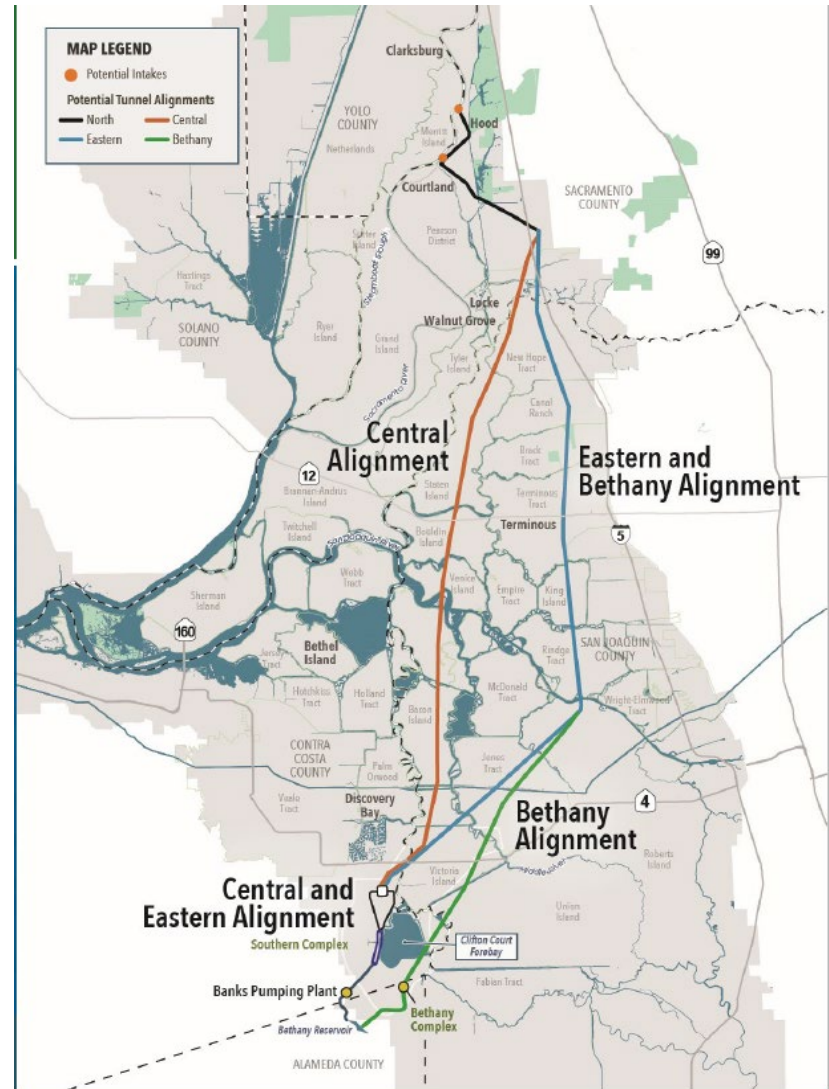
Previous names and programs associated with the concept include:

- Peripheral Canal (1940-1982)
- CALFED (1990-2000)
- Bay Delta Conservation Plan (2008-2014)
- California WaterFix (2015-2019)
- Delta Conveyance Project (Current)

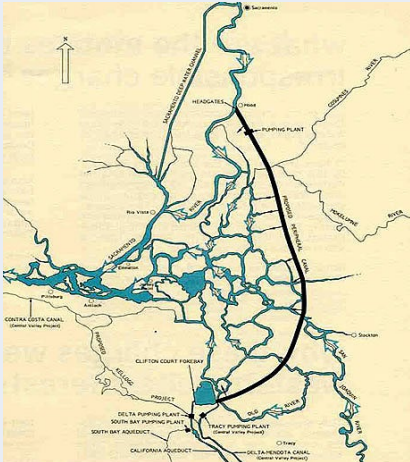
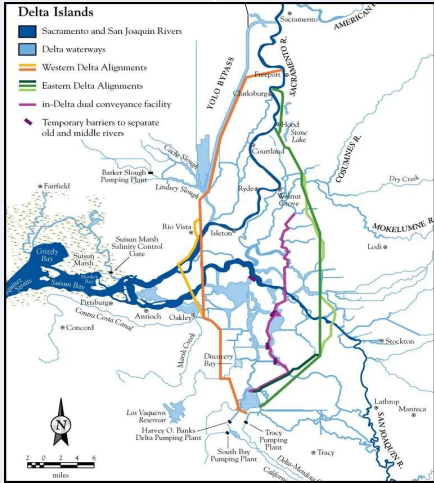
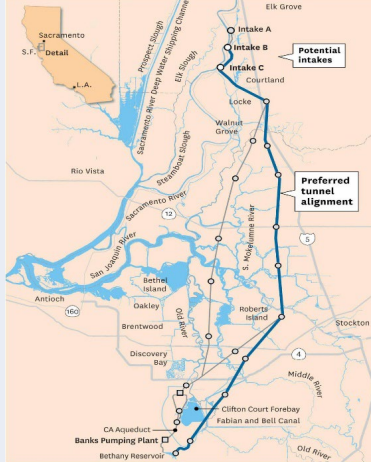


What is the Delta Tunnel?

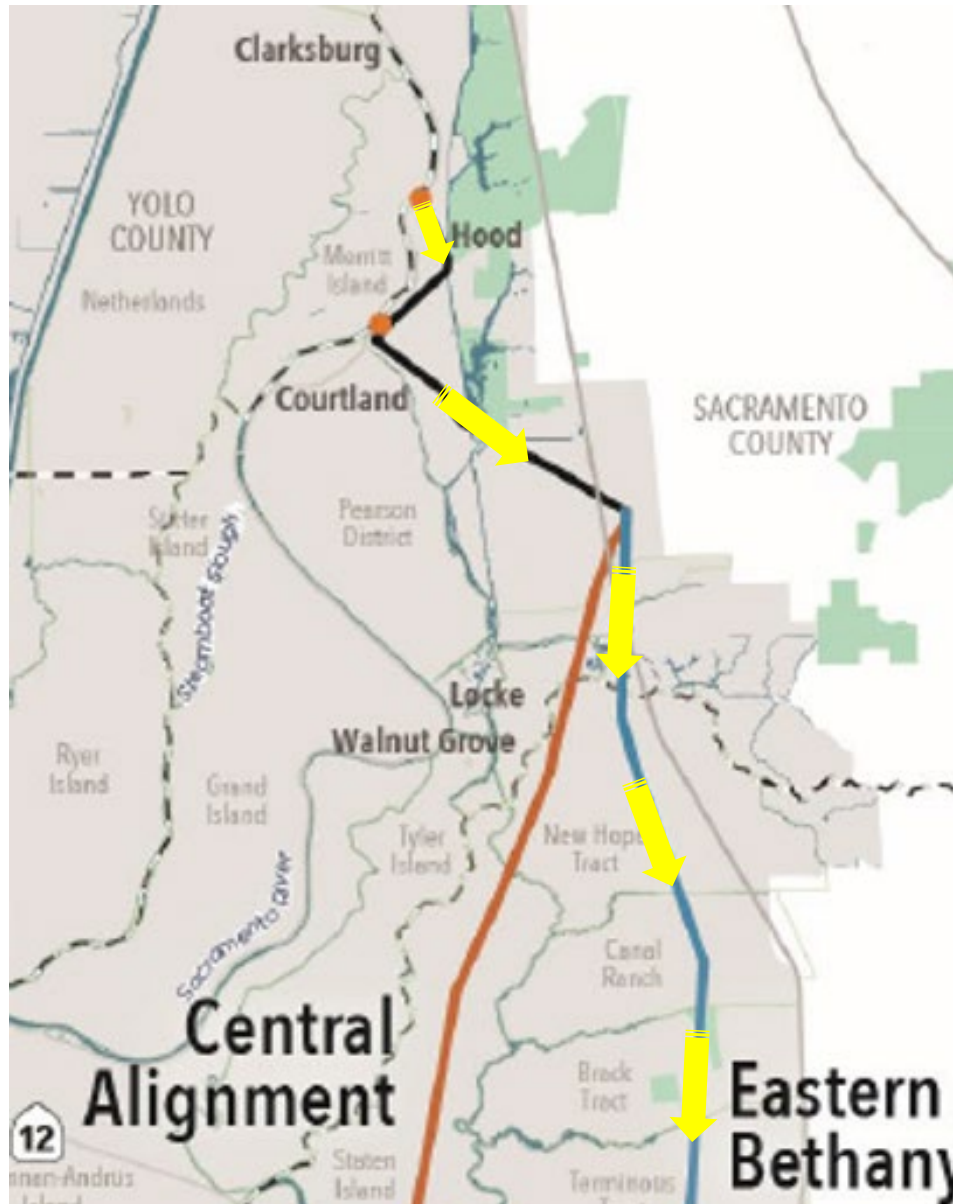
- **Would divert water from Sacramento River near Hood and Courtland;**
- **40-foot diameter concrete tunnel approx. 45 miles long;**
- **Buried 150 feet below the surface;**
- **Terminating at Bethany Reservoir (Preferred Project/Alternative 5).**



Delta Conveyance - Proposal Differences

	Peripheral Canal (1982)	BDCP (2008)	Cal. Water Fix (2017)	Delta Conveyance Project (2022)
Conveyance	Open Isolated Channel (43 miles long)	Two Tunnels (35 miles long)	Two Tunnels (35 miles long)	One Tunnel (45 miles long)
Intakes	1 near Hood	3 (Hood, Clarksburg, & Courtland)	3 (Hood, Clarksburg, & Courtland)	2 (Hood) to 3 (Clarksburg)
Capacity	23,000 cfs*	15,000 cfs	3,000 cfs/intake 9,000 cfs max.	3,000 cfs/intake (6,000 cfs)
Alignment	East Delta	Central Delta	Central Delta	East Delta
				

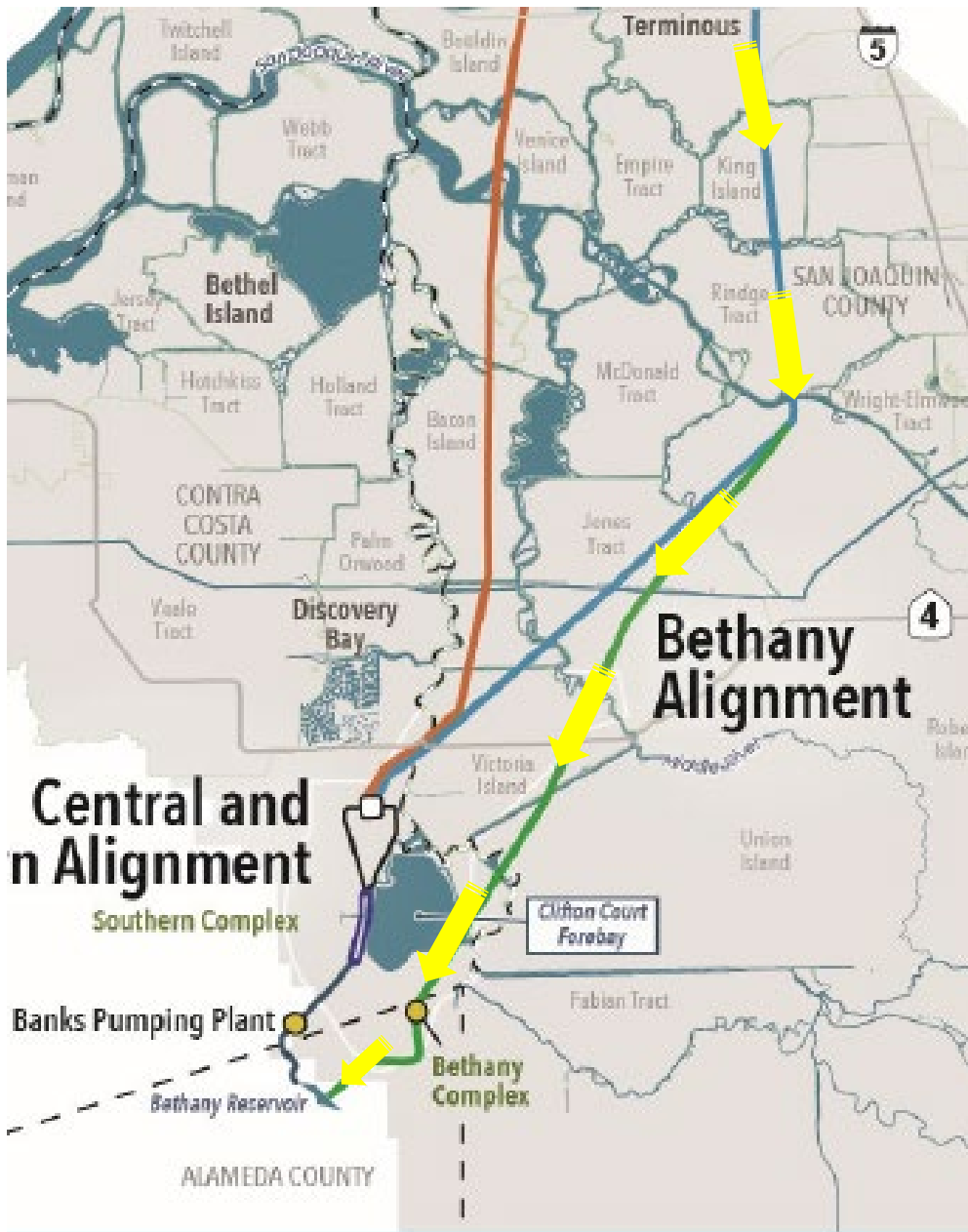
What is the Delta Tunnel?



Includes:

- At least two 3,000 cubic feet per second intakes at Hood and Courtland
(almost 1/4 mile long each)
- 13 years of construction, some 24hrs/day, 7 days/week
- Heavy truck trips on I-5 and local roads
(200,000+ truck trips)
- Adds 6,000 cfs of export capacity to SWP facilities
(currently 10,300 cfs)

What is the Delta Tunnel?

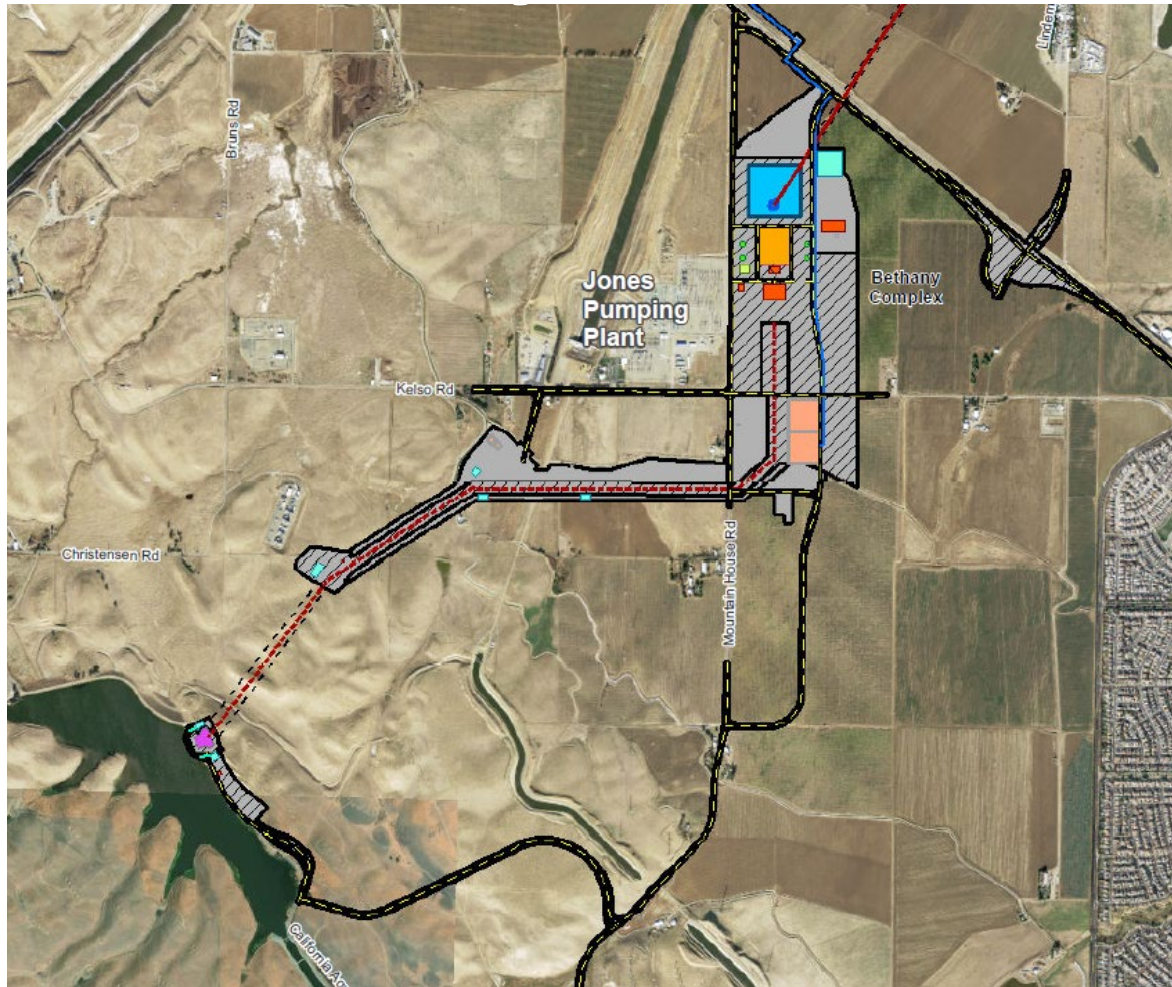


Does not include:

Any local benefits
(e.g., water supplies or operations that would freshen Central, South & West Delta)

Cost: \$16 billion +
(no updated cost estimate or economic analysis)

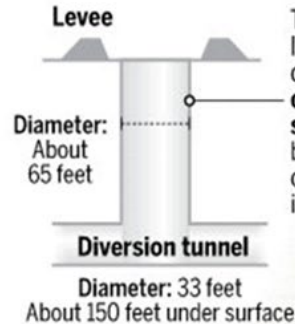
Proposed Construction at Bethany Reservoir



Tunnel Construction

BUILDING TUNNELS

Constructing a tunnel is one of the most complex challenges in civil engineering. It can require extensive analysis and huge tunnel-boring machines. TBMs come in different types: Some chip through rock, but a Delta water diversion tunnel would require the version that can worm through soil and muck. The project, which could take about a decade to complete, would require multiple TBMs similar to this.



The TBMs would be lowered in pieces down **temporary construction shafts**, each ringed by new levees in case of a Delta island levee failure.

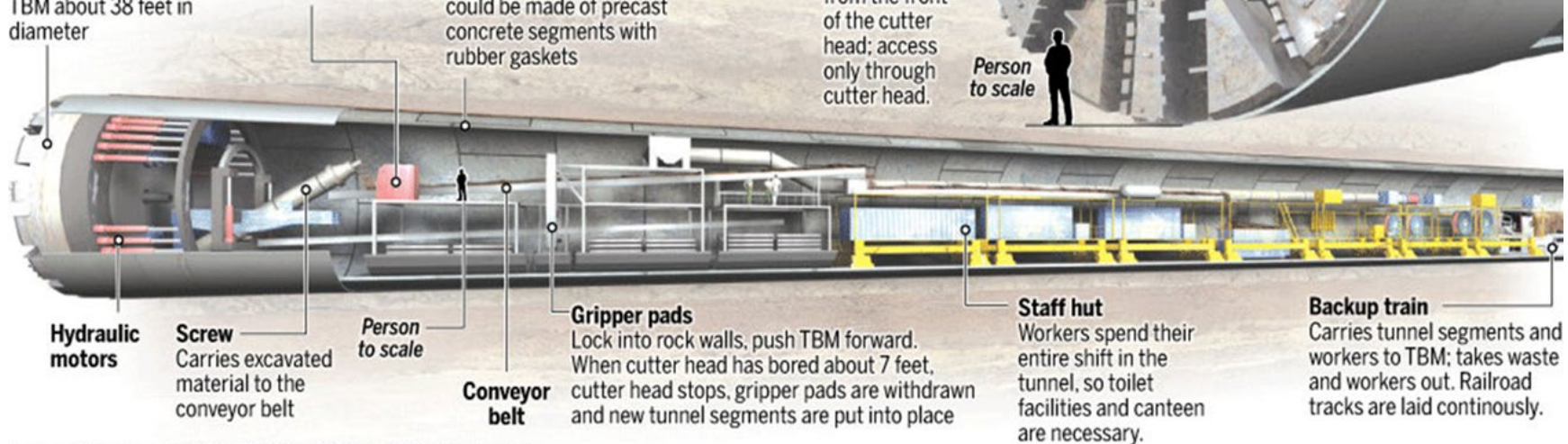
Cutter head
Rotates at one to 10 rounds per minute. Cutter disks can be changed only from the front of the cutter head; access only through cutter head.

Cutter head
Sizes vary; a 33-foot diameter finished tunnel would require a TBM about 38 feet in diameter

Cockpit
Boring controlled from here

Lining
Tunnel wall is lined with segments as the TBM moves forward. Lining could be made of precast concrete segments with rubber gaskets

Person to scale



Hydraulic motors

Screw
Carries excavated material to the conveyor belt

Person to scale

Conveyor belt

Gripper pads
Lock into rock walls, push TBM forward. When cutter head has bored about 7 feet, cutter head stops, gripper pads are withdrawn and new tunnel segments are put into place

Staff hut
Workers spend their entire shift in the tunnel, so toilet facilities and canteen are necessary.

Backup train
Carries tunnel segments and workers to TBM; takes waste and workers out. Railroad tracks are laid continuously.

Sources: Malmotunnel.se; Great Belt; Lovat; professor Christian Frenzel, Colorado School of Mines; California Department of Water Resources

Sacramento Bee, McClatchy Tribune

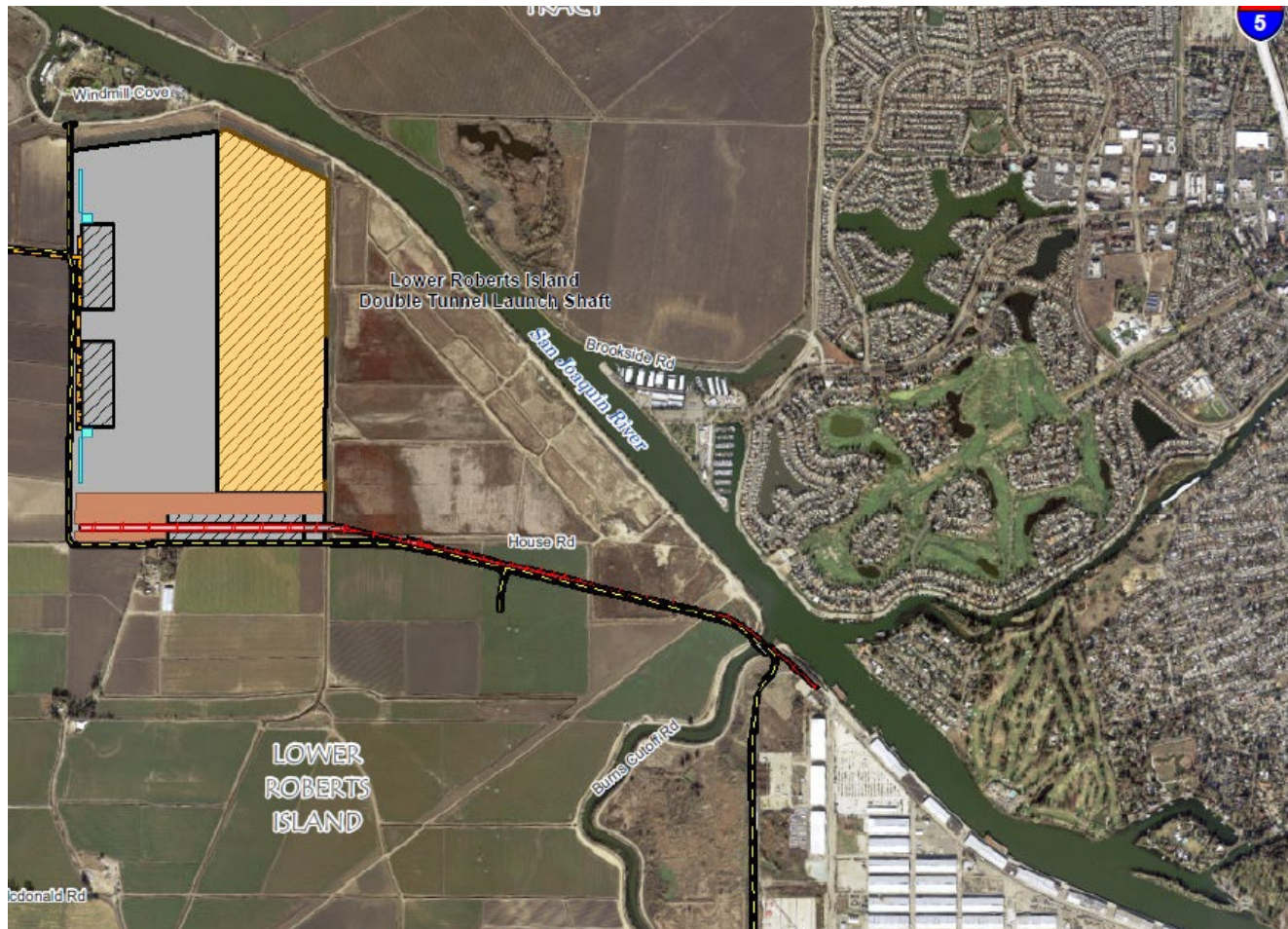
Tunnel Muck is Permanent

No plan to actually reuse so-called “Reusable Tunnel Material”

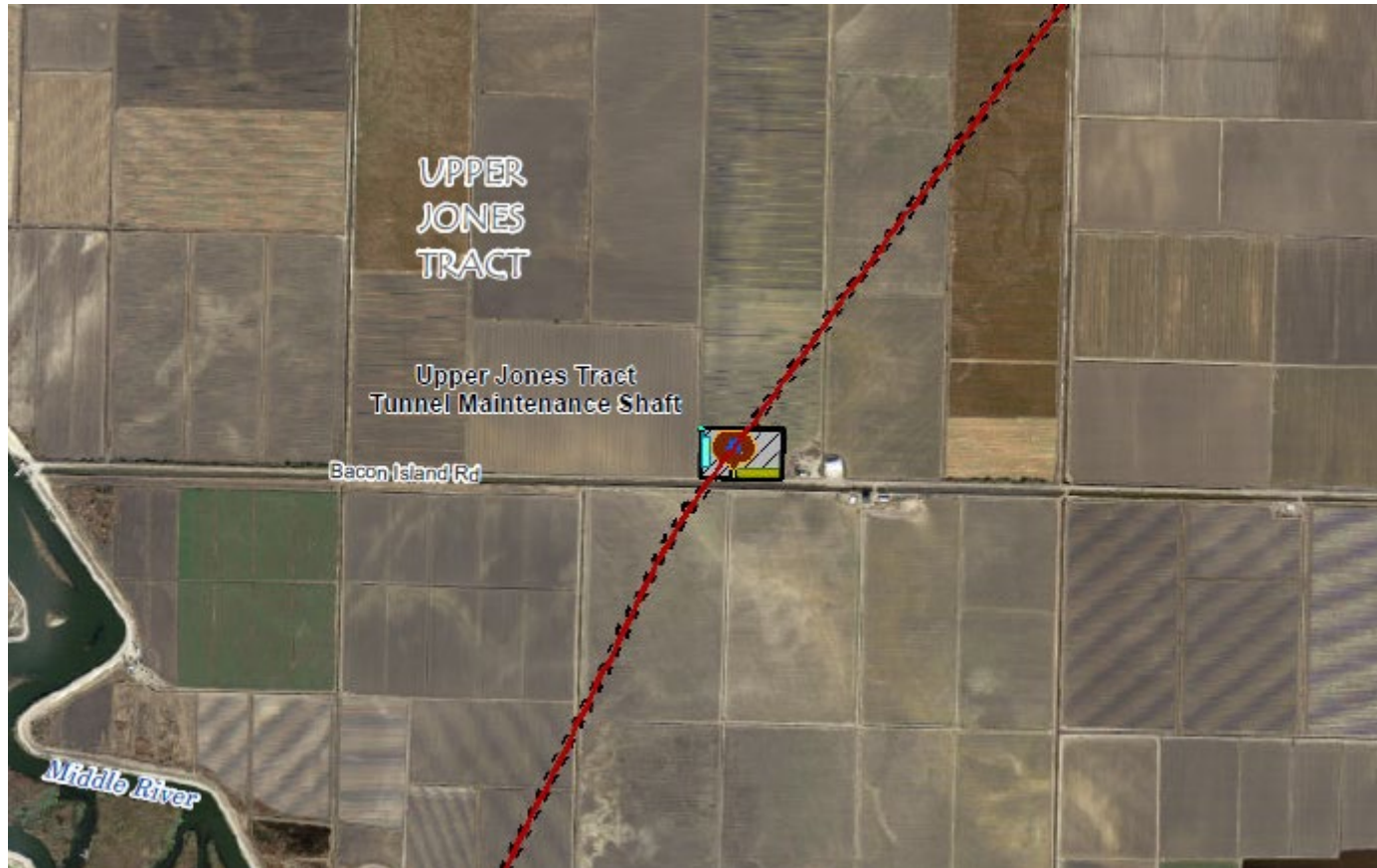
123 acres of muck piled 15 feet high on +- 550 acre complex



Lower Roberts Island Double Tunnel Maintenance Shaft



Upper Jones Tract Tunnel Maintenance Shaft



Flows and Water Quality

Average Annual Flows Utilized and Routed Through Delta

21.8 MAF Inflow

- 15.8 MAF Outflow to Bay

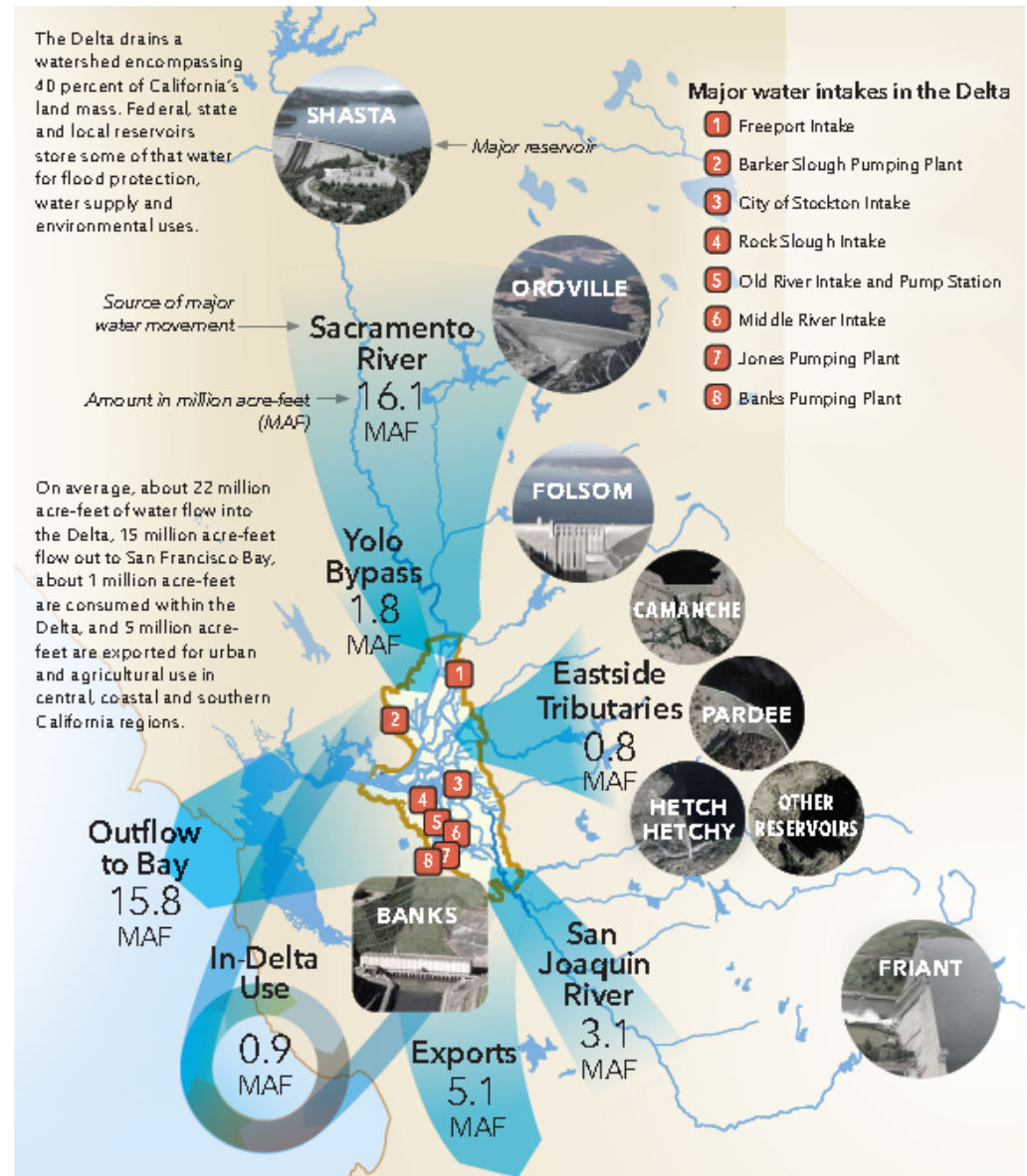
- 0.9 MAF In-Delta Use

5.1 MAF Avail. for Exports

Source: California Water Resilience Portfolio – July 2020

Note: During Drought Conditions Delta Inflow Values are Substantially Reduced in Comparison to Reductions of Delta Exports

Delta Water: Inputs and Outputs



Keep Water Flowing Through the Delta

- Tunnel is a threat to ensuring adequate freshwater flows through the Delta
- Takes fresh water, bypassing the ecosystem = less water through the Delta
- Improves export water quality at expense of water quality for Delta residents, farming
- A tunnel provides no incentive to help protect and improve water quality in the Delta

Tunnel Impacts...

13+ years of construction

- Air quality
- Noise
- Road, traffic,
emergency access
- Community &
business disruption
- Economic loss
- Fish & Wildlife
habitat loss



Tunnel Impacts...

Groundwater Chapter DEIR:

Fails to identify the relevant subbasin GSPs and makes broad generalizations regarding local conditions.

Fails to take into account project interference with Groundwater Sustainability Plans, local wells, groundwater Dependent ecosystems (GDEs), Interconnected Surface Waters (ISWs) and the associated beneficial uses and users.

DEIR uses arbitrary 5% change in subbasin storage and a 20 foot drop in well levels for impacts to Groundwater

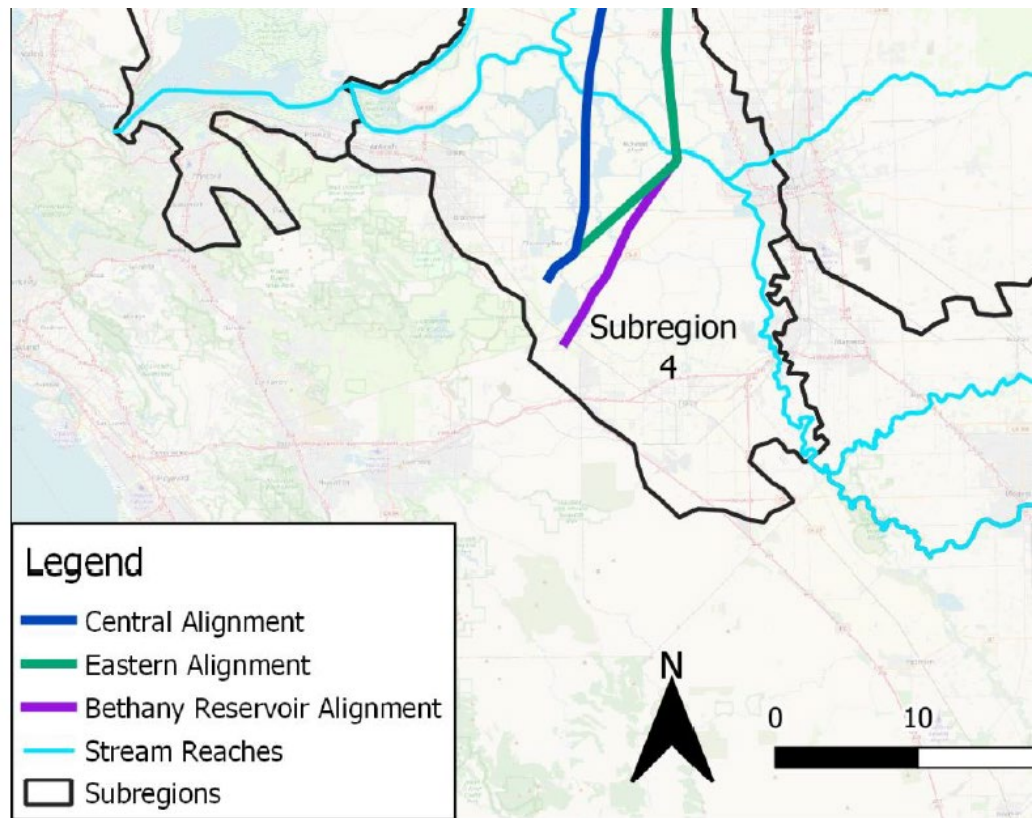


Figure 8-7. Location of Project Infrastructure in the DeltaGW Model

Tunnel Impacts...

13+ years of construction

- Historical Delta Legacy Communities
- Recreational & waterway impacts
- Agricultural land conversions for massive intakes, tunnel shafts & accesses
(3,787 acres)

November 21, 2022



Contra Costa Special Districts Association
Delta Conveyance Project

National Historic Preservation Act & National Heritage Area Designation



Delta King and Delta Queen on the Sacramento River --- 1930s

Process under Section 106 of NHA calls for:

- Protecting Delta's historic landscape
- Avoiding and reducing impacts to historic properties

National Heritage Area

is committed to economic development, especially heritage tourism, ecotourism, and agritourism that is compatible with agriculture; to the preservation of the region's unique architecture; and to creating interpretive and history programs that attract, entertain, and educate visitors and residents alike.

Tunnel Impacts...



For Release: Tuesday, June 21, 2022

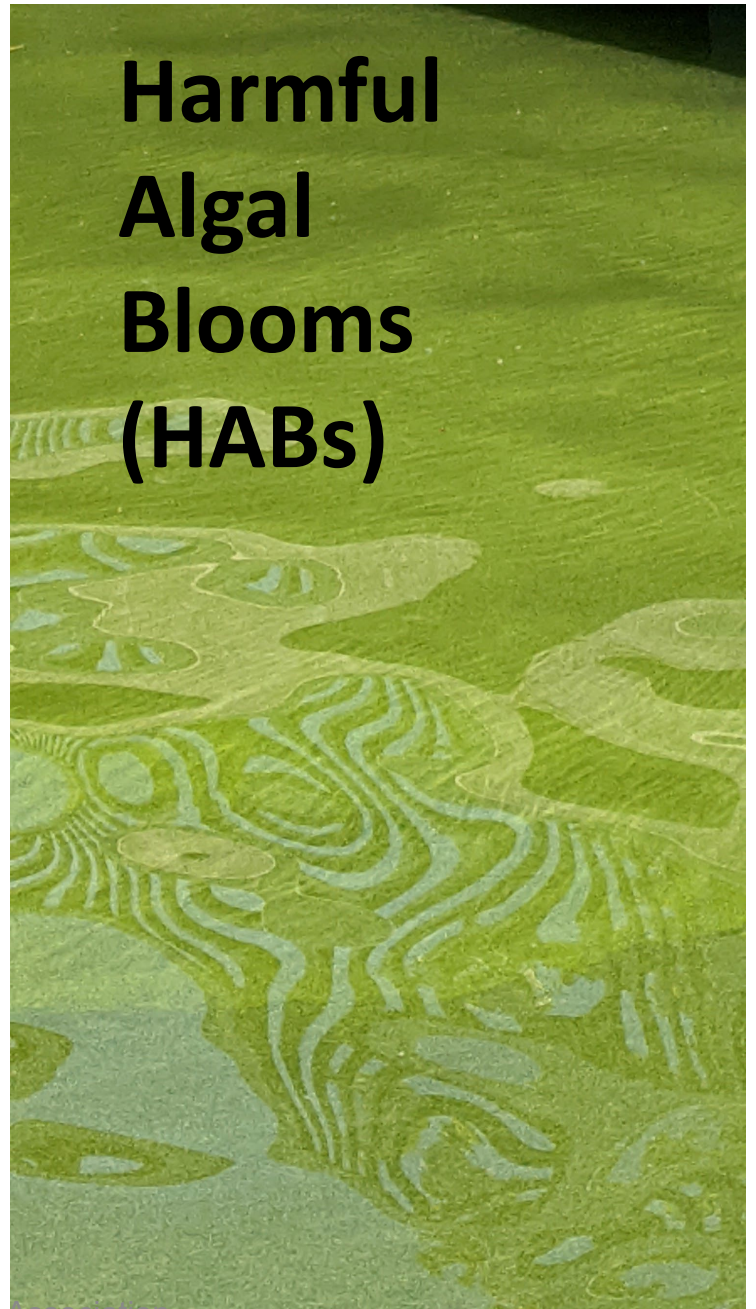
Contact: CCHS Media Line, 925-608-5463 or doc.pio@cchealth.org

Harmful Algae Blooms Reported in Discovery Bay

Contra Costa Health (CCH) advises caution on the part of anyone who boats, fishes or swims in or around Discovery Bay after large blooms of blue-green algae were discovered in multiple locations in and around the community.

A bloom is a buildup of blue-green algae, or cyanobacteria, that creates a green, blue-green, white or brown coloring on the surface of slow-moving waterways. Contact with a toxin produced by the bloom can make people and pets very sick.

Harmful Algal Blooms (HABs)



...More Tunnel Impacts

Permanent Operational Impacts:

- Municipal and Agriculture water quality
- Endangered species
- Recreation (fishing, swimming, boating)
- Social impacts to Delta communities
- Direct loss of Delta farmland (for conveyance and also habitat restoration)



Better Alternative: Maintain Existing Freshwater Pathway



Risk Mitigation Options

- Storage Releases
- Operable Barriers
- Freshwater Pathway
 - Pre-Event
 - Levee improvements
 - Material stockpiles
 - Integrated plans (County, State, Fed)
 - Post Event
 - Repair levees
 - Close side channels
 - Recover < 6 months

Progress Towards a Freshwater Pathway

Summary

Accomplishments

- Freshwater Pathway approach included in State Emergency Response/Preparedness Plan
- Regional warehouses & stockpiles completed
- Regional & local Delta seismic vulnerability analyses conducted
- Potential outage reduced to < 6 months
- Major portions of Middle River levee improved to meet mitigate flood and seismic events

Ongoing Activities

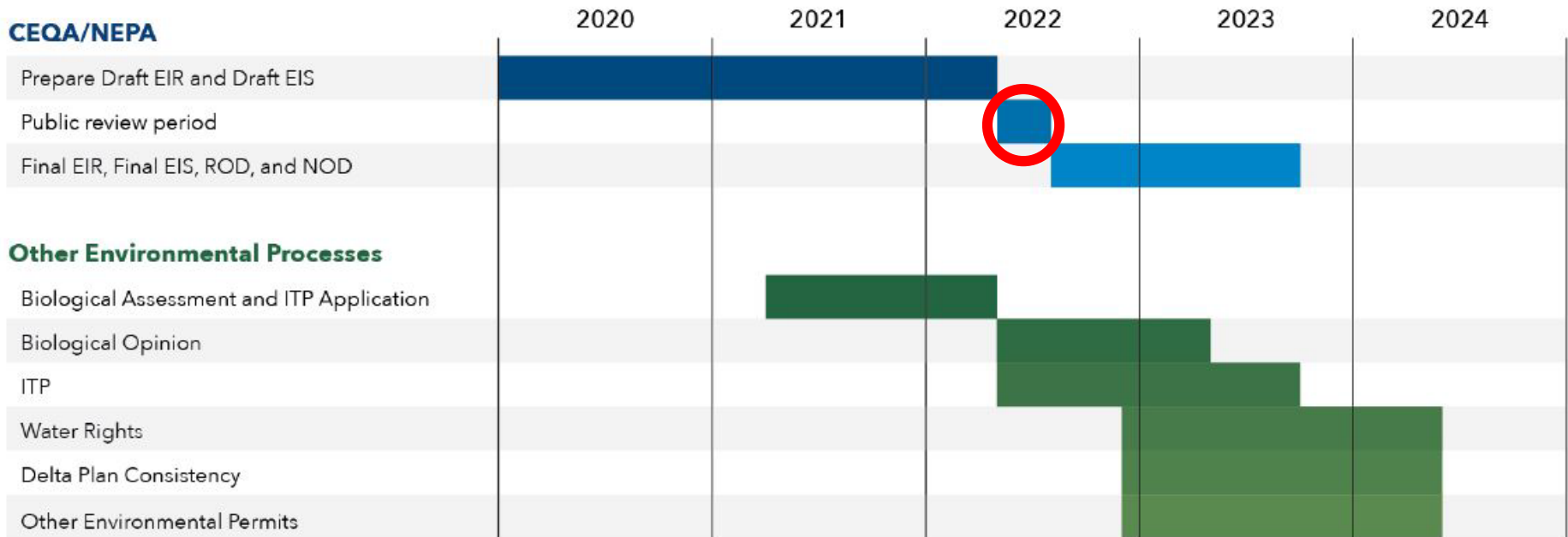
- Evaluate new levee monitoring technologies
- Continue developing on-island stockpiles
- Further analysis of improving Old River levees



Delta Tunnel - Timeline

**Opportunity for public input: CEQA Public Draft EIR
New Comment Deadline - December 16, 2022**

Delta Conveyance Project Schedule



Draft EIR Public Comment meeting hosted by **Delta Legislative Caucus and Delta Counties Coalition** **Tues. December 6th, 4:00 p.m.** Willow Ballroom, Hood CA

Resources Agency and DWR haven't held an in-person DEIR comment meeting in the Delta.

Public comment will be recorded for submission to DWR.

Held less than a mile south of the proposed massive intake just north of town of Hood.



YOU'RE INVITED
MAKE YOUR VOICE HEARD

Delta Tunnel Draft Environmental Impact Report
Public Comment Session in the Delta
Hosted by: The Delta Legislative Caucus & The Delta Counties Coalition



DATE: December 6, 2022
TIME: 4:00 p.m. – 5:30 p.m.
PLACE: Willow Ballroom
10724 CA 160, Hood, CA 95639*

WHY? The State is still pursuing a massive \$16 billion+ tunnel that would severely impact the Delta without providing a single drop of new water. Draft Environmental Impact Report (DEIR) comments on the Department of Water Resources' controversial tunnel proposal are due December 16, 2022. It is critical to the future of the Delta for people to attend this meeting and make their voices heard. The meeting will provide a brief overview of the project and include an opportunity to put your comments into the formal record. Assistance with written comment submissions will also be provided.

For more information contact Elisia DeBord, DCC Coordinator at (916) 874-4227
*This will be an in-person meeting only. Additional information about commenting on the Delta Tunnel can be found here for those who cannot attend: <https://www.thedeltaaccount.org>



Questions?

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References

Delta Counties Coalition

<https://delta.saccounty.gov>

Department of Water Resources

<https://water.ca.gov/deltaconveyance>

Delta Conveyance Design & Construction Authority

<https://water.ca.gov/deltaconveyance>

Restore the Delta

<https://restorethedelta.org/>

Save the California Delta Alliance (STCDA)

<https://nodeltagates.com/>

Bay Delta Live Website

<https://www.baydeltalive.com/>

California Data Exchange Center

<https://cdec.water.ca.gov/>

Water Education Foundation

<https://www.watereducation.org/aquapedia/sacramento-san-joaquin-delta>