DELTA CONVEYANCE DESIGN & CONSTRUCTION AUTHORITY

Delta Conveyance Project Overview

December 2021

WWW.DCDCA.ORG | WWW.WATER.CA.GOV/DELTACONVEYANCE

Outline

1. Overview
2. Intakes
3. Tunnels and Shafts
4. Southern Complex
5. Bethany Reservoir Alternative

1. Overview

Delta Conveyance – Engineering Summary

Three Alignments

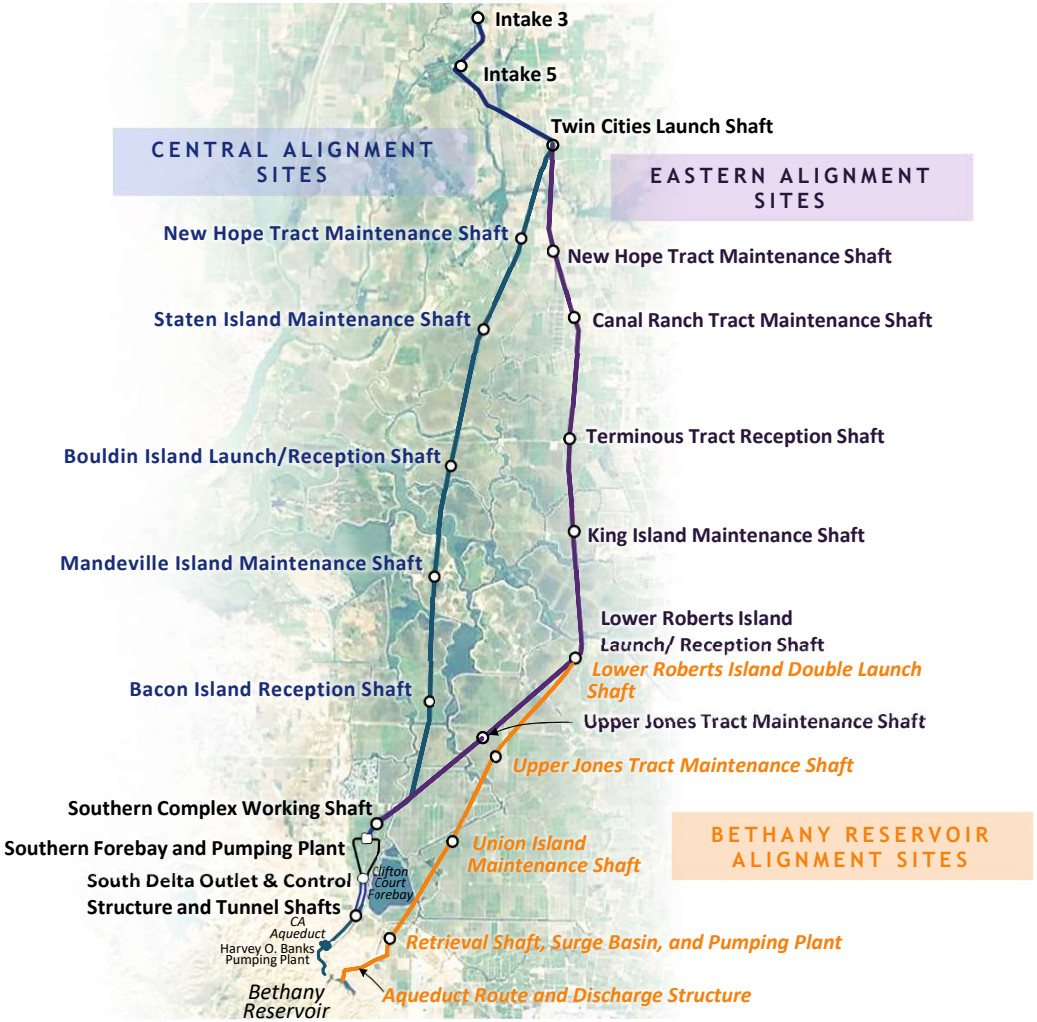
- Central
- Eastern
- Bethany

Two Engineering Project Reports

- Eastern/ Central Corridors
- Bethany Reservoir Alternative

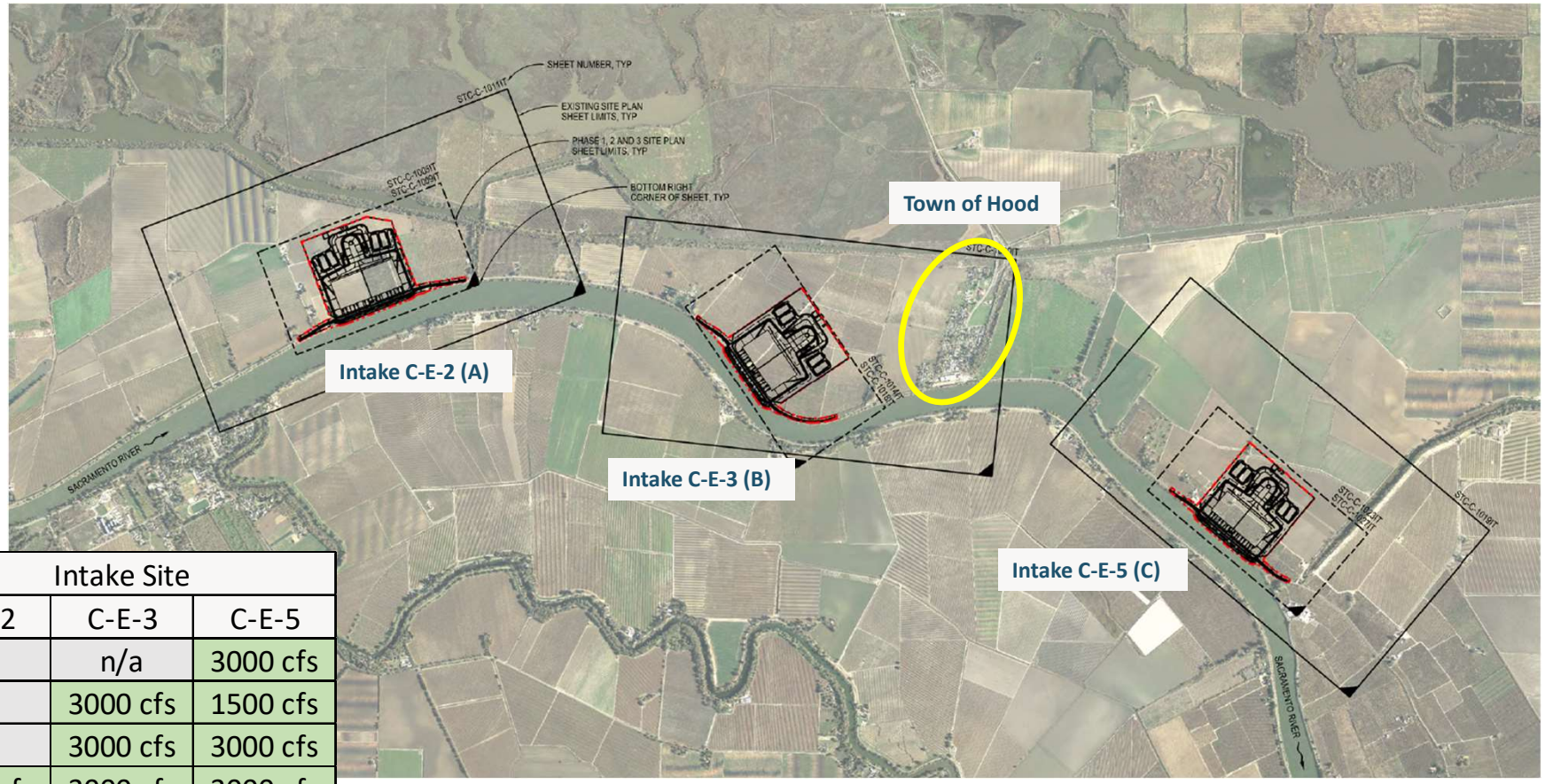
Four Capacity Options

- 3,000 cfs
- 4,500 cfs
- 6,000 cfs (only capacity option for Bethany Res Alt)
- 7,500 cfs



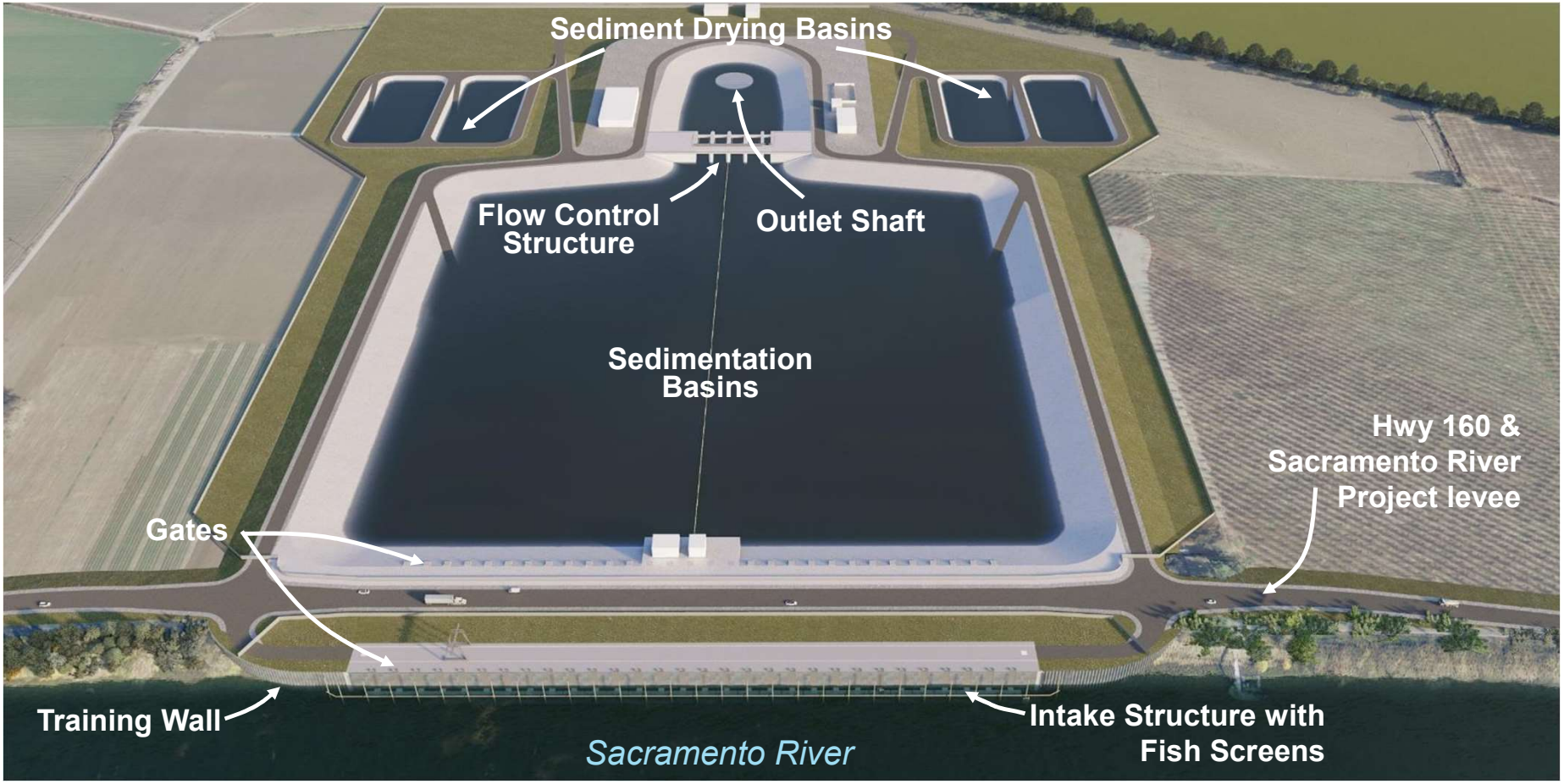
2. Intakes

Intake Sites Relative to Capacity Options



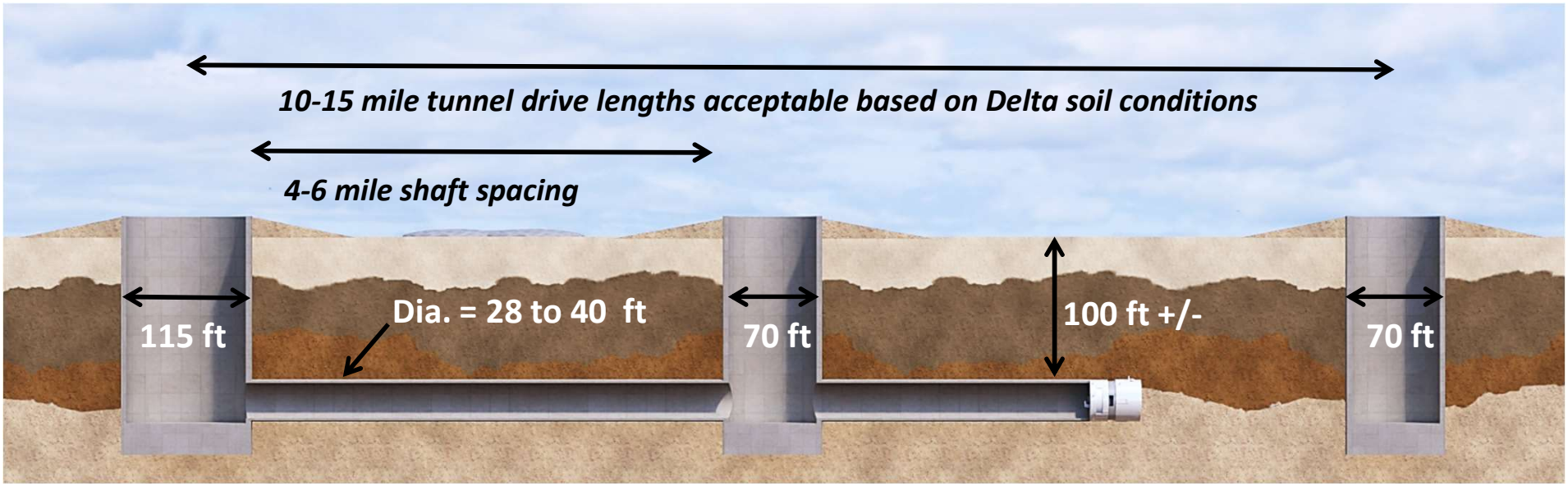
Capacity Option	Intake Site		
	C-E-2	C-E-3	C-E-5
3000 cfs	n/a	n/a	3000 cfs
4500 cfs	n/a	3000 cfs	1500 cfs
6000 cfs	n/a	3000 cfs	3000 cfs
7500 cfs	1500 cfs	3000 cfs	3000 cfs

Intake – Typical



3. Tunnels and Shafts

Key Components of a Tunnel Drive



Launch Shaft

Where the tunnel boring machine (TBM) is lowered into the tunnel. Where the concrete liners are transported into the tunnel. Where the excavated material (RTM) is removed.

Maintenance Shaft

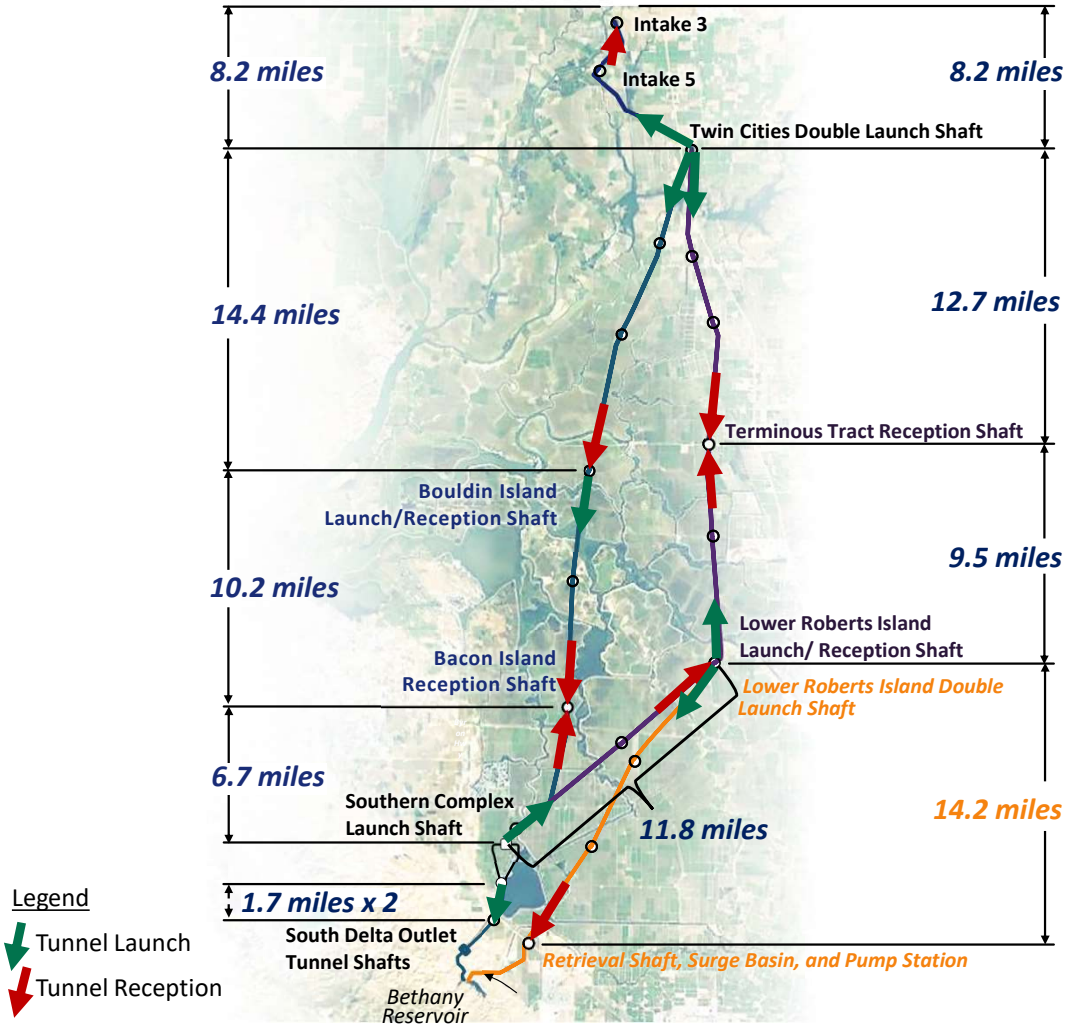
Provides direct access to the TBM for routine maintenance work. Needed approximately every 4 to 6 miles.

Reception Shaft

Termination point of tunnel drive. Where TBM is disassembled and lifted out of the tunnel.

Current Project Overview

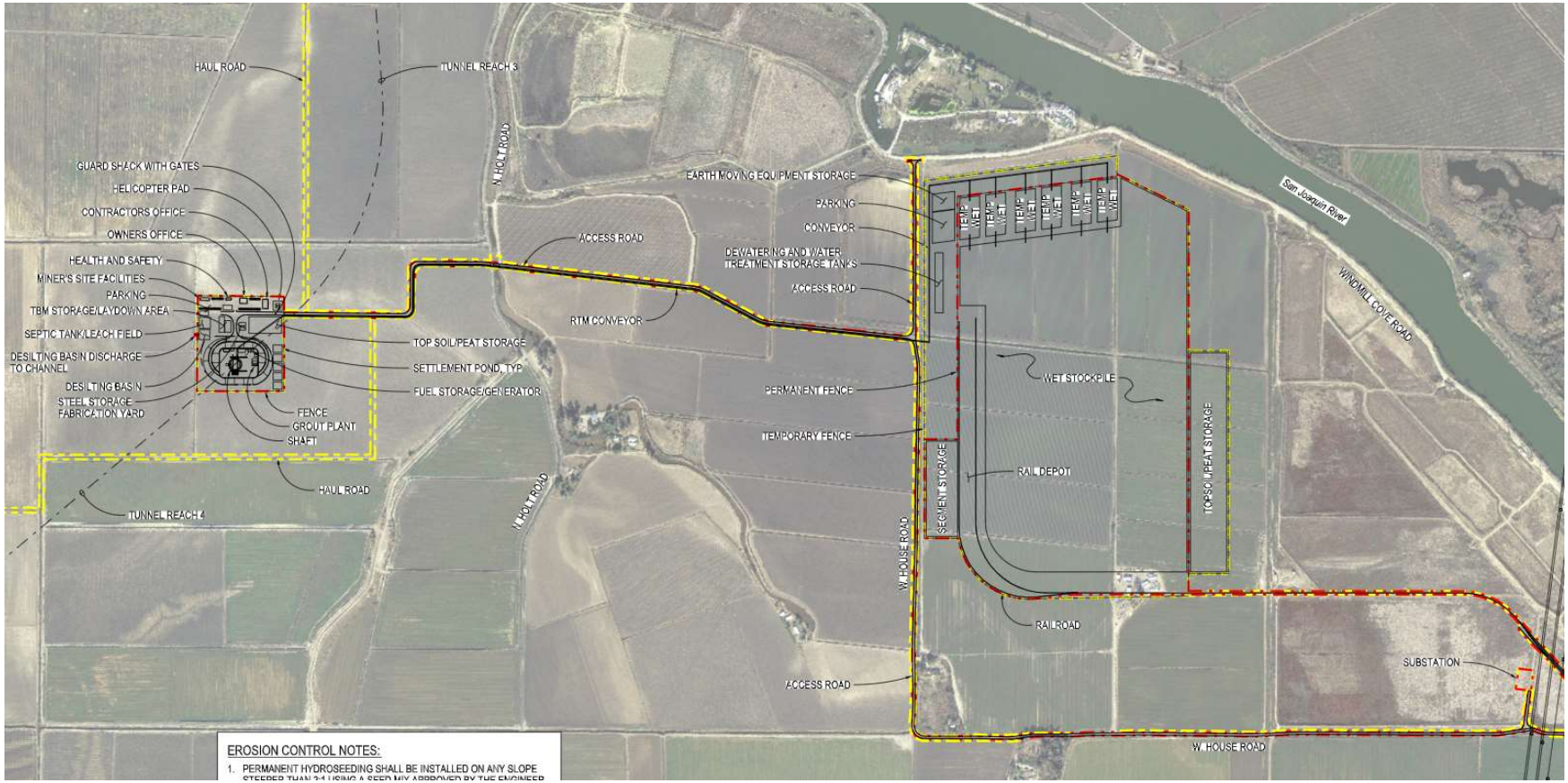
- **Main Tunnel Shafts:**
  - Central: 3 Launch Shafts (1 double + 2 singles), 3 Maintenance Shafts, and 3 Reception Shafts
  - Eastern: 3 Launch Shafts (1 double + 2 singles), 4 Maintenance Shafts, and 3 Reception Shafts
  - Bethany: 2 Launch Shafts (2 doubles), 5 Maintenance Shafts, and 3 Reception Shafts
- **Tunnel Drive Distances:**
  - Central: 42.9 miles
  - Eastern: 45.6 miles
  - Bethany: 44.6 miles
- **South Delta Connections:**
  - Central/Eastern connects to SWP upstream of Banks PP; requires add'l tunnels and shafts to connect from Southern Forebay
  - Bethany requires 3 miles of aqueduct pipelines and discharge structure directly into Bethany Reservoir



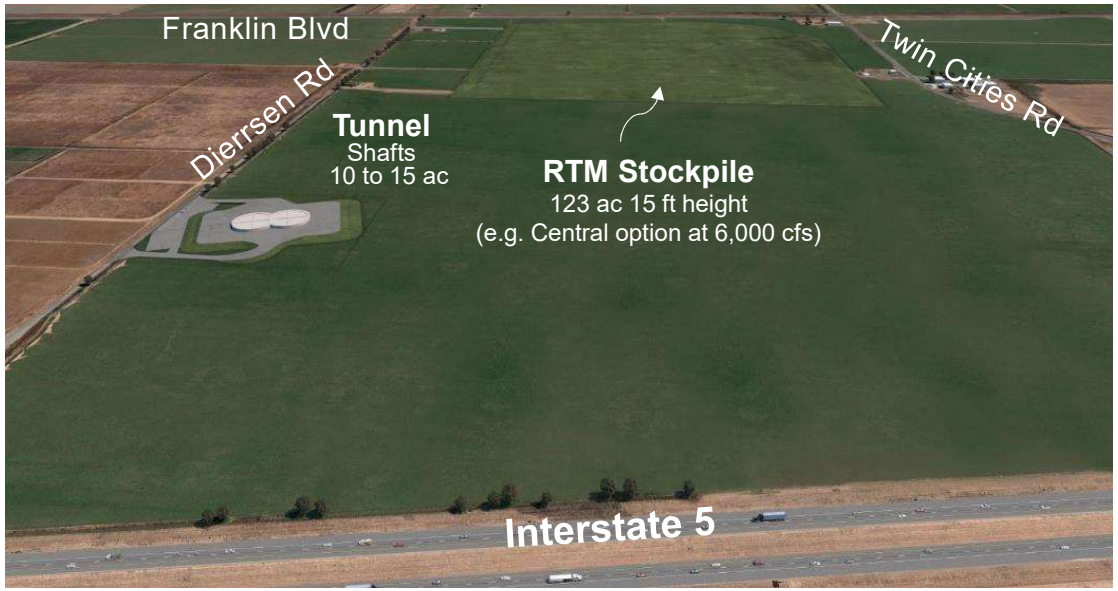
Reusable Tunnel Material (RTM) Overview

- Massive volumes to manage: ~6 to 15 Mil CYs
- RTM Basics: comprised of clays, sands, and silts
- Reusability:
    - Performed project-wide assessment to maximize reuse potential
    - Consideration of material characteristics; Pre- and Post-conditioned samples meet State and Federal embankment requirements
    - Needs drying for project reuse
- Management of Surplus: Central/Eastern Corridors uses ~6 Mil CYs for project use; Bethany uses <1 Mil CYs

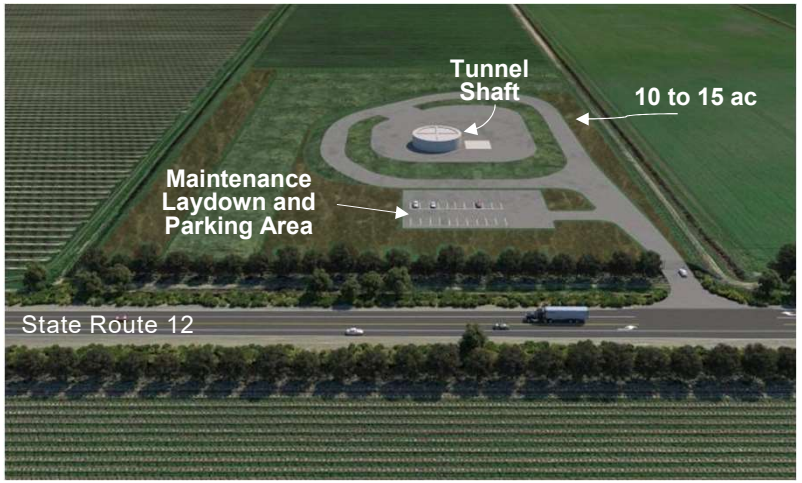
Lower Roberts Launch Shaft - EXAMPLE



Post-Construction Sites (Typical)



Twin Cities Complex Dual Launch Shaft

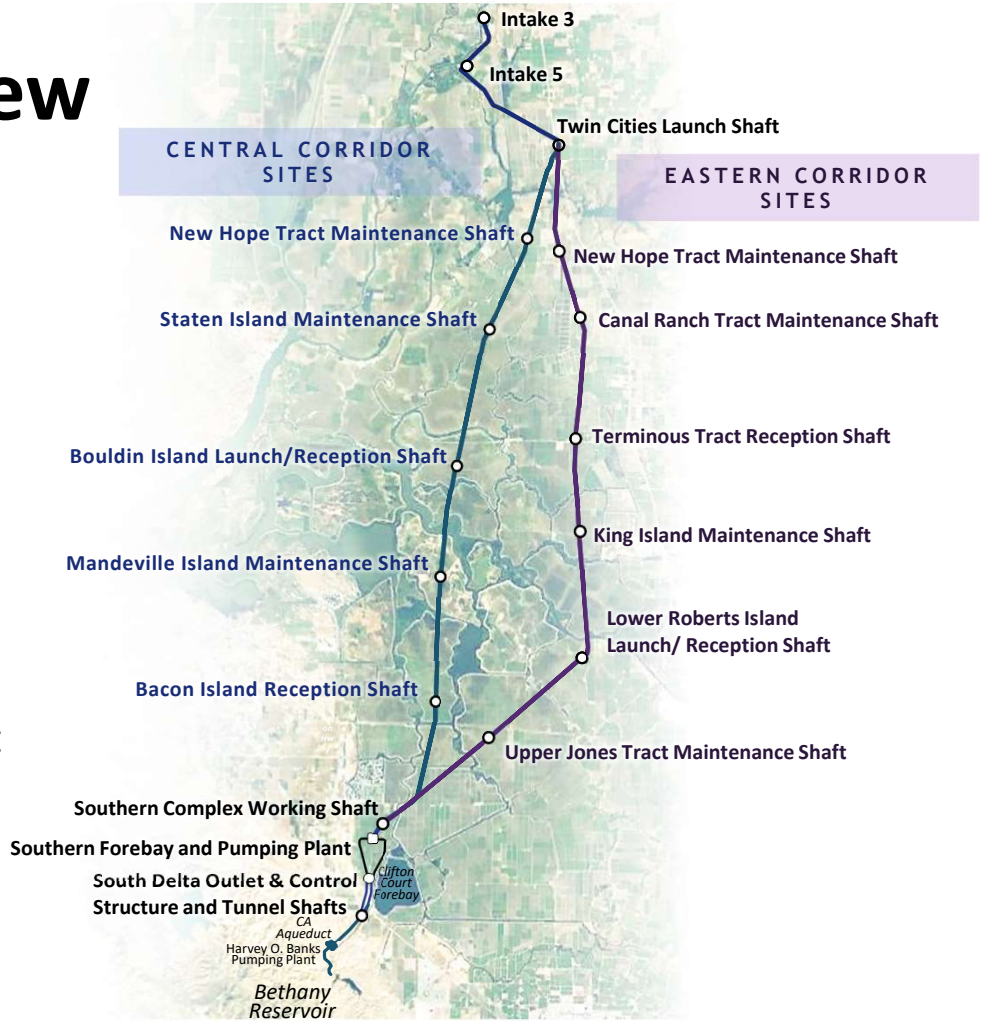


Terminous Reception Shaft

4. Southern Complex / Central and Eastern Corridors

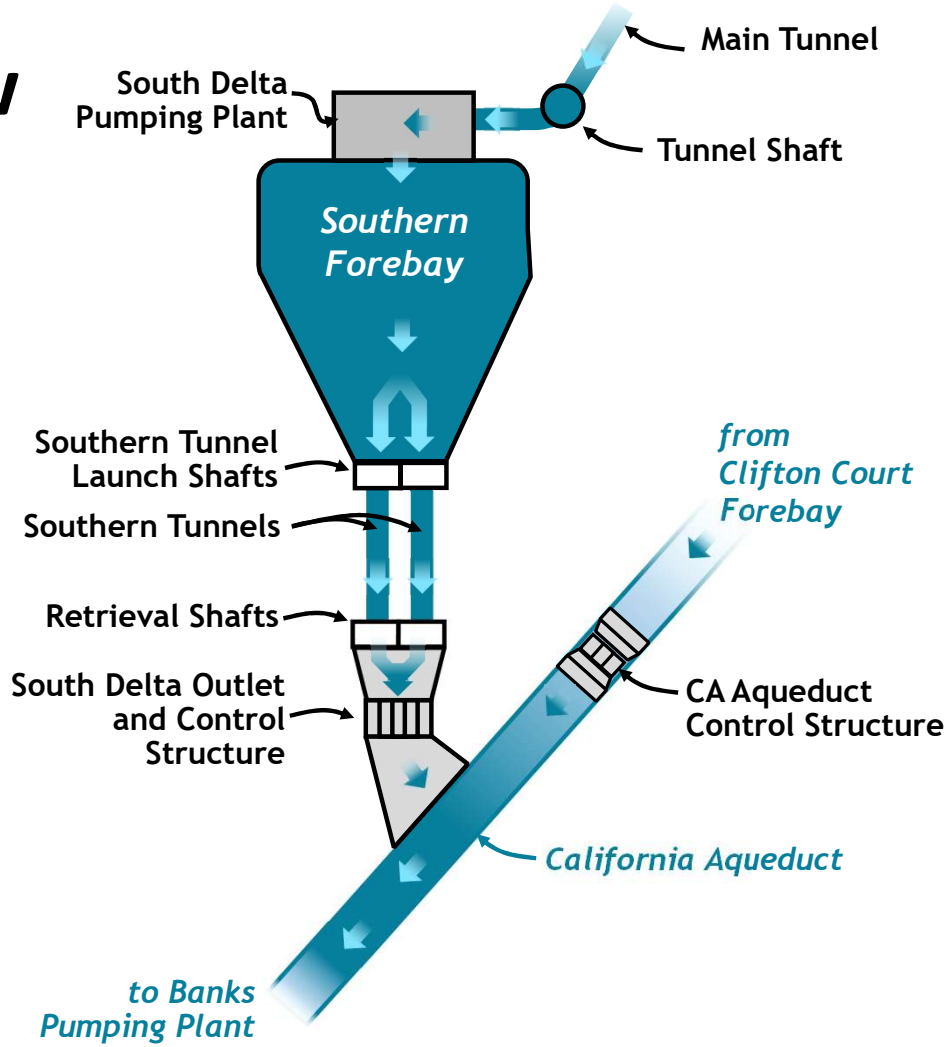
Southern Complex Overview

- **Summary**
  - Only for Central/Eastern Corridors
  - Adjacent to existing Clifton Court Forebay
  - Uses existing SWP Banks Pumping Plant
- **Facility Description**
  - 6,000 cfs Pumping Plant
  - 9,000 acre-foot Southern Forebay (750 acres surface area)
  - Two 40-ft diameter tunnels delivering 10,670 cfs to existing Banks Pumping Plant
  - Outlet and control structures at inlet to Banks Approach Channel

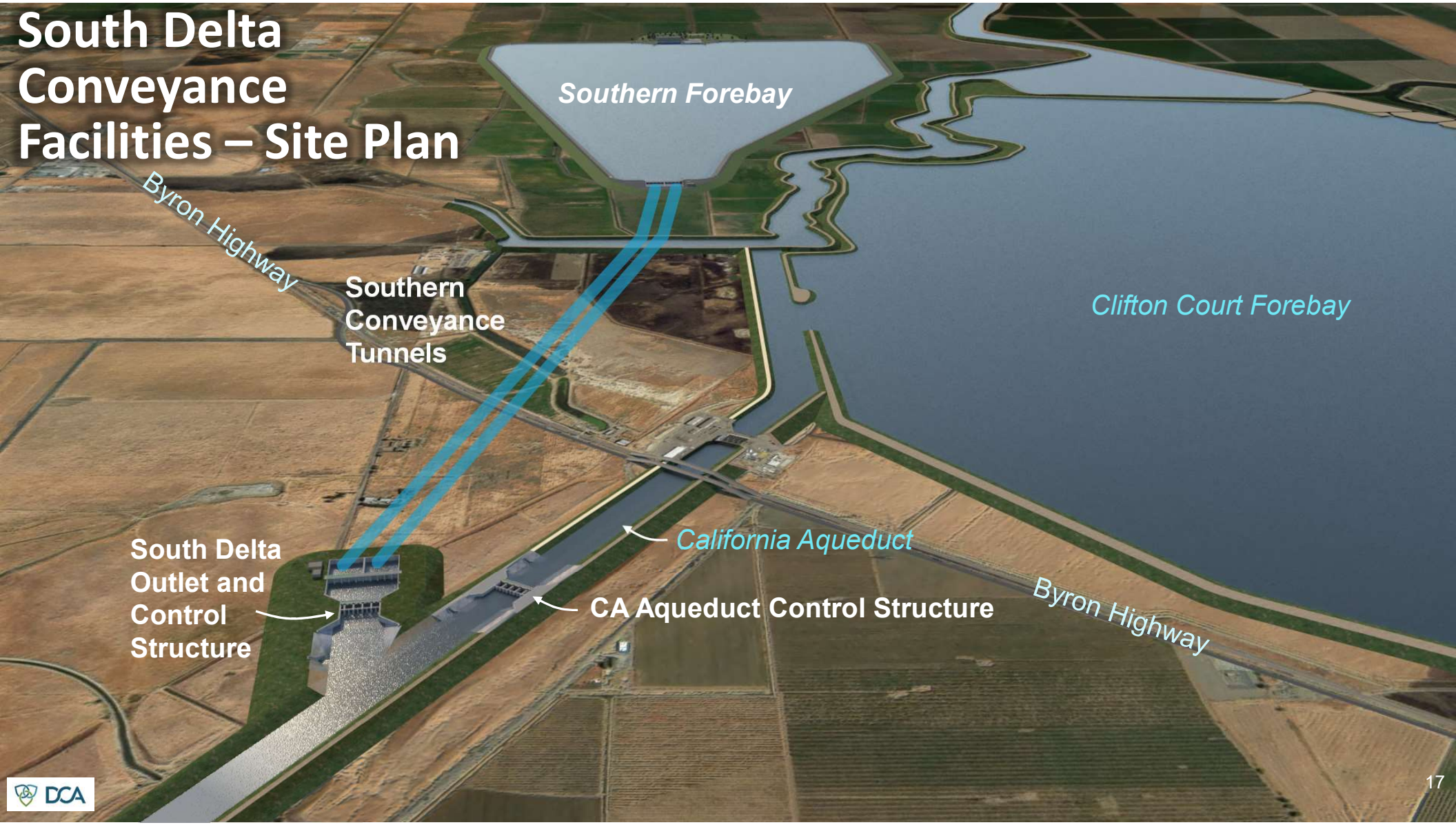


Southern Complex Overview

- **Summary**
  - Only for Central/Eastern Corridors
  - Adjacent to existing Clifton Court Forebay
  - Uses existing SWP Banks Pumping Plant
- **Facility Description**
  - 6,000 cfs Pumping Plant
  - 9,000 acre-foot Southern Forebay (750 acres surface area)
  - Two 40-ft diameter tunnels delivering 10,670 cfs to existing Banks Pumping Plant
  - Outlet and control structures at inlet to Banks Approach Channel



South Delta Conveyance Facilities – Site Plan

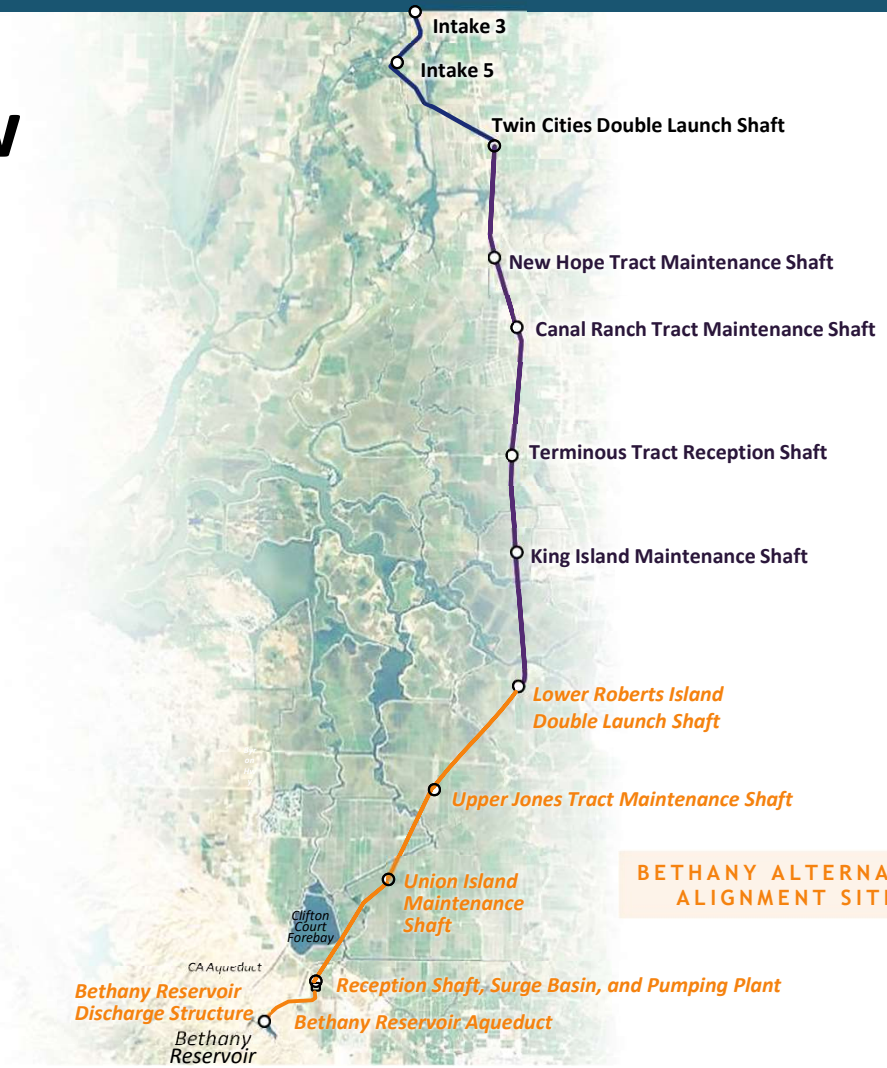


DCA

5. Bethany Reservoir Alternative

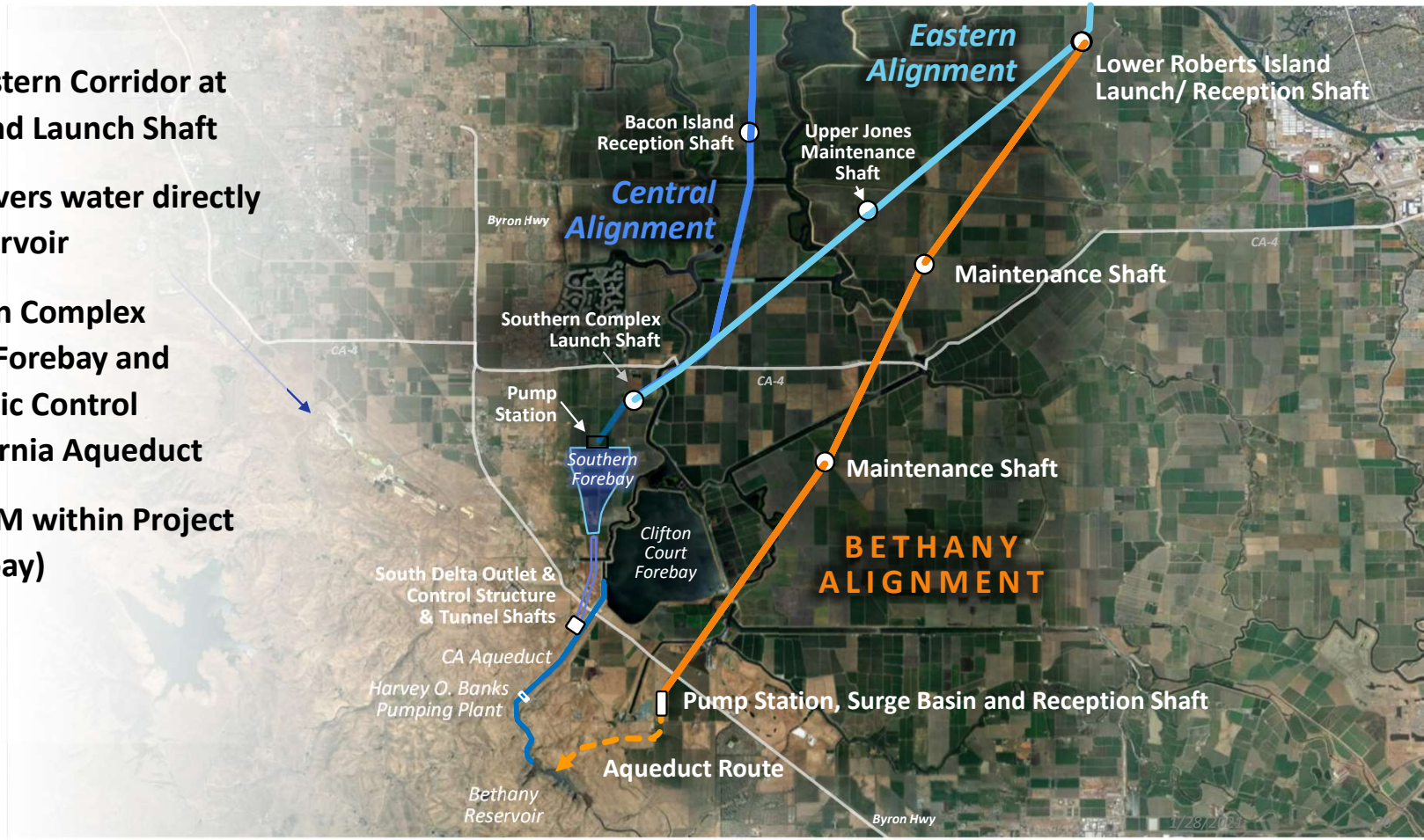
Bethany Alternative Overview

- Originates from Eastern Corridor at Lower Roberts Island Launch Shaft
- Pumping Plant delivers water directly up to Bethany Reservoir
- Eliminates Southern Complex Facilities including Forebay and connecting Hydraulic Control Structures to California Aqueduct
- Minimal use for RTM within Project (no Southern Forebay)



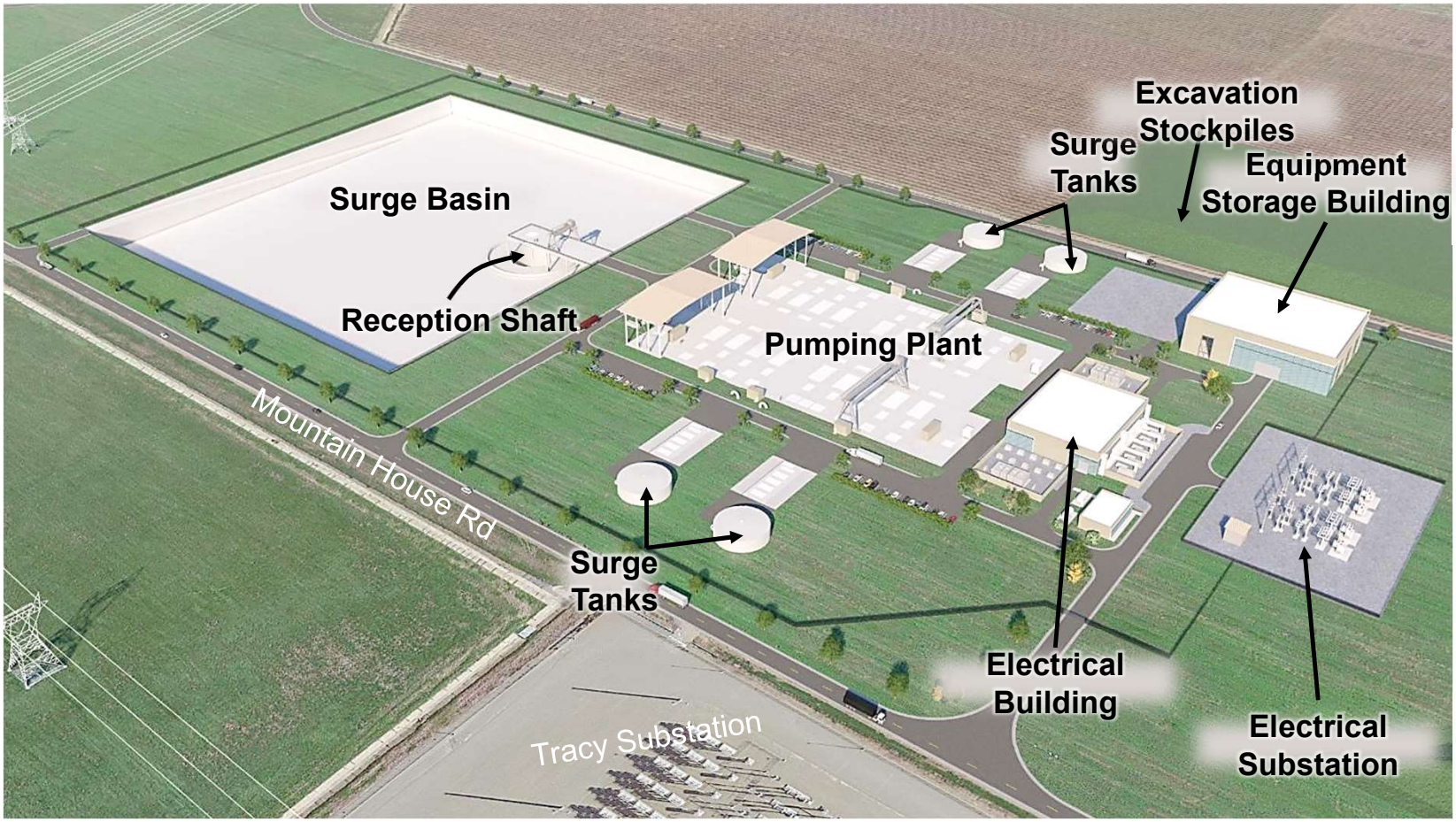
Bethany Reservoir Alternative Overview

- Originates from Eastern Corridor at Lower Roberts Island Launch Shaft
- Pumping Plant delivers water directly up to Bethany Reservoir
- Eliminates Southern Complex Facilities including Forebay and connecting Hydraulic Control Structures to California Aqueduct
- Minimal use for RTM within Project (no Southern Forebay)



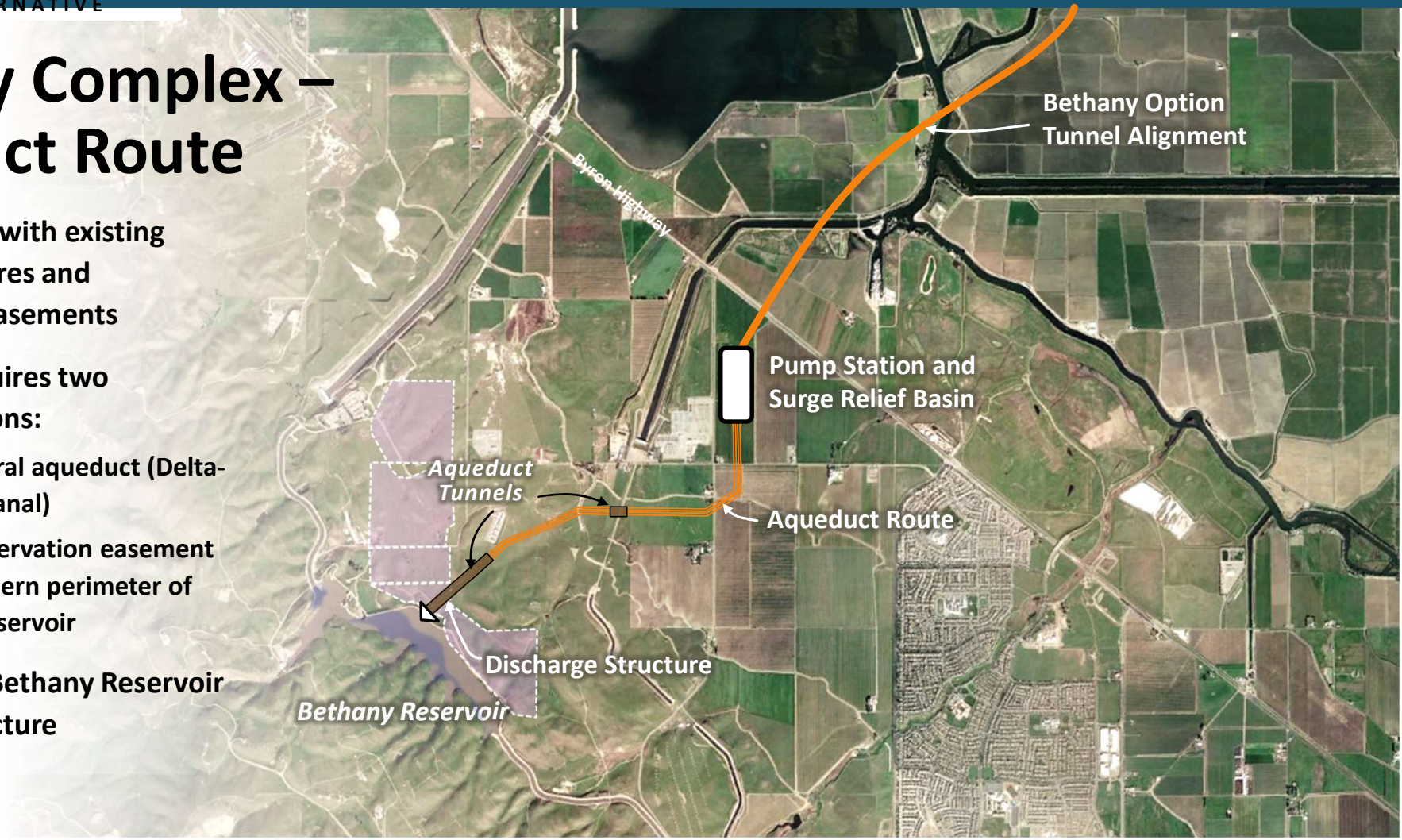
DCA

Bethany Pumping Plant



Bethany Complex – Aqueduct Route

- Avoids conflict with existing surface structures and conservation easements
- Alignment requires two tunneled sections:
  - Under federal aqueduct (Delta-Mendota Canal)
  - Under conservation easement along southern perimeter of Bethany Reservoir
- Terminates at Bethany Reservoir Discharge Structure



Q&A