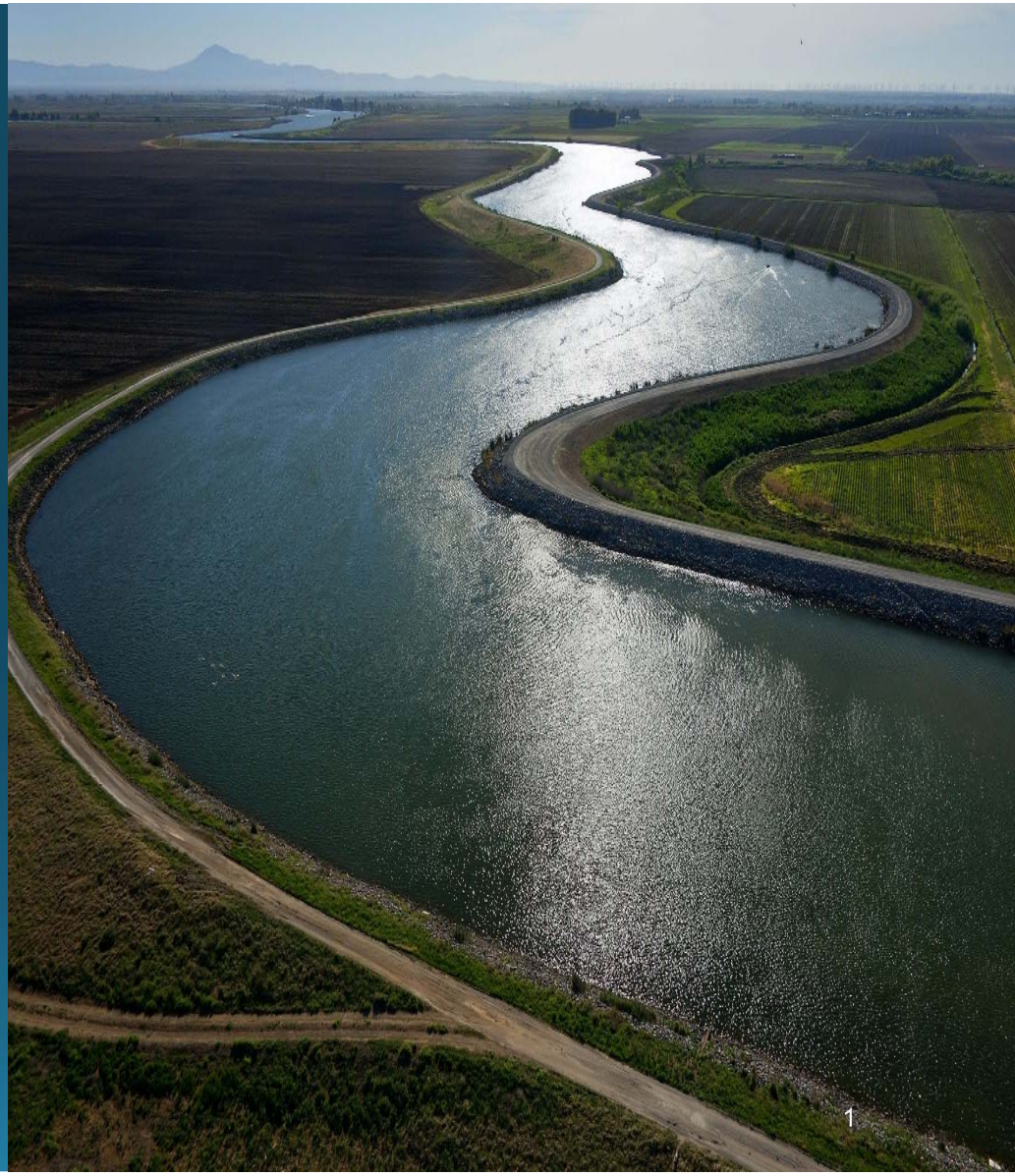
Delta Conveyance Project

PALMDALE WATER DISTRICT
DATE 11/09/2020



Delta Conveyance Objective

To restore and protect ability to deliver SWP Water Supply

- CLIMATE RESILIENCY: Addresses climate change, extreme weather, and rising sea-levels in the Delta for the SWP
- SEISMIC RESILIENCY: Minimizes health/safety risk to public from earthquake-caused reductions in water delivery quality and quantity from the SWP
- WATER SUPPLY RELIABILITY: Restores and protects ability to deliver SWP water in compliance with regulatory and contractual constraints
- OPERATIONAL RESILIENCY: Provides SWP operational flexibility to improve aquatic conditions and manage risks of additional future constraints

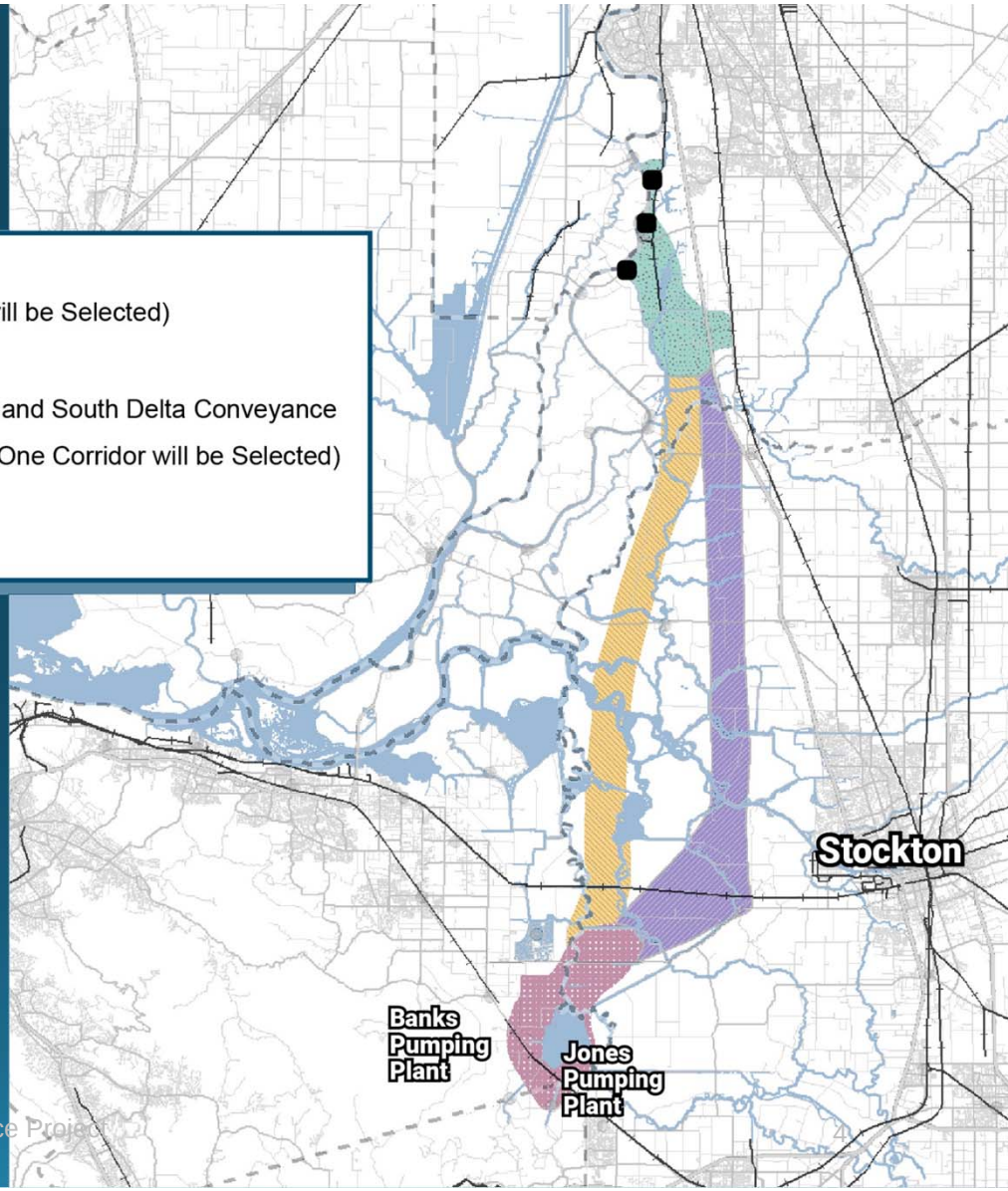
Delta Conveyance – Notice of Preparation

New Facilities:

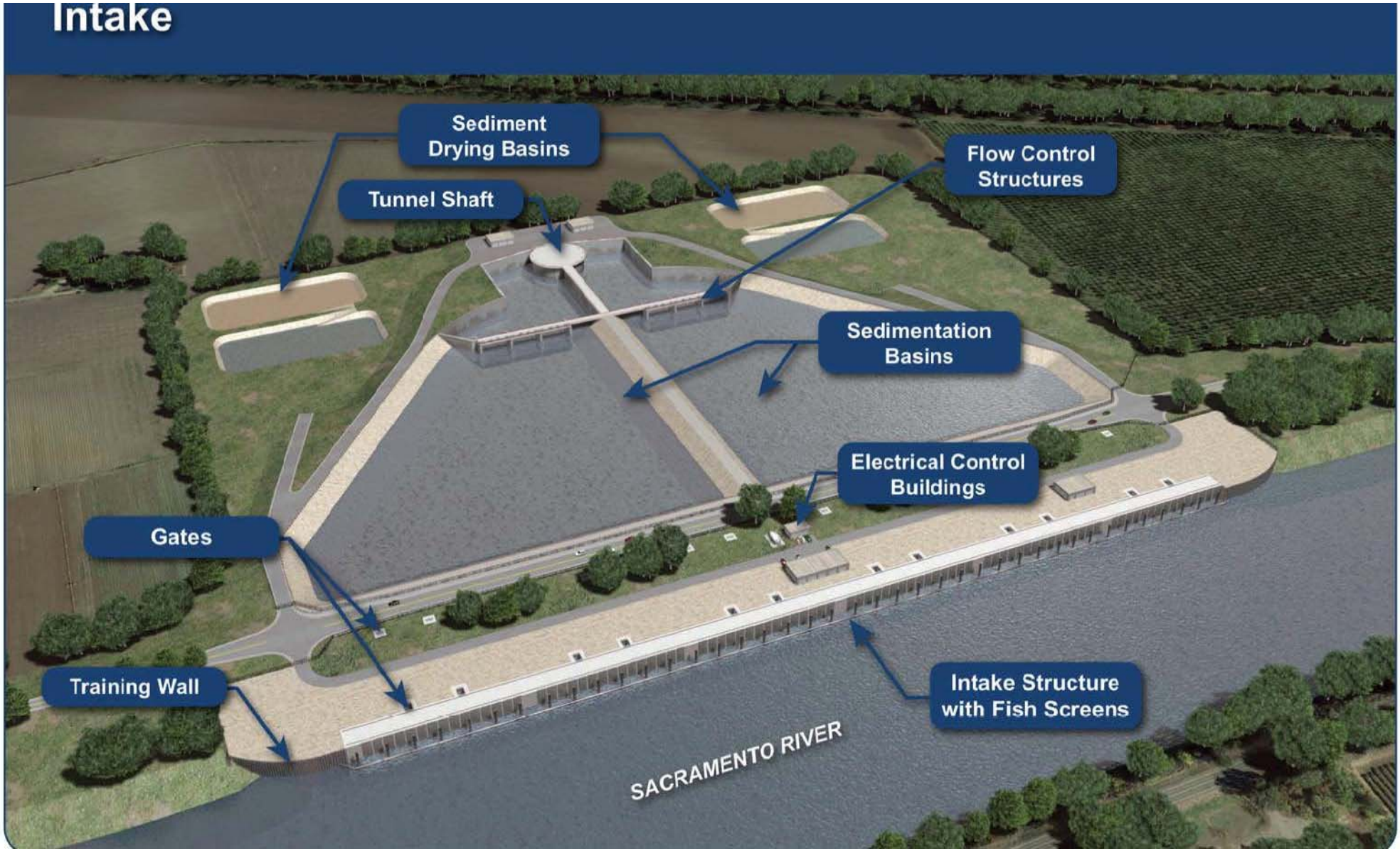
- Intakes
  - Two intakes (3,000 cfs each)
- Tunnel
  - One underground tunnel
  - Two potential corridors being considered
- Forebays
  - Intermediate and Southern
- Pumping plant
- South Delta conveyance facilities
- Other ancillary facilities

Delta Conveyance – Notice of Preparation

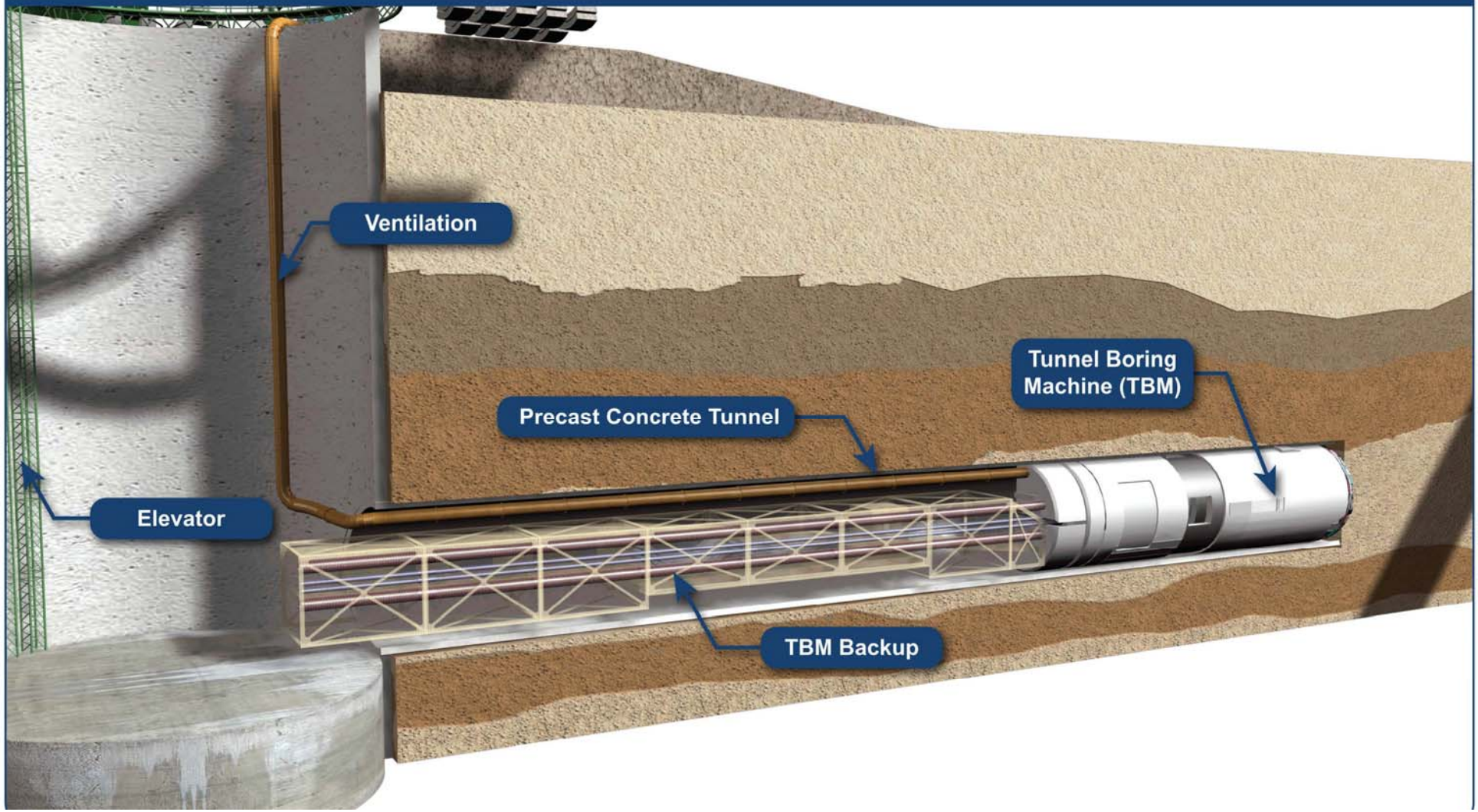
New Facilities



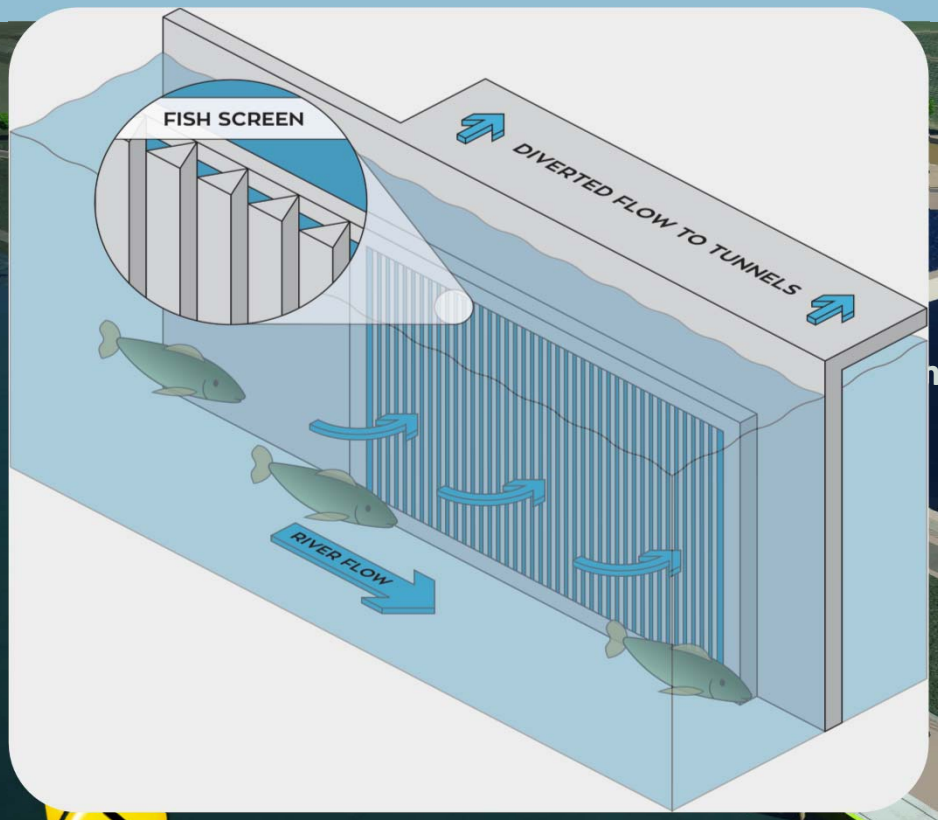
Intake

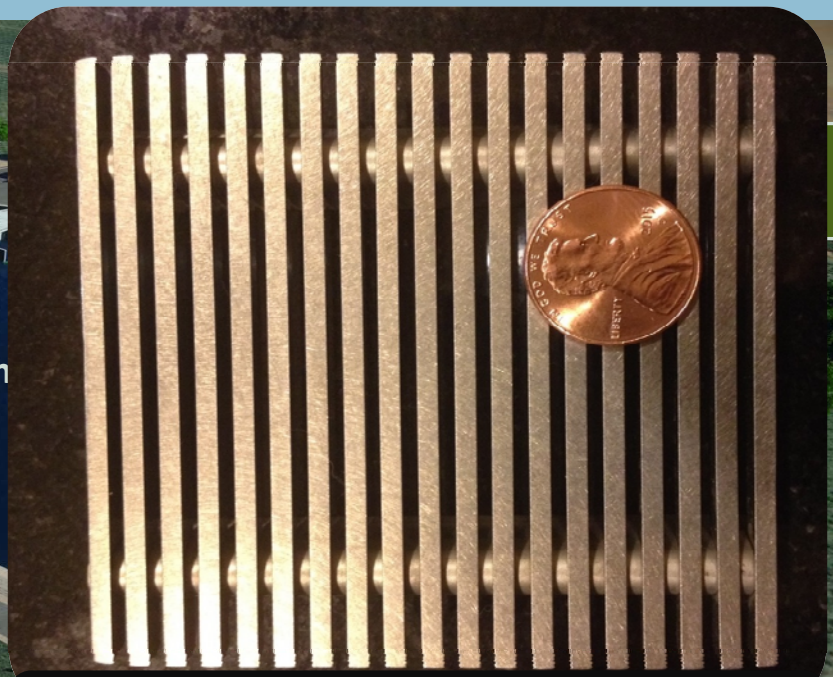

Sediment Drying Basins
Tunnel Shaft
Flow Control Structures
Sedimentation Basins
Electrical Control Buildings
Gates
Training Wall
Intake Structure with Fish Screens
SACRAMENTO RIVER

Tunnel


Ventilation
Tunnel Boring Machine (TBM)
Precast Concrete Tunnel
Elevator
TBM Backup

Conceptual River Intakes
Design to Protect Fish





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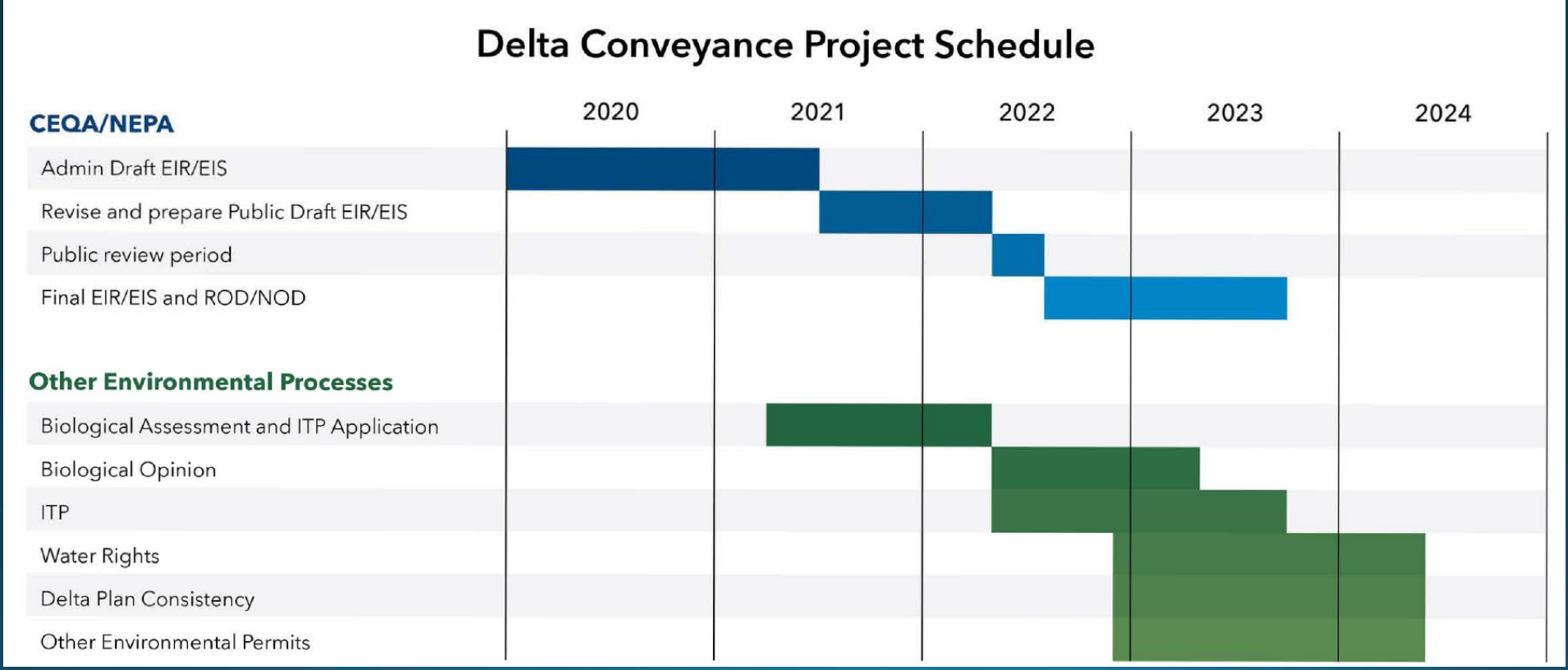
Flow approach velocity = 0.2 ft/sec

Project Schedule



Delta Conveyance

Agency Board Actions

December 2020
2021-22 Planning Costs

- Funding Agreement for planning costs
- Review Delta Conveyance Agreement in Principle
- Potential updates to DCA agreement

Post-2022 Planning Costs

Post-2023

- Project Participation
- Approve Project/Contract Amendment for Conveyance

Planning Activities (2020 – 2024)

- Draft EIR/S
- Final EIR/S
  - Federal/State ESA Approvals
  - Project Approval ROD/NOD
    - SWRCB - Change in Point of Diversion
    - DSC -Certification of Consistency

This slide does not show all necessary permits and regulatory processes. It is a general representation of one-way DWR may seek to comply with regulatory requirements.

DCP Preliminary Benefits

Preliminary DCP Benefits Analysis

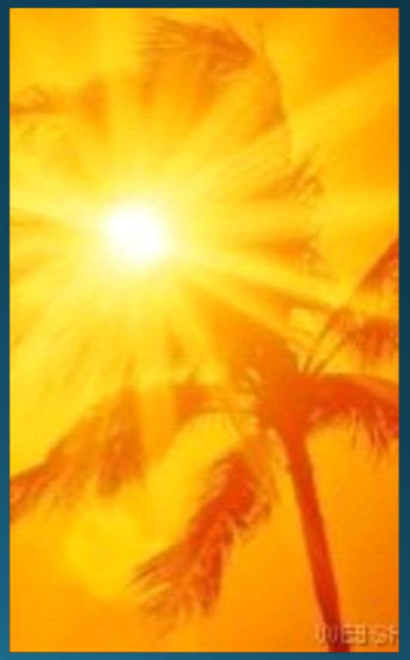
- DWR is currently developing the Delta Conveyance Proposed Project.
- At this time, DWR has not defined the project operations and has not completed regulatory processes that may impact project operations.
- Coarse estimate of water supply changes using CalSim II.
- Estimates may change as Delta Conveyance Project is further defined, permitting is completed and modeling is refined.

Water Reliability and Resiliency Benefits

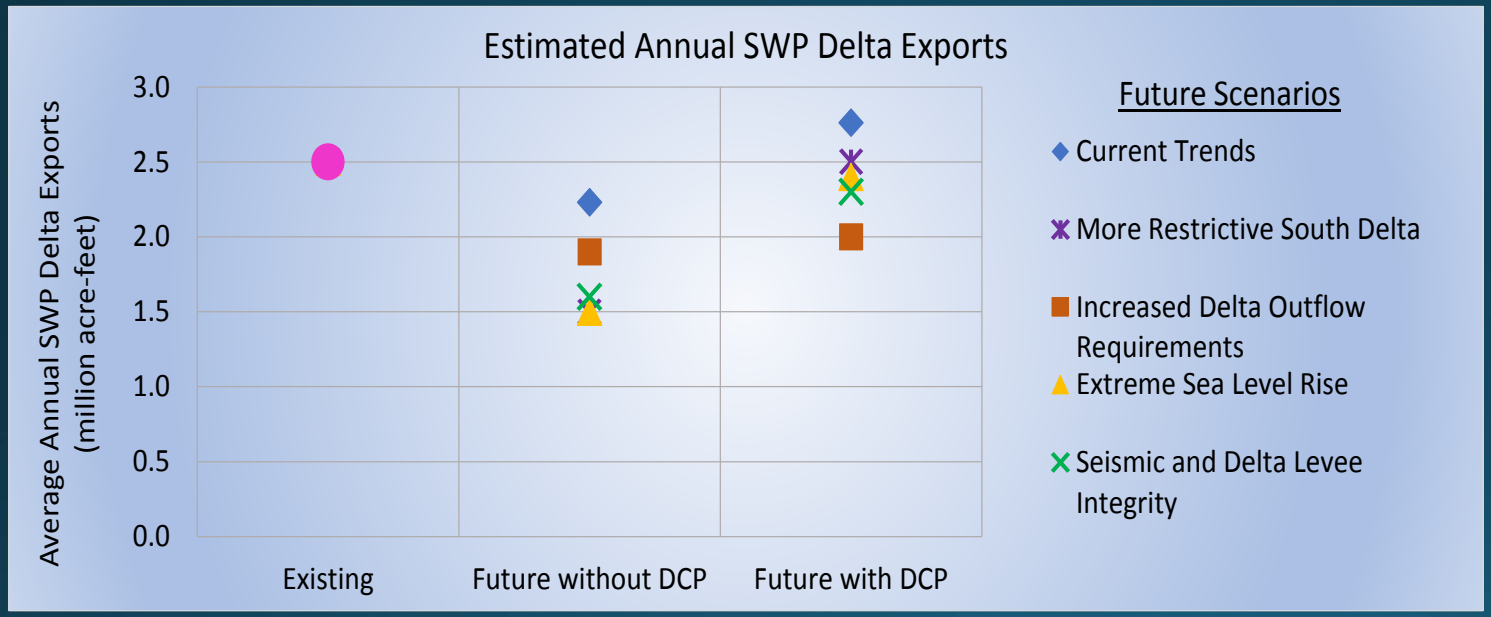
- Water supply reliability and SWP resilience
  - Climate change adaptation/stormwater capture
  - Sea-level rise adaptation
  - Seismic resilience
- South Delta flow pattern improvements for fisheries
- Water transfer capacity and carriage water savings
- Water quality improvements for SWP deliveries

Preliminary Water Supply Assessment Scenarios

- 5 plausible combinations of regulatory, climate and sea level, and seismic/levee risk future scenarios
- Each scenario simulated with and without DCP
- DCP operations based on California WaterFix



DCP Improves SWP Resilience Under Future Conditions



- SWP exports decrease by ~300 to 1000 TAFY under future scenarios without DCP, compared to the existing conditions
- DCP allows similar SWP exports as the existing conditions in the future – *demonstrates improved resilience*

**TAFY: thousand acre-feet per year on average*

System resilience is defined as the capacity to respond, absorb, adapt to, and recover from disruptive events

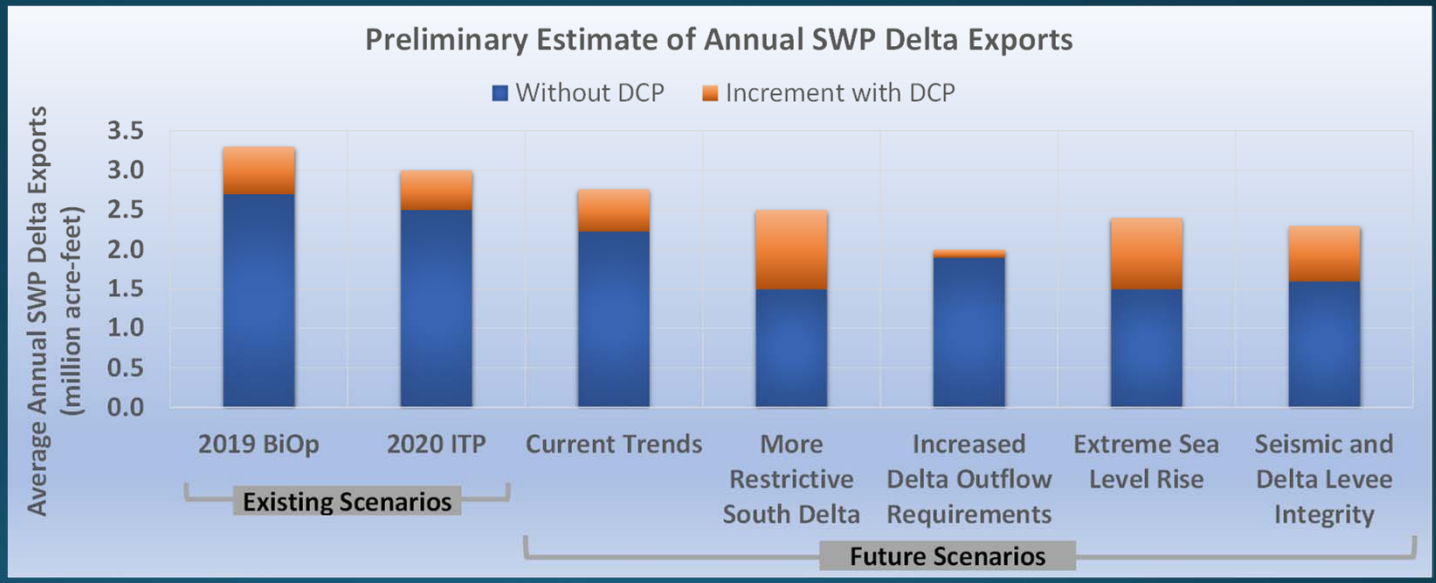
- Haimes 2009, Risk Analysis

"… intended to strengthen the resilience of water systems, thereby helping communities prepare for disruptions, to withstand and recover from shocks, and to adapt and grow from these experiences."

- California Water Resilience Portfolio 2020

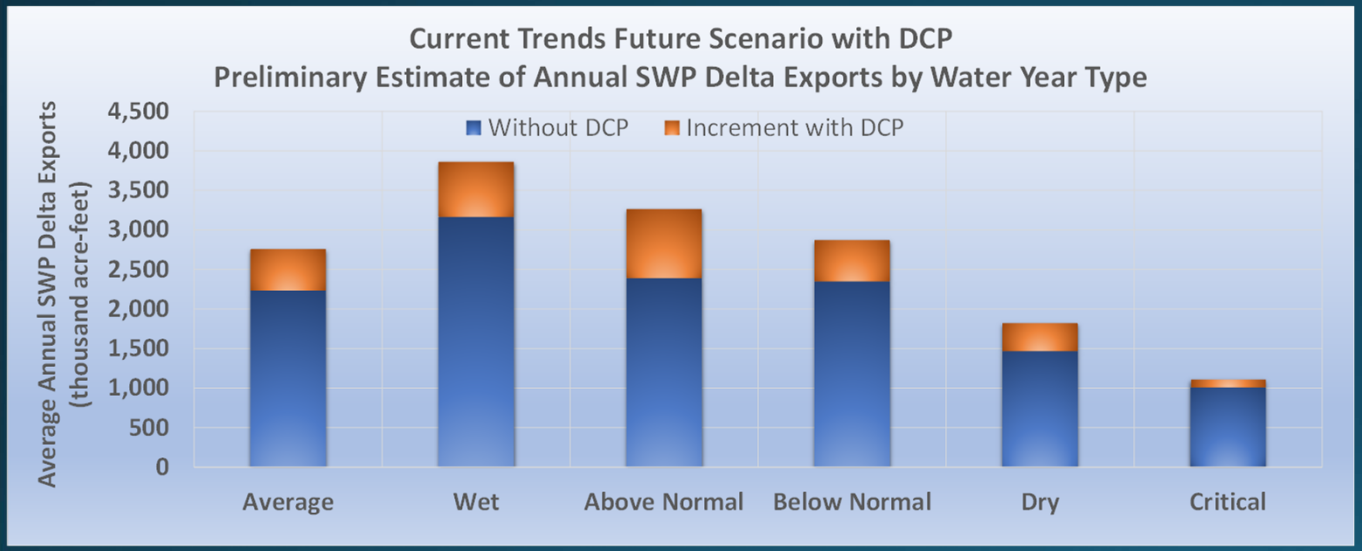
SWP Reliability Compared to Future Conditions Without DCP

- DCP shows potential to alleviate reductions to SWP reliability under many plausible future risk scenarios
  - ~100 TAFY to 1000 TAFY under greater regulatory restrictions
  - ~700 TAFY under seismic risks and delta island flooding
  - ~900 TAFY under extreme sea level rise
- Exact future likely a combination of climate/hydrology, sea level, regulatory, seismic, and other risks



**TAFY: thousand acre-feet per year on average*

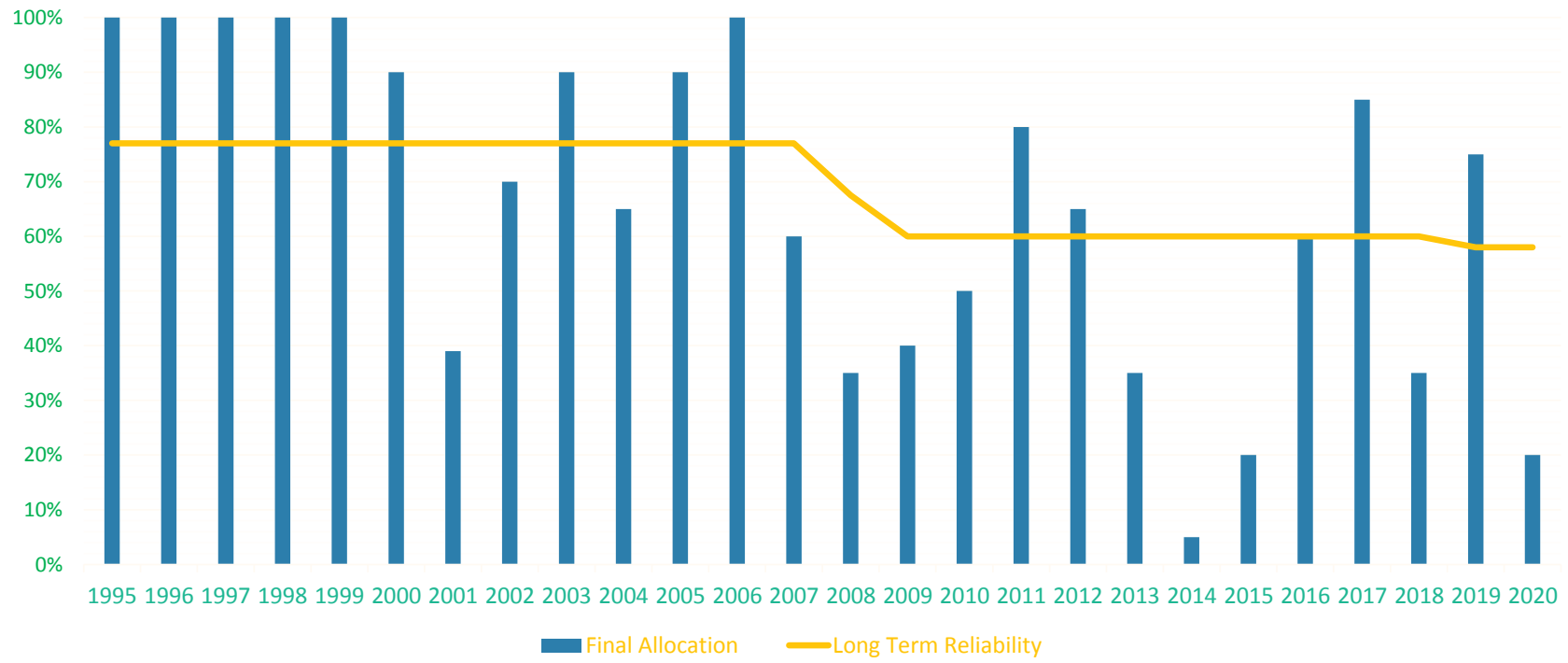
Preliminary Estimate of Potential SWP Water Supply Change with DCP Under Current Trends



**TAFY: thousand acre-feet per year on average*

- Current Trends scenario assumes:
  - current Delta regulations
  - projected climate change and sea level rise around year 2040
  - WaterFix operations for DCP
- Estimated SWP export improvement with DCP of ~500 TAFY under the Current Trends scenario
- Most of the export improvement in wetter years
- As DCP Proposed Project is further defined and modeling is refined, water supply estimates may change

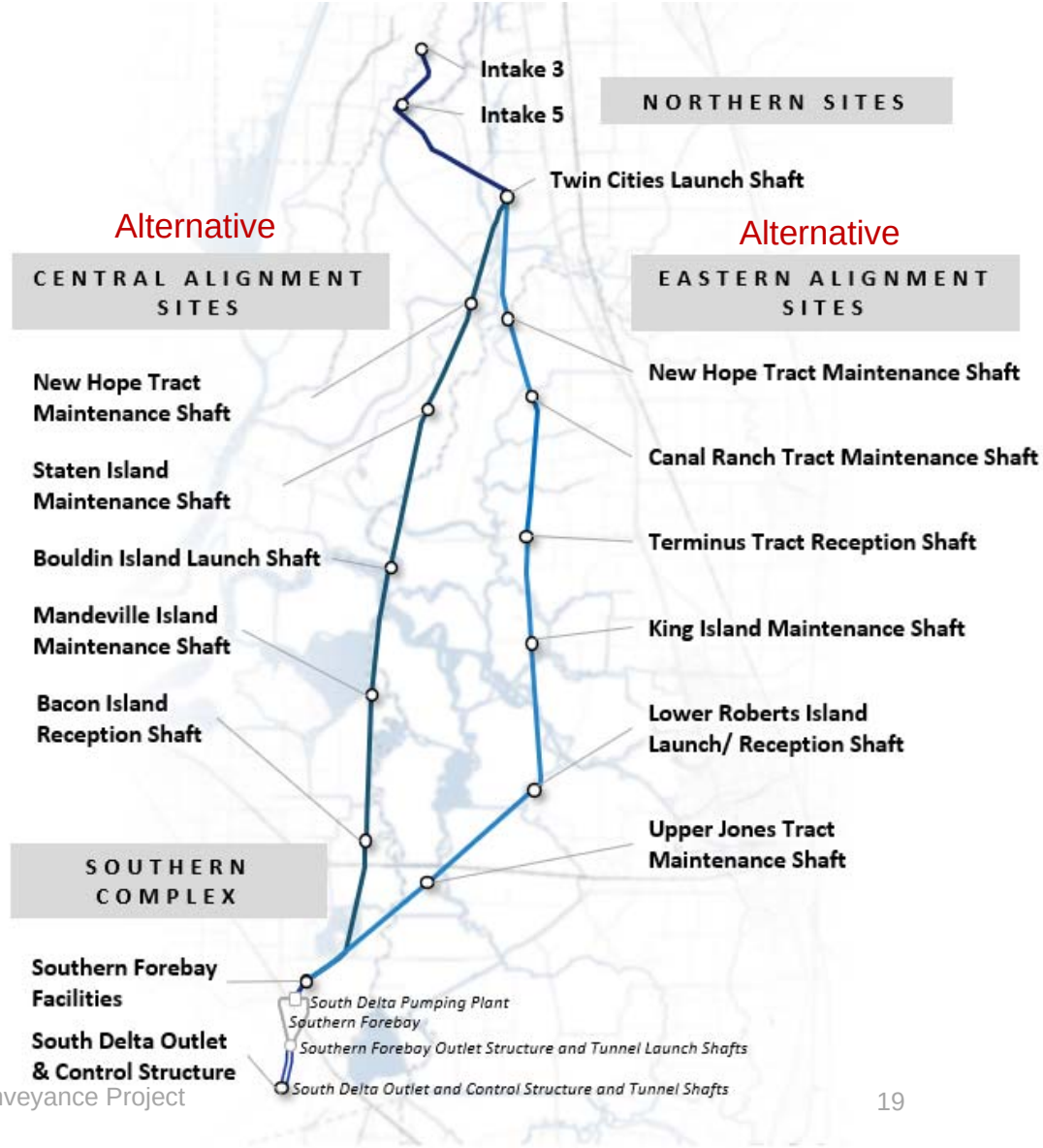
Decreasing Trend in SWP Allocations



DCP Preliminary Costs and Cost Allocation

Cost Information Assumptions

- Proposed Facilities Included in Estimate:
  - One Tunnel - Total capacity 6,000 cfs
  - Two intakes at 3,000 cfs each
  - 42 miles of tunnel and associated shafts
  - Southern Complex Facilities
    - Pump Station
    - Forebay
    - Connections to existing CA Aqueduct

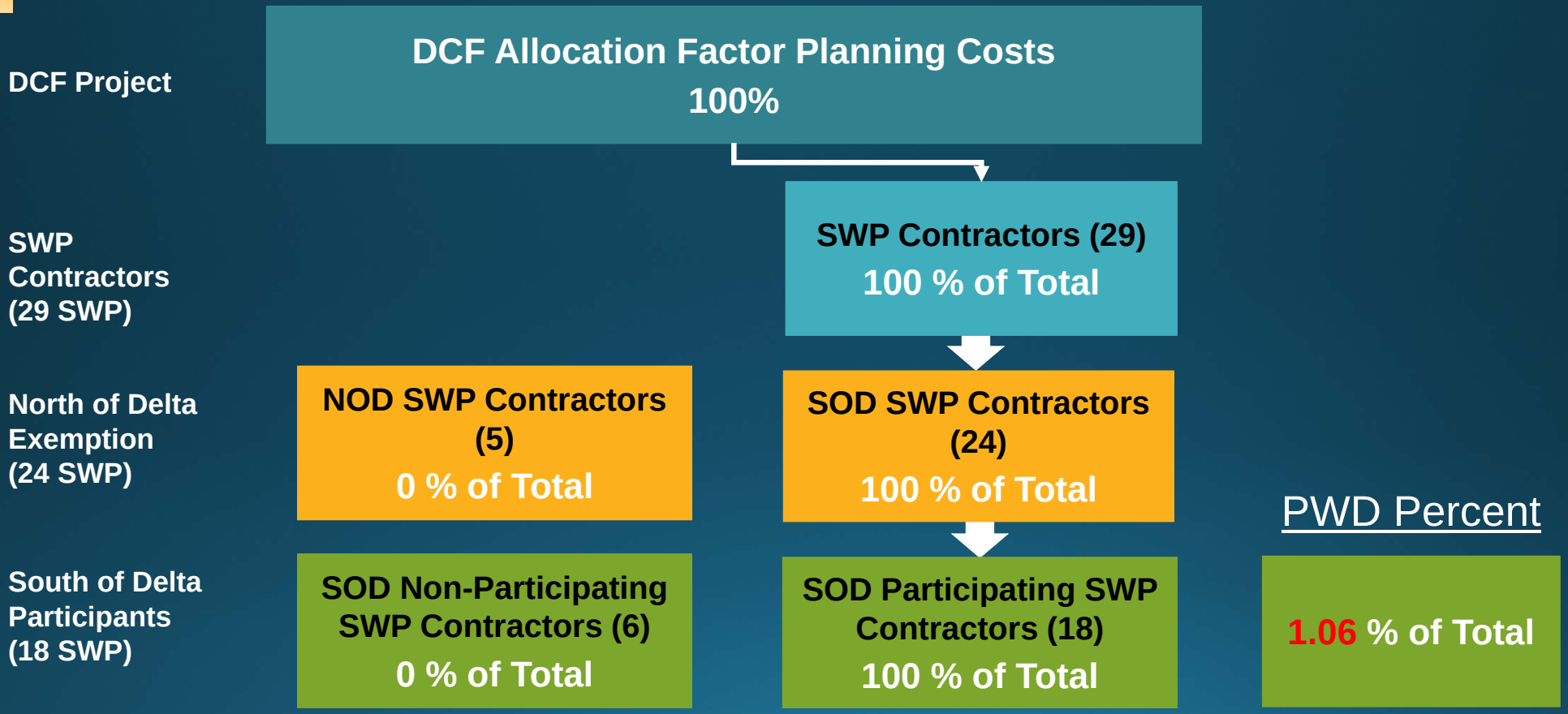


DCA Cost Assessment

DCA Program Scope:	Cost assessment based on DWR's Proposed Project in NOP Conceptual Engineering Report (CER) is not completed
Purpose:	Early cost assessment to inform PWA's investment in project planning
DCA Cost Assessment:	$15.9 billion in non discounted dollars
Included:	Based on preliminary engineering but includes project costs for construction, management, oversight, mitigation, planning, soft costs and contingencies

Planning Funding Agreements

DCF Allocation Factor (%) – Planning Costs



True-Up Previous DCP Planning Funds

- 4 SWC Agencies provided $9.2M in advance of the AIP to support DCP planning in 2020
- $9.2M will be credited to those agencies over the 4-year planning period
- Total needed from DCP participants is:

  $331.5M + $9.2M = **$340.7**
- Total contribution from PWD is:

  $340.7M * 1.06% = **$3.6M**

Planning Costs 2021-2024 (PWD)

Year	Total Planning $M (DCA and DWR)	True Up $9.2M $M	PWD 1.06% Share Planning + True Up
2021	$61.5	$2.3	$668,215
2022	$60	$2.3	$651,917
2023	$100	$2.3	$1,086,528
2024	$110	$2.3	$1,195,181
TOTAL	$331.5	$9.2	$3,601,840