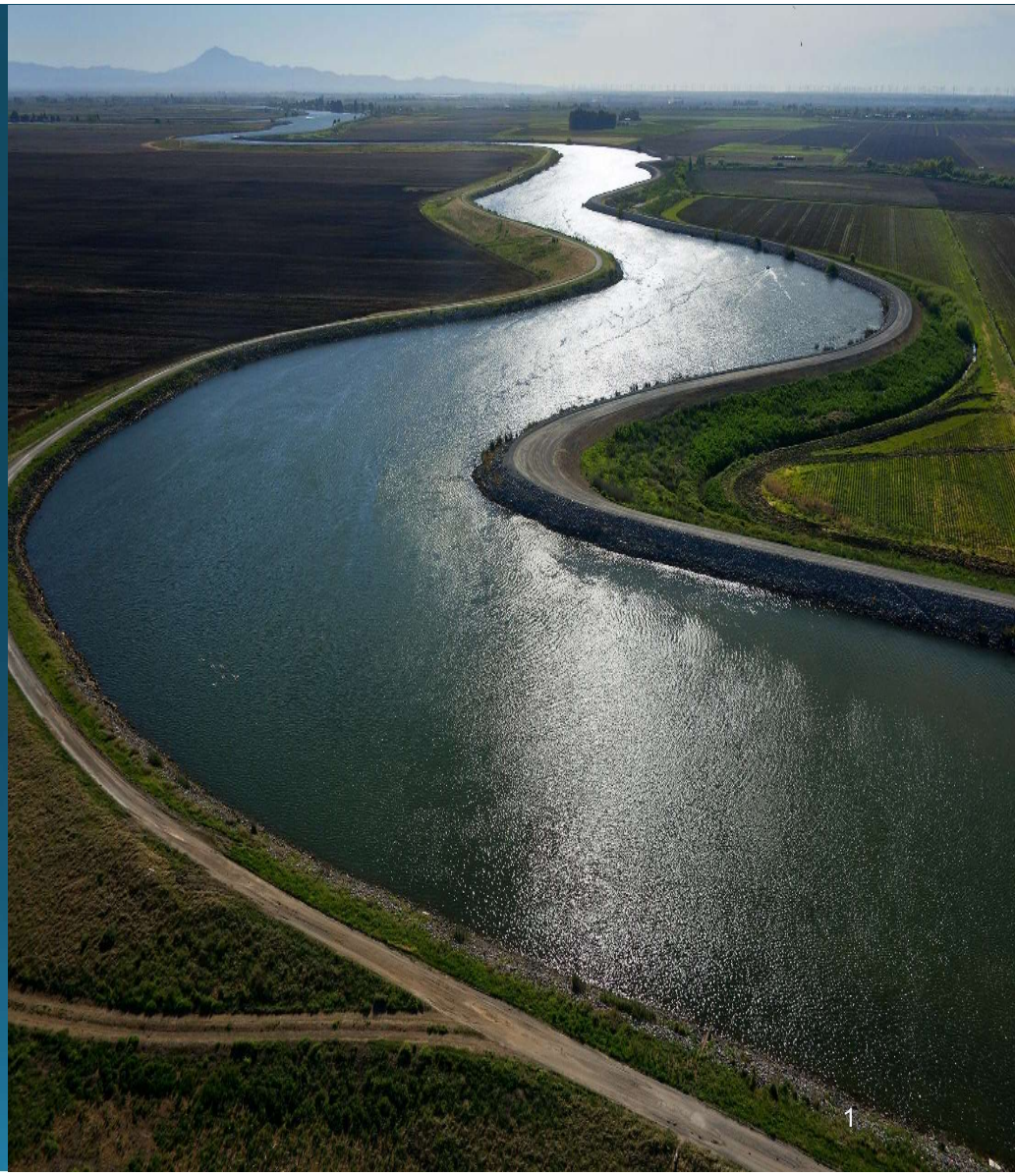
Delta Conveyance Project

PALMDALE WATER DISTRICT



Presentation Outline

- Previous Board Action
- Proposed Board Action
- Delta Conveyance Project
- DCP Benefits
- DCP Cost Estimate
- DCP Participants
- Schedule and Status Update
- Staff Recommendation

Previous Board Actions - November 09, 2020

- Notified DWR of desire to participate in DCP at a 1.06% participation level
- Executed funding agreement with DWR for environmental planning costs in the amount of $3,601,840.
- Executed a Joint Powers Agreement to become a member of the Delta Conveyance Design and Construction Authority.

Proposed Board Action

1. Authorizing the providing of additional funding to the Department of Water Resources for the Palmdale Water District's share of pre-construction costs associated with the proposed Delta Conveyance Project, and

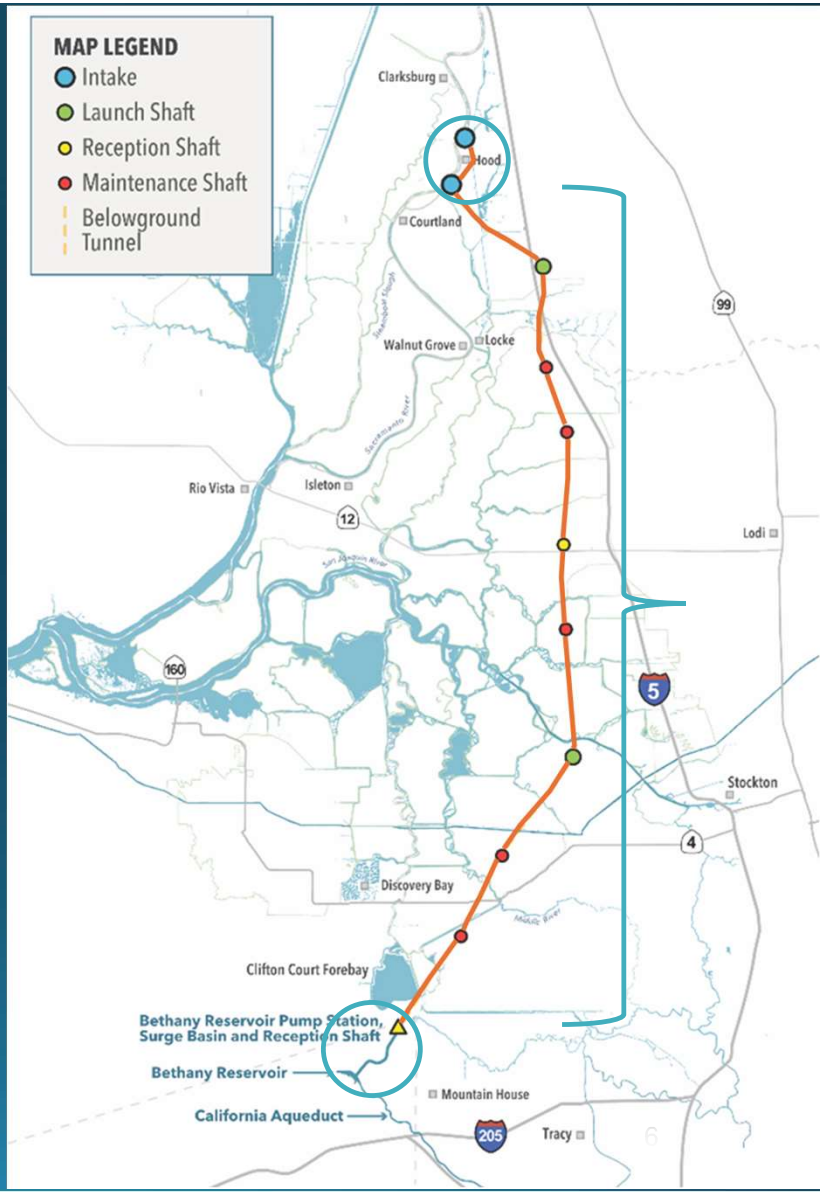
2. Considering the Department of Water Resources' previously Certified EIR, adopt CEQA Responsible Agency Findings, CEQA findings of fact and CEQA statement of overriding considerations.

Delta Conveyance Project

What is the Delta Conveyance Project (DCP)?

DWR issued FEIR/NOD in 12/2023 and selected Bethany Reservoir Alignment

- Two new diversion intakes in the north Delta with state-of-the-art fish screens
- Total diversion capacity of 6,000 cfs (3,000 cfs each)
- 45 miles of 36-feet single tunnel, from new intakes to California Aqueduct at Bethany Reservoir
- New pumping plant connecting the tunnel to Bethany Reservoir



How would the Delta Conveyance Project Help?

Restores and protects ability to deliver SWP Water Supply

- Adding **intakes in the north Delta** would allow the **capture and movement of water in the winter** that would otherwise be unavailable.
- North Delta intakes would add capacity to **safely divert in the winter during high flow conditions**, while meeting water quality and species protections.
- This added ability to divert high flows will help **guard against declining baseline water deliveries**, protect water agencies' baseline supplies, and **minimize future losses**.
- Modernizing the aging SWP infrastructure will **protect against seismic risk and sea level rise** and aid in ensuring that we capture, move and store water when it is available and when it is safe for fish and water quality.

Time to Modernize Now — Risks Are Mounting

Purpose

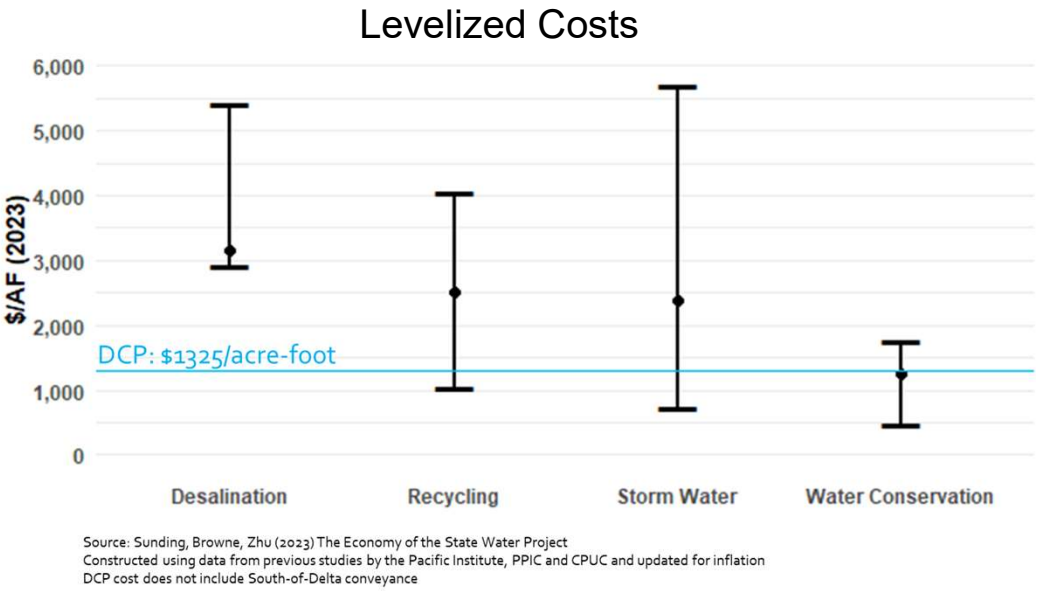
- **Modernize** the aging SWP infrastructure in the Delta to **restore** and **protect** the reliability of SWP water deliveries in a **cost-effective** manner, consistent with the State's Water Resilience Portfolio.

Objectives

- **Address** sea level rise and climate change
- **Minimize** water supply disruption due to seismic risk
- **Protect** water supply reliability
- **Provide** operational flexibility to improve conditions for aquatic species

Are There Alternatives to the DCP ?

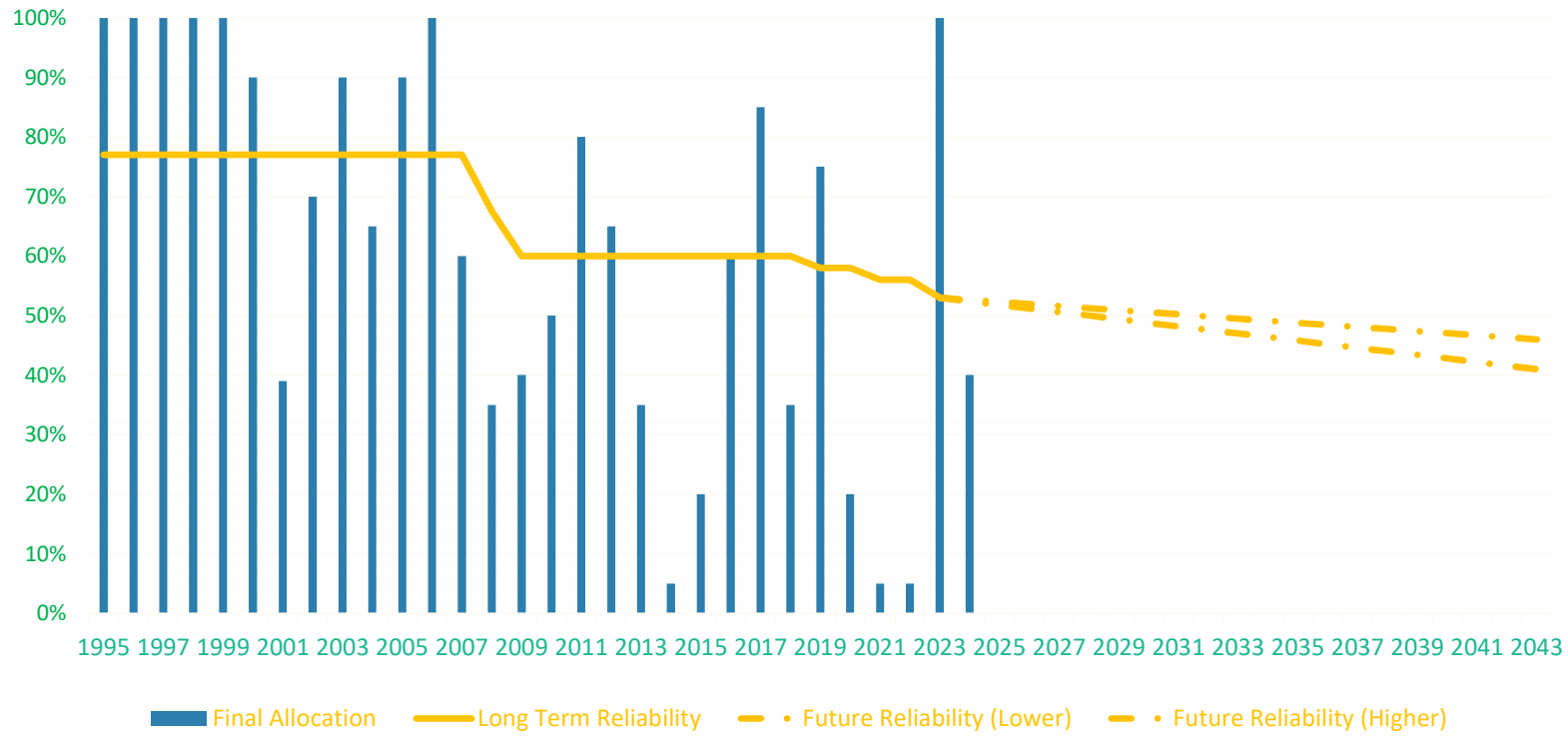
- The DCP is specifically geared toward protecting and preserving the long-term viability of SWP infrastructure and water supplies.
- While other types of supplies and conservation are important for regional sustainability, they don't directly address the functionality of the State Water Project.
- Levelized costs indicate DCP would provide one of the lowest cost water supplies.



Source: Sunding, Browne, Zhu (2023) The Economy of the State Water Project
Constructed using data from previous studies by the Pacific Institute, PPIC and CPUC and updated for inflation
DCP cost does not include South-of-Delta conveyance

DCP Benefits

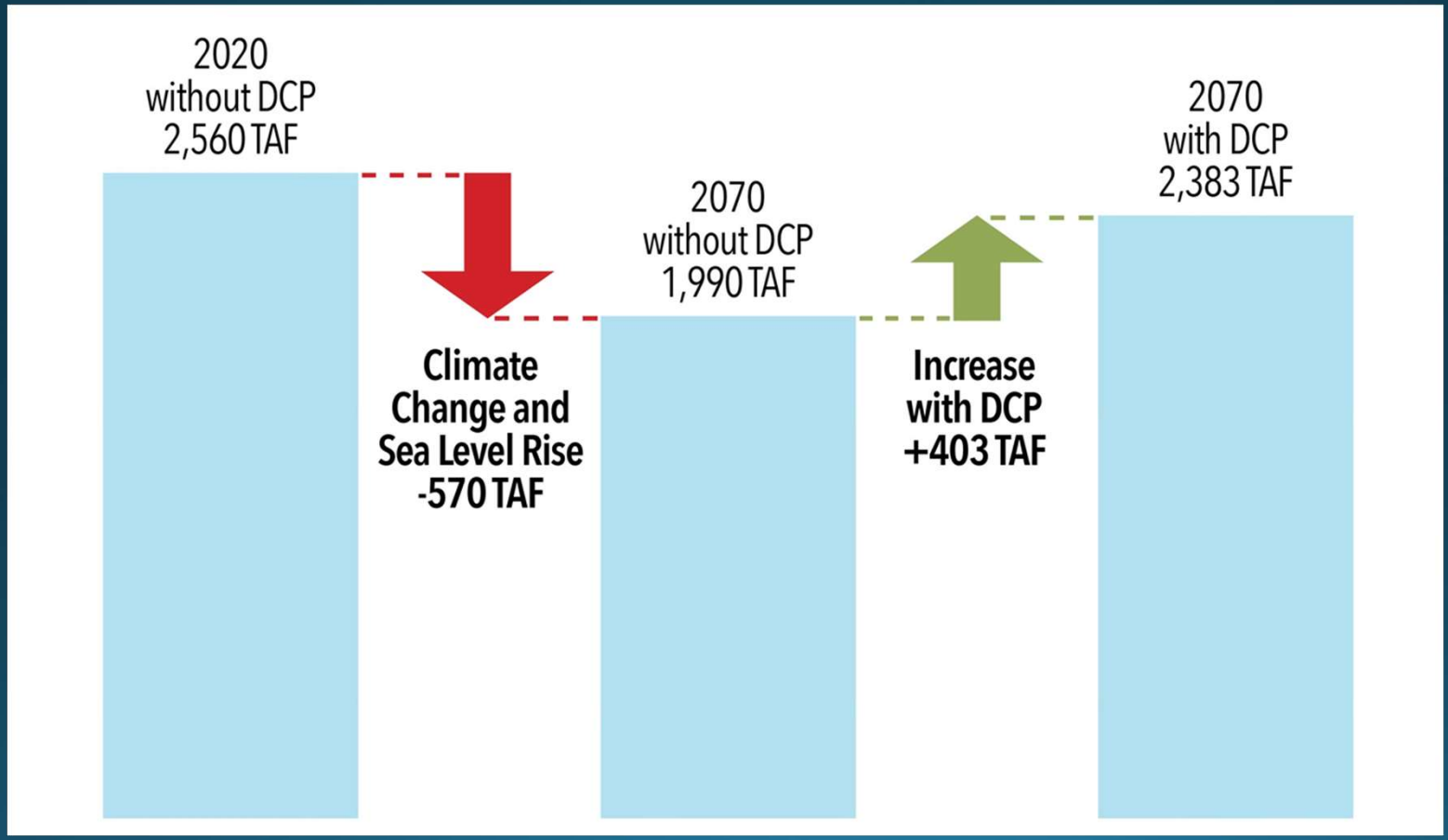
Decreasing Trend in SWP Allocations



DCP Benefits

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

DCP Restores SWP Water Supply Reliability

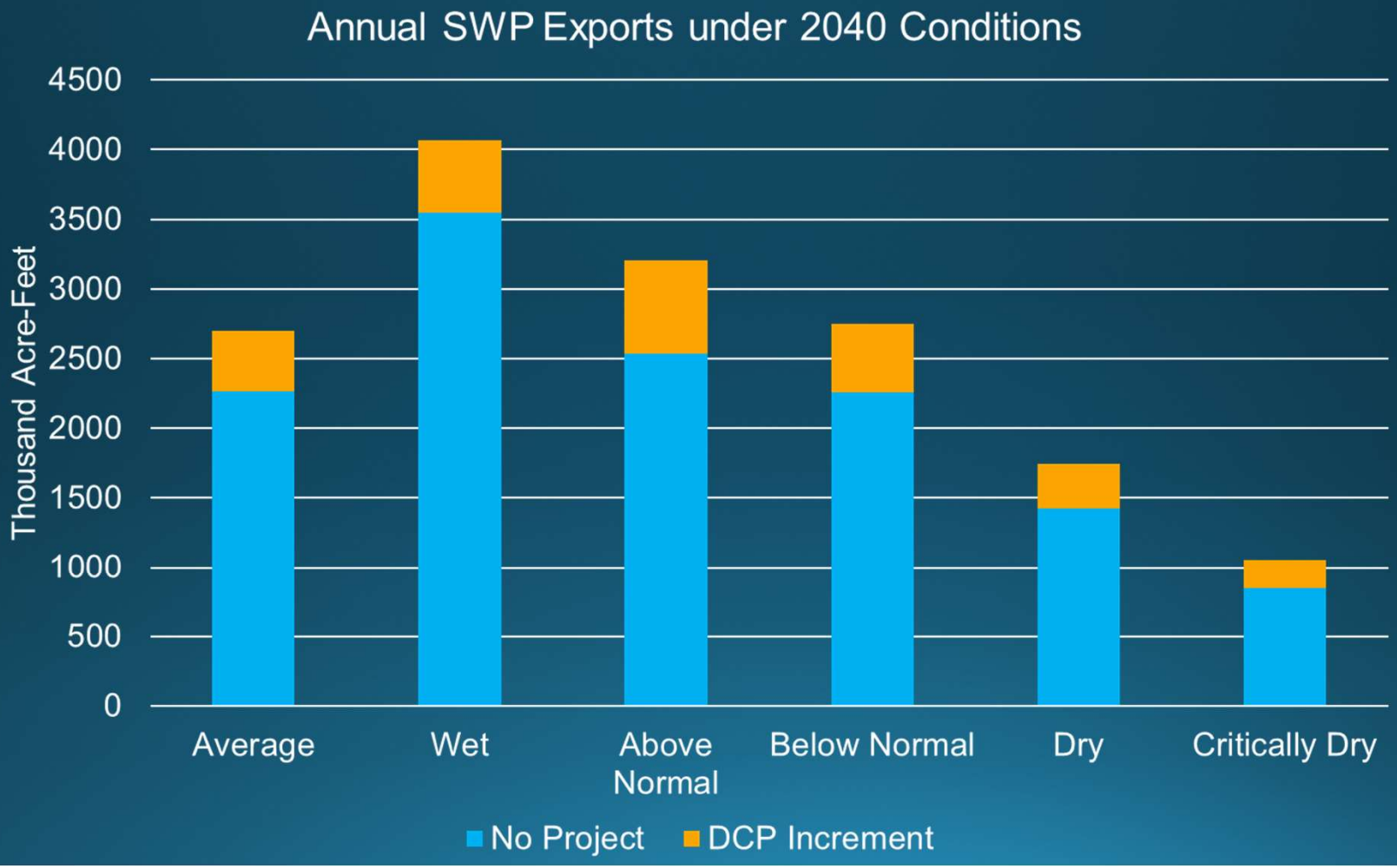


Water Supply Opportunities from DCP

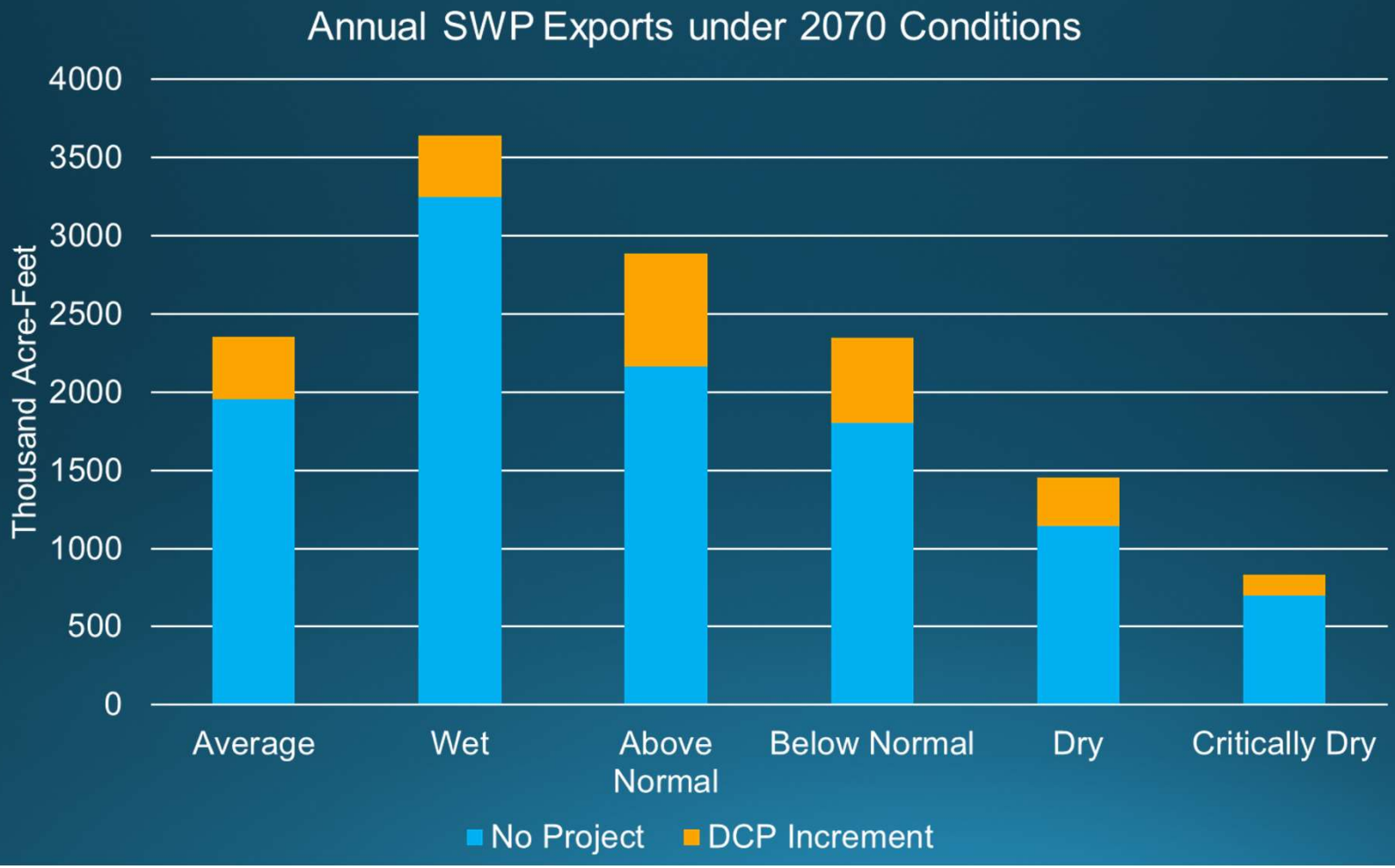
If the Delta Conveyance Project was operational during the high rain events of winter 2021-2022, January 2023 and January 1 through June 13, 2024, a significant amount of water could have been captured and moved.

	Winter 2021-2022	January 2023	January 1–June 13, 2024
Amount of water that could have been captured:	**236,000** acre-feet	**228,000** acre-feet	**941,000** acre-feet
That's enough water to supply:	Over **2.5 million** people for one year	Over **2.3 million** people for one year	Over **9.8 million** people for one year
OR			
	Nearly **850,000** households for one year	Nearly **800,000** households for one year	Nearly **3.3 Million** households for one year

DCP Benefits in All Hydrologic Conditions



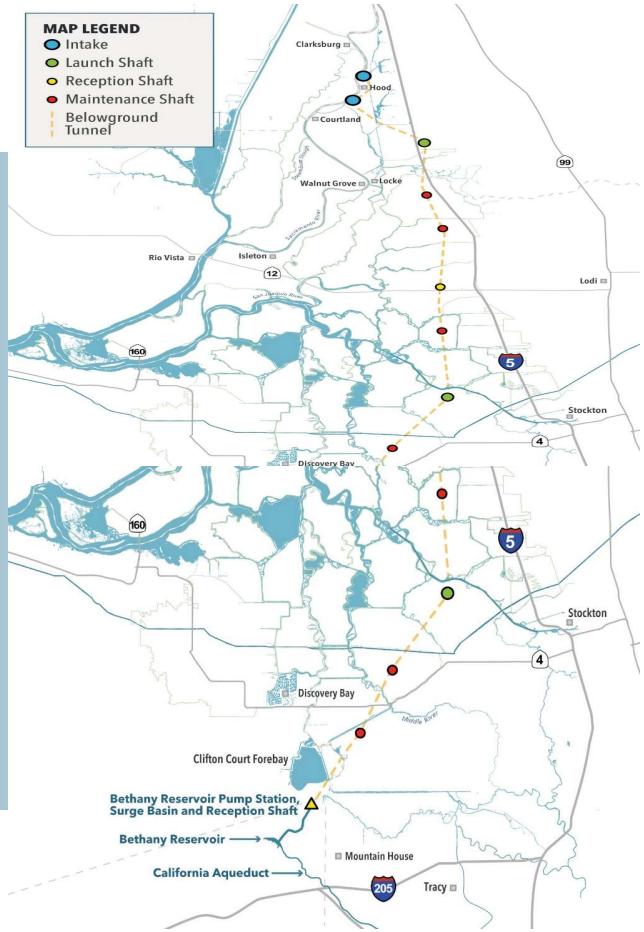
DCP Benefits in All Hydrologic Conditions



DCP Cost Estimate

What did cost estimate include?

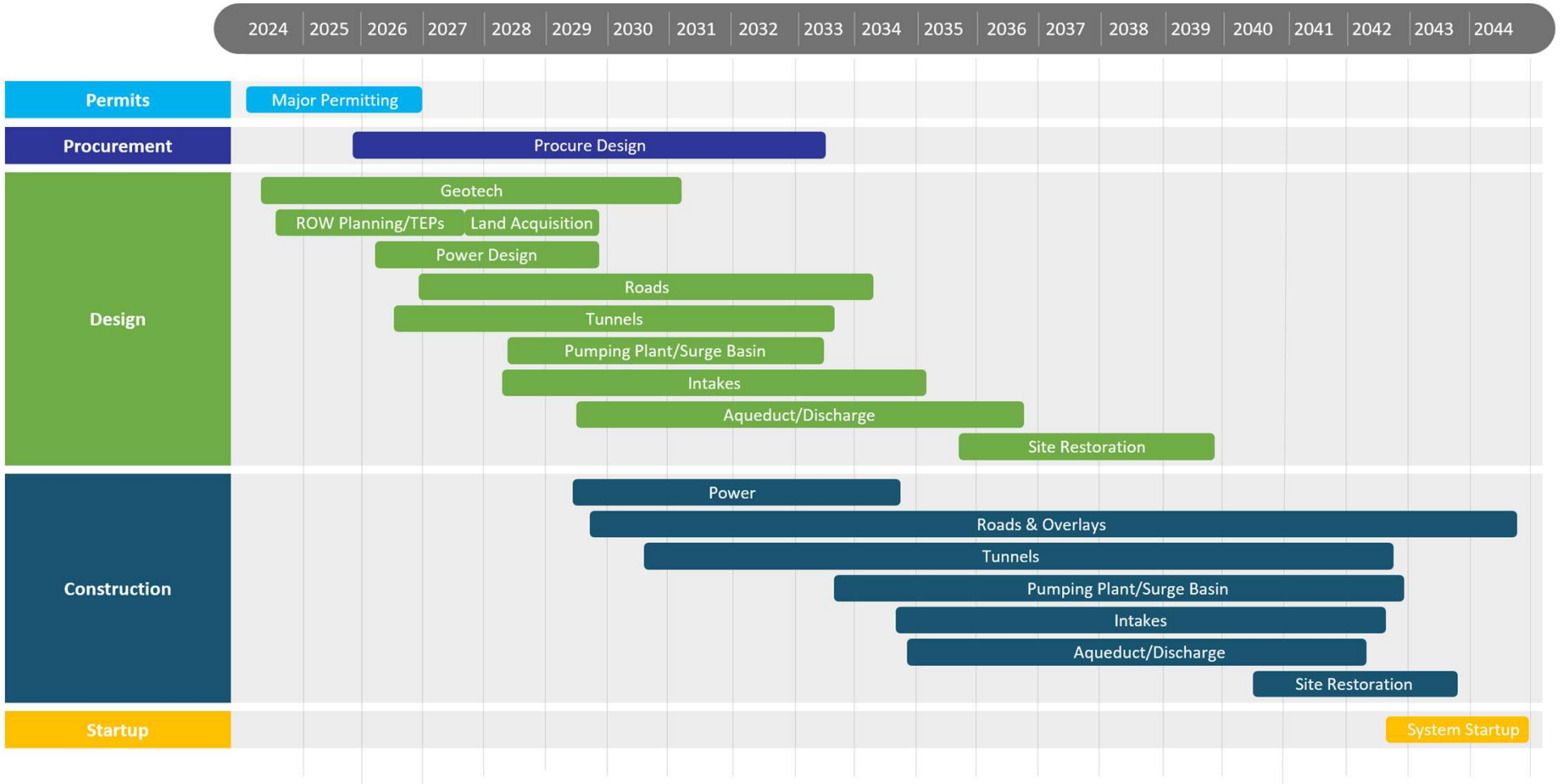
- **Bethany Reservoir Alignment – 6,000 cfs (~10% design)**
  - ➢ Two (2) new intakes in the North Delta
  - ➢ Conveyance tunnel: 45 miles of 36-ft ID single tunnel, 11 shafts
  - ➢ New pumping plant, aqueducts and discharge structure connecting directly to Bethany Reservoir
- **Land acquisition, power supply & consumption, mitigation, Community Benefits Program, CCWD settlement**
- **Accounts for uncertainty w/ contingency and risk treatment costs**



Estimate Methodology

- "Bottoms up" (deterministic, unit cost) estimating approach based on labor, equipment, materials, and schedule
- Estimate uses 2023 "real" undiscounted dollars
- Reconciliation process with independent cost estimating and resolution
- Mostly AACE Class 4 Estimate (accuracy +80% to -55%) with some Class 5 aspects
- Assumes Design-Bid-Build procurement

DCP Schedule Summary



Draft – Work in Progress; Subject to Change

2023 Cost Estimate Update

- **Completed reconciliations:**
  - Independent construction est. prepared by DCA Design and Program Management teams – reconciled cost Δ ~2%
  - Independent Soft Cost estimates, reconciled differences and aligned to Master Program Schedule
  - Compared to the 2020 cost assessment corrected for inflation
- **Risk management**
  - $467M risk treatment costs included in construction est.
  - Construction contingency = 30%
  - Other Program Cost contingency = 0%, 15%, or 30% depending on item

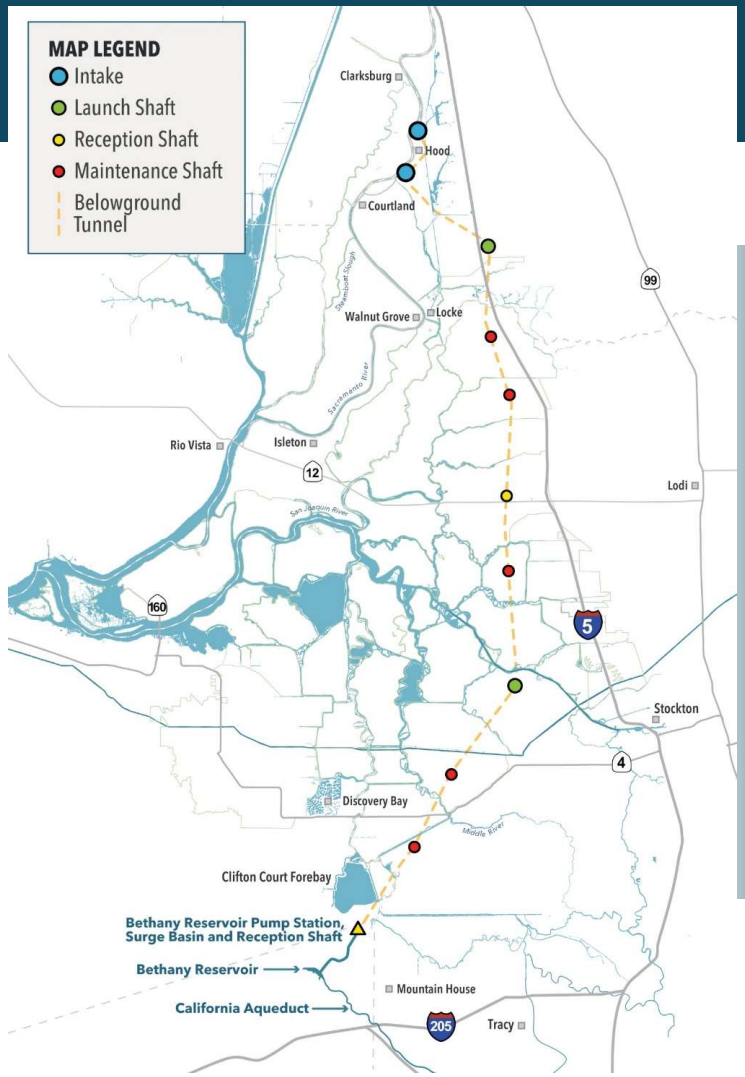
TOTAL CONSTRUCTION COSTS	BETHANY (2023) $15,012,000,000	% Construction Cost
Intakes	$1,714,000,000	--
Tunnel and Shafts	$6,353,000,000	--
Pumping Plant /Surge Basin/Aqueduct & Discharge	$3,198,000,000	--
Utilities and Logistics (power included below)	$283,000,000	--
Construction Sub-Total	**$11,548,000,000**	**--**
Contingency (30%)	**$3,464,000,000**	**--**
OTHER PROGRAM COSTS	**$5,108,000,000**	
Planning/Design/CM (Soft Costs)	**$3,328,000,000**	**22.2%**
DWR Oversite	$426,000,000	2.8%
DCA Program Management Office	$668,000,000	4.4%
DCA Engineering (Design and CM Services)	$2,167,000,000	14.4%
DCA Permits and Agency Coordination	$67,000,000	0.4%
Other Costs	**$1,780,000,000**	**--**
Land Acquisition	$158,000,000	--
Mitigation Program	$960,000,000	--
Power	$415,000,000	--
CCWD Settlement	$47,000,000	--
Community Benefits Program	$200,000,000	--
	TOTAL $20,120,000,000	

Costs Remained Flat Compared to 2020 Cost Assessment

TOTAL CONSTRUCTION COSTS	BETHANY (2023) $15,012,000,000	% Const Cost	2020 Assessment $ 12,101,000,000	% Const Cost	*2020 in $2023 $15,346,000,000
Two Intakes	$1,714,000,000	--	$ 1,448,000,000	--	$1,836,000,000
Tunnel and Shafts	$6,353,000,000	--	$ 4,473,000,000	--	$5,672,000,000
Bethany Complex / Southern Complex Facilities (Forebay)	$3,198,000,000	--	$ 2,326,000,000	--	$2,950,000,000
Utilities, Power and Logistics (Power for Bethany Below)	$283,000,000	--	$ 522,000,000	--	$662,000,000
Construction Sub-Total	**$11,548,000,000**	**--**	**$ 8,769,000,000**	**--**	**$11,120,000,000**
Contingency (30% / 38%)	**$3,464,000,000**	**--**	**$ 3,332,000,000**	**--**	**$4,226,000,000**
Other Program Costs	**$5,108,000,000**		**$3,800,000,000**		**$4,827,000,000**
Planning/Design/CM (Soft Costs)	**$3,328,000,000**	**22.2%**	**$3,080,000,000**	**25.5%**	**$3,906,000,000**
DWR Oversite	$426,000,000	2.8%	$ 180,000,000	1.5%	$228,000,000
DCA Program Management Office	$668,000,000	4.4%	$ 420,000,000	3.5%	$533,000,000
DCA Engineering (Design and CM Services)	$2,167,000,000	14.4%	$ 2,420,000,000	20.0%	$3,069,000,000
DCA Permits and Agency Coordination	$67,000,000	0.4%	$ 60,000,000	0.5%	$76,000,000
Other Costs	**$1,780,000,000**	**--**	**$720,000,000**	**--**	**$921,000,000**
Land Acquisition	$158,000,000	--	$ 320,000,000	--	$416,000,000
Mitigation Program	$960,000,000	--	$ 400,000,000	--	$ 505,000,000
Power	$415,000,000	--	included above	--	included above
CCWD Settlement	$47,000,000	--	$0	--	$0
Community Benefits Program	$200,000,000	--	$0	--	$0
TOTAL	**$20,120,000,000**		**$15,901,000,000**		**$20,173,000,000**

*** 2020 Dollars Escalated to 2023 Dollars based on USBR CCT = 26.8%**

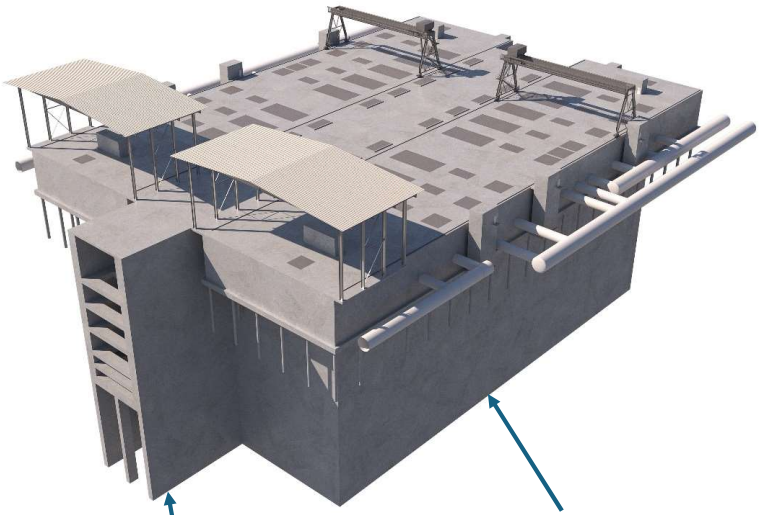
What are Innovations?



- Represent opportunities to reduce impacts, cost, schedule, and/or risk
- Indicate how the project could evolve through future value engineering
- Developed 19 innovations for secondary cost estimate - do not currently represent changes to the project description

Innovation Example – Bethany Reservoir Pumping Plant

Current EPR Design



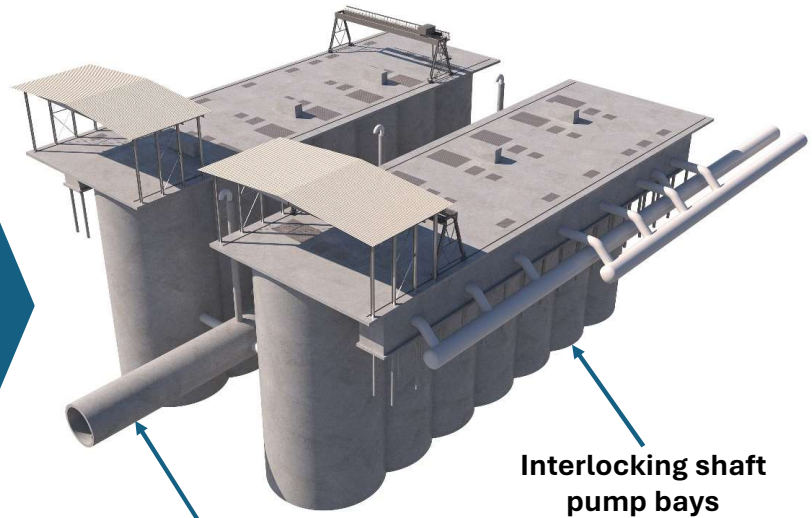
Rectangular concrete wet well and inlet conduit from tunnel

Rectangular concrete pump bays

INNOVATION ADVANTAGES

- Reduced quantities, saves:
  - 274,000 yd^3 soil excavation
  - 84,000 yd^3 concrete
  - 10,400 tons rebar
- Shortens construction schedule by 981 days
- Reduces direct construction cost by $138,720,000
- No changes to above ground configuration or features

Innovation Design



Tunnel connection to pump bays

Interlocking shaft pump bays

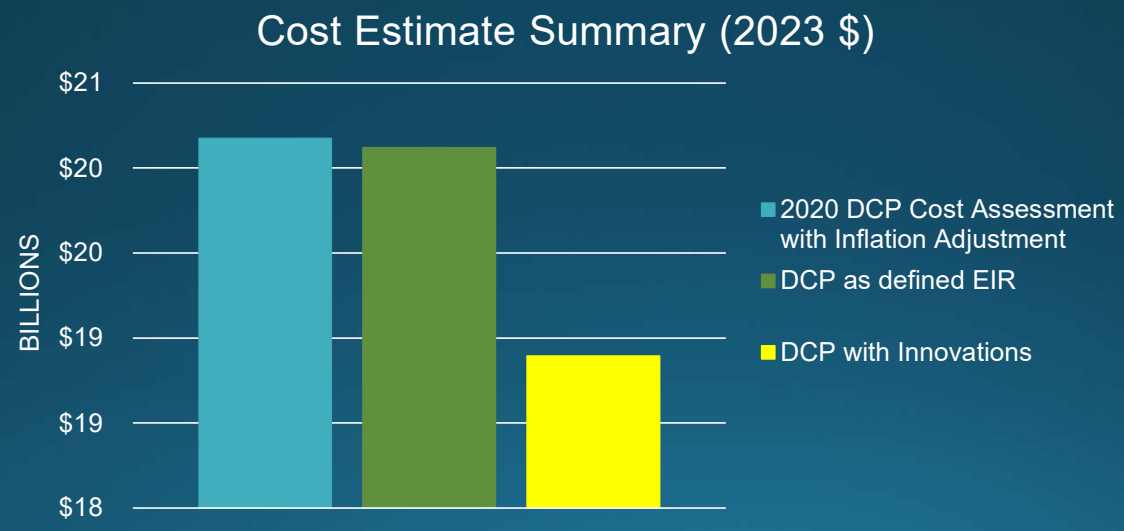
Innovations help Reduce Costs

- **Estimate Total Project Cost w/ Innovations using:**
  - proportion of risk treatment costs
  - contingency %, labor %
  - direct application of "other costs"
- **Does not account for cost benefits of risk or schedule reduction**
- **Does not account for Collaborative Delivery contracting**
- **Innovations reduce total project cost by $1.23B , or 6% of total cost**

	Total Project Cost Estimate ($2023)	% Const Cost	Total Project Cost w/ Innovations ($2023)
TOTAL CONSTRUCTION COSTS	**$15,012,000,000**		**$ 14,008,000,000**
Two Intakes	$1,714,000,000	--	$ 1,678,000,000
Tunnel and Shafts	$6,353,000,000	--	$ 6,130,000,000
Pumping Plant /Surge Basin/Aqueduct & Discharge	$3,198,000,000	--	$ 2,703,000,000
Utilities and Logistics	$283,000,000	--	$ 264,000,000
Construction Sub-Total	**$11,548,000,000**	**--**	**$ 10,775,000,000**
Contingency (30%)	**$3,464,000,000**	**--**	**$ 3,223,000,000**
Other Program Costs	**$5,108,000,000**		**$4,838,900,000**
Planning/Design/CM	**$3,328,000,00**	**22.2%**	**$3,106,000,000**
DWR Oversite	$426,000,000	2.8%	$ 398,000,000
DCA Program Management Office	$668,000,000	4.4%	$ 623,000,000
DCA Engineering (Design and CM Services)	$2,167,000,000	14.4%	$ 2,022,000,000
DCA Permits and Agency Coordination	$67,000,000	0.4%	$ 63,000,000
Other Costs	**$1,780,000,000**	**--**	**$1,780,000,000**
Land Acquisition	$158,000,000	--	$158,000,000
Mitigation Program	$960,000,000	--	$960,000,000
Power	$415,000,000	--	$415,00,000
CCWD Settlement	$47,000,000	--	$47,000,000
Community Benefits Program	$200,000,000	--	$200,000,000
TOTAL	**$20,120,000,000**		**$18,894,000,000**

DCP Cost Estimate Summary

- Delta Conveyance Project construction and program costs in 2023 dollars:



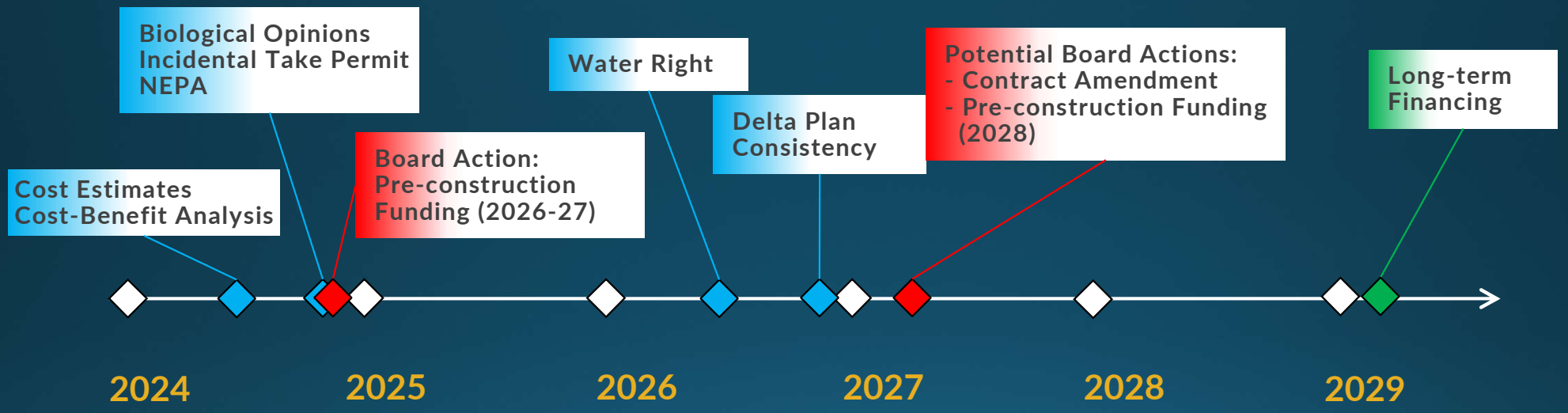
DCP Participants

Participating Public Water Agencies (PWAs)

Agency	Table A (%)	DCP Planning Funding (%)
Alameda County FC&WCD, Zone 7	1.93%	2.20%
Alameda County Water District	1.01%	1.15%
Santa Clara Valley Water District	2.40%	3.23%
Kern County Water Agency	26.56%	11.22%
Dudley Ridge Water District	0.99%	1.02%
San Luis Obispo County FC&WCD	0.60%	0.60%
Antelope Valley-East Kern Water Agency	3.47%	3.95%
Santa Clarita Valley Water Agency	2.28%	2.60%
Coachella Valley Water District	3.32%	3.78%
Crestline-Lake Arrowhead Water Agency	0.14%	0.16%
Desert Water Agency	1.34%	1.52%
Mojave Water Agency	2.15%	2.45%
Palmdale Water District	0.51%	1.06%
San Bernardino Valley Municipal Water District	2.46%	2.80%
San Gabriel Valley Municipal Water District	0.69%	0.79%
San Gorgonio Pass Water Agency	0.41%	2.00%
Metropolitan Water District of So. Calif.	45.81%	47.13%
Ventura County Watershed Protection District	0.48%	0.55%

Schedule and Status Update

DCP 2025 - 2028 Milestones and Funding Need



2021-24 Approved Funds

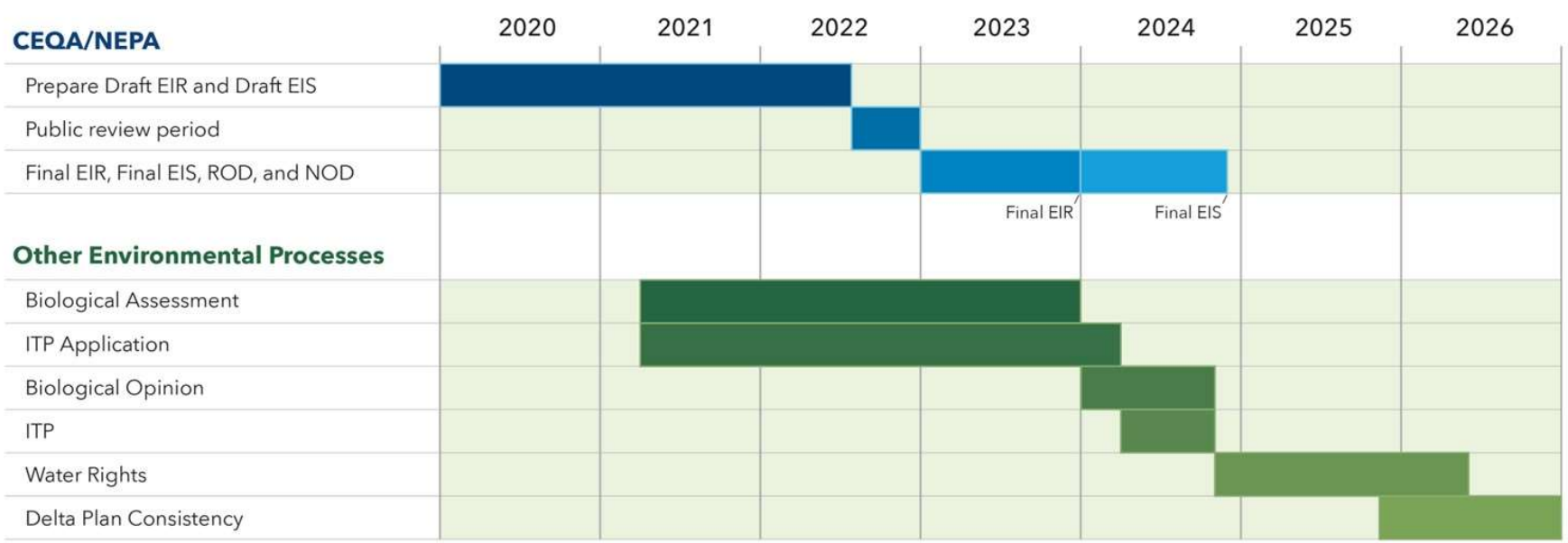
2026-27 Pre-Construction Funding

$300 Million

2028 Pre-Construction Funding

$265 Million (Draft)

Planning Schedule



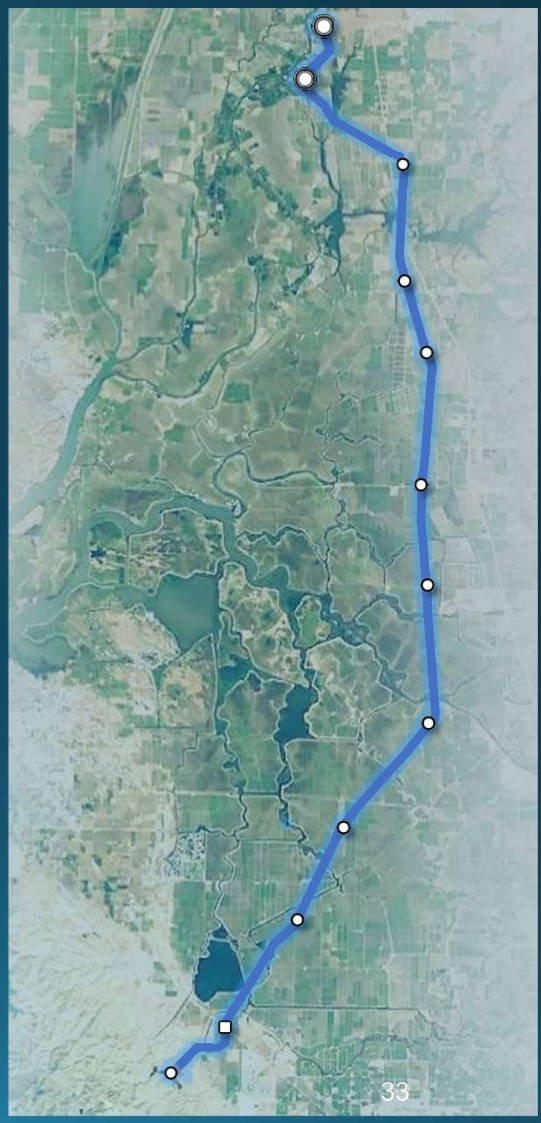
Planning, Permitting and Design: Moving Forward

DWR / DCA / PWA partnership has successfully navigated changing and unanticipated circumstances, putting the project in the best position possible.

- CEQA certified; NEPA on track for completion in 2024
- Geotech and power development on schedule
- Updated cost estimate (including optimization) and benefit/cost analysis
- Careful spending, under budget: approx. ½ of approved $290M planning budget
- Clear path for remaining permits, with support from the Newsom Administration
- Strong outreach and communications

Project Enhancements

State of the art fish screens for smaller intake footprint	Fewer tunnel launch shafts	Traffic focus on highways, interstates, exclusive haul roads	Route avoids the heart of Delta
Burying new power lines	Pumping plant on higher ground discharges directly into SWP Independent of south Delta intake	Avoids new forebays and barge landings	Dramatically reduces impacts on waters and wetlands



Community Benefits Program

Delta Community Fund

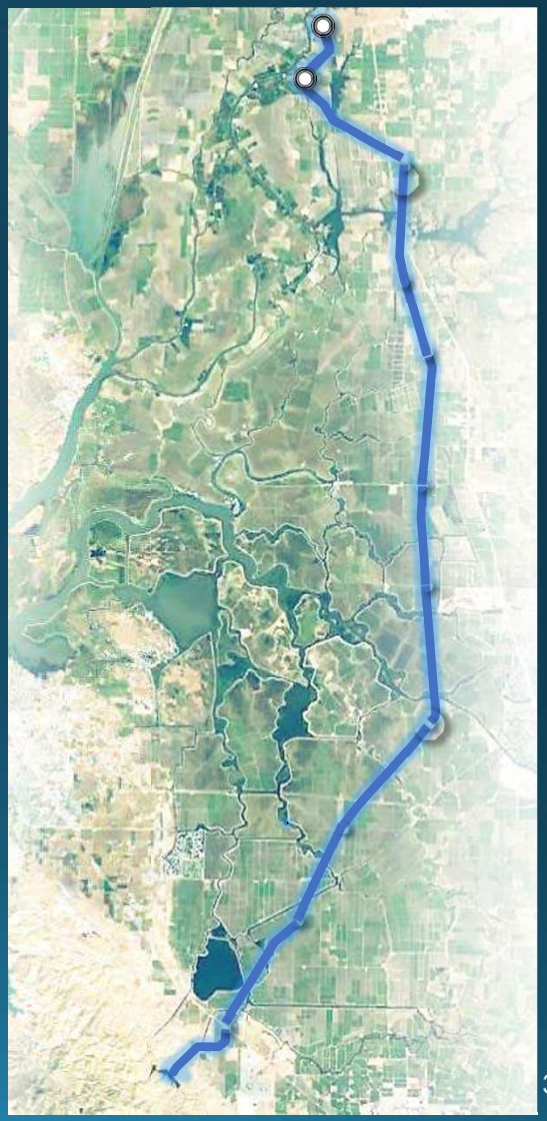
Proposed overarching fund to support community-prioritized projects in the Delta

Project Implementation Commitments

- Hiring targets, jobs training and education
- Local business utilization
- New infrastructure and facilities

DWR and DCA
Pre-Construction Funding Focus

- Community Engagement and Outreach
- Program Management Support
- Property and Easements
- Permitting
  - Change in point of diversion for the SWP water rights
  - Delta Stewardship Council Consistency Determination
  - Other permits such as 404, 401 etc.
- Mitigation
- Engineering
- Geotechnical Field Investigations
- Other Field Surveys



Palmdale Water District's Share of 2026-27 Pre-construction Cost

- Total 2026-2027 Pre-construction Cost = $300 million
- Palmdale Water District DCP Share = 1.06%
- Palmdale Water District Share of 2026-2027 Pre-construction Cost
  - 1.06%*$300 million = $3,180,000
- Funding will come from the SWP tax assessment and not from water rate revenues.

Staff Recommendation

Proposed Board Action

1. Authorizing the providing of additional funding to the Department of Water Resources for the Palmdale Water District's share of the pre-construction costs associated with the proposed Delta Conveyance Project, and

2. Considering the Department of Water Resources' previously Certified EIR, adopt CEQA Responsible Agency Findings, CEQA findings of fact and CEQA statement of overriding considerations.