Chain of Lakes Conveyance System (COLCS)

DSRSD-Zone 7 Liaison Committee Meeting

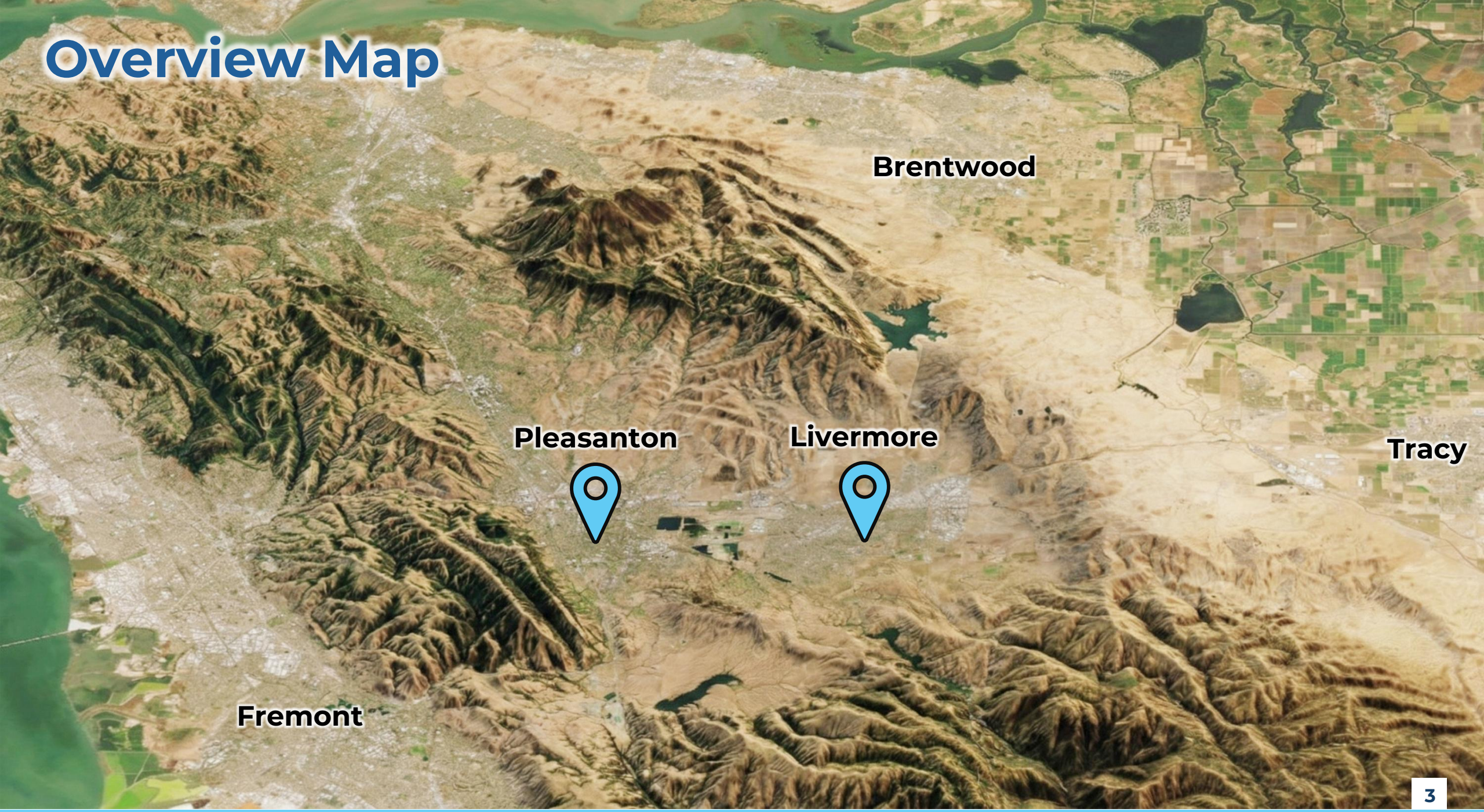
June 3, 2026

Project Description

What is the project?

ZONE 7 WATER AGENCY

Overview Map



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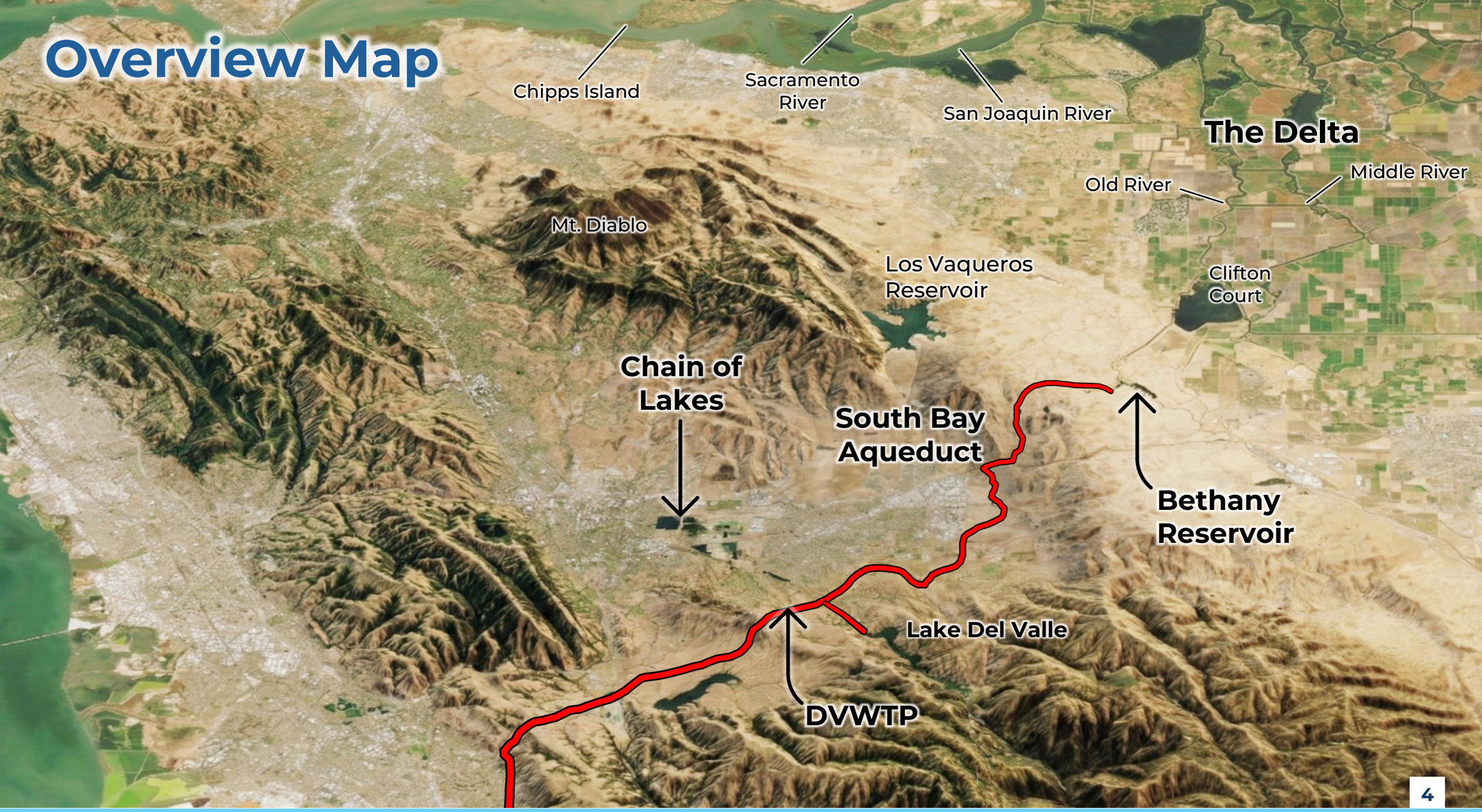

Overview Map

Chain of Lakes Conveyance System

- Utilize existing assets (Lake I, Cope Lake)
- 7-mile-long two-way pipeline connecting the SBA and Lake I and Cope Lake
- Gravity flow to fill the lakes
- Pump station to pump the water back to DVWTP for treatment and distribution
- PFAS removal and conventional treatment at DVWTP

Project Objectives

Why do we need this project?

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Achieving Water Supply Reliability Policy Goals

Goal 1

Normal Operations under Drought Conditions

- Chance of shortage should not be more than 1-in-10 in any year
- Severity of shortage should not exceed 15% of demand during droughts

Goal 2

Extended Unplanned Outages of a Week or More

- Maintain capacity to meet at least 80% of maximum month treated demand

GAP ANALYSIS OF ZONE 7'S WATER SUPPLY PORTFOLIO

Water Supply Sources	Upsides	Downsides	Vulnerabilities
State Water Project	High Table A Allotment	Declining Delivery Capability	Emergencies, SWP outages

** Potential projects ** Limited future availability*

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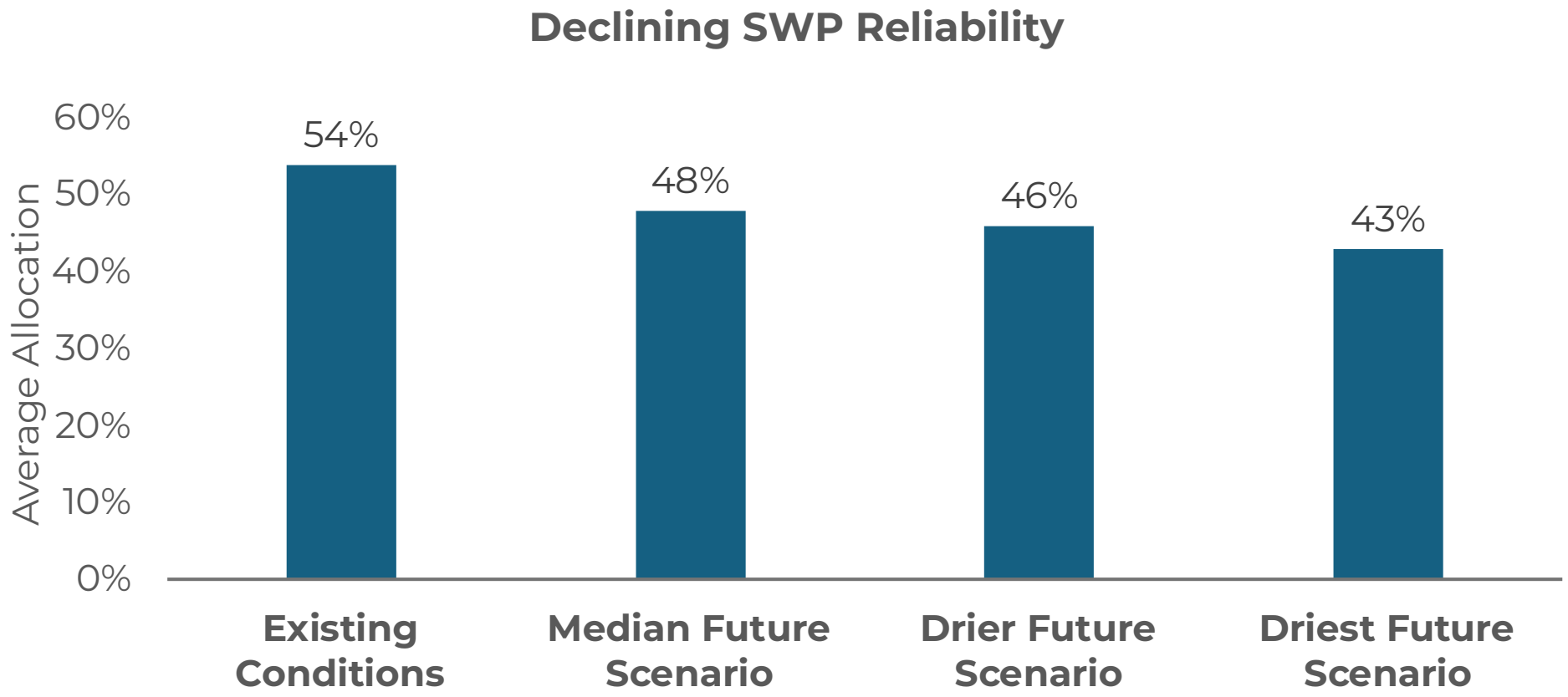

Source: DWR 2025 DRAFT Delivery Capability Report. Median, Drier, and Driest correspond to the 50%, 75%, and 95% Level of Concern scenarios published by DWR.

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Water Supply Sources	Upsides	Downsides	Vulnerabilities
State Water Project	High Table A Allotment	Declining Delivery Capability	Emergencies, SWP outages
Kern Groundwater Banks	Significant Storage Capacity	Limitations on Recovery Capacity	Emergencies, SWP outages, Conveyance Limitations
Sites*	New Non-SWP Water Supply	Depends on Delta for Conveyance	Emergencies, SWP outages, Conveyance Limitations
Delta Conveyance Project*	Restore SWP Delivery Capability	Project Completion Date	Hydrology

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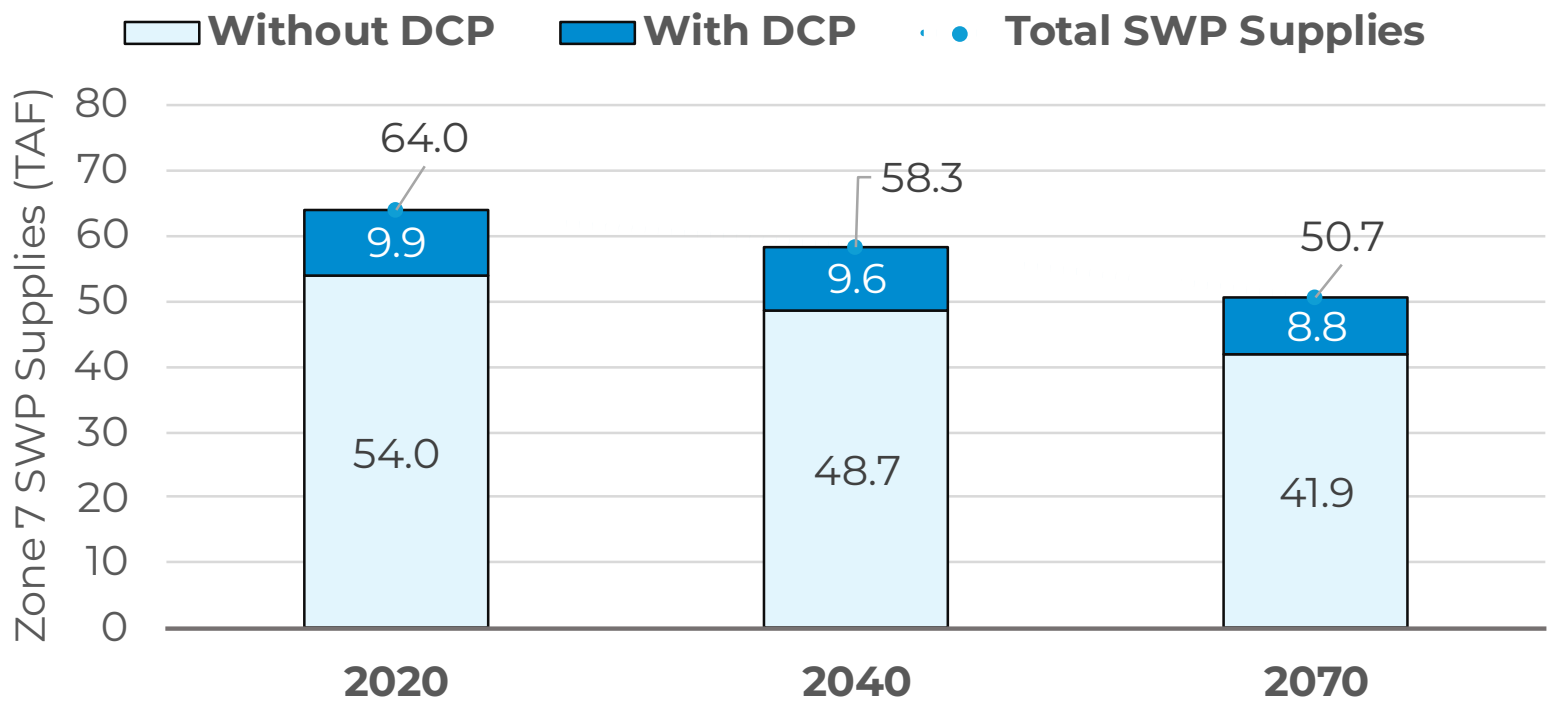

Source: DWR's modeling of DCP supply recovery, October 2024. Includes Table A and A21 recovery.

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GAP ANALYSIS OF ZONE 7'S WATER SUPPLY PORTFOLIO

Water Supply Sources	Upsides	Downsides	Vulnerabilities
State Water Project	High Table A Allotment	Declining Delivery Capability	Emergencies, SWP outages
Kern Groundwater Banks	Significant Storage Capacity	Unreliable Recovery Capacity	Emergencies, SWP outages, Conveyance Limitations
Sites*	New Non-SWP Water Supply	Depends on Delta for Conveyance	Emergencies, SWP outages, Conveyance Limitations
Delta Conveyance Project*	Restore SWP Delivery Capability	Project Completion Date	Hydrology
Potable Reuse*	Not dependent on hydrology	Infrastructure/capital intensive	Public sentiment
Water Transfers**	No Capital Costs	Uncertain Availability	Emergencies, SWP outages
Groundwater basin	Local Control, Storage	Facility Production Limitations	Groundwater Sustainability
Arroyo Del Valle Water Right via Lake Del Valle	Local Control, Non-SWP Water Right	Limited Supply and Storage	Hydrology
Water Conservation (demand reduction)	Local Control	Limited Results	Depends on Enforcement

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Water Supply Reliability Blueprint
Strategy to minimize supply vulnerabilities

- To maximize local water storage for emergencies and supply interruptions
- To develop local storage reservoirs to capture, store, and conserve the available water to withstand climate change, including extreme swings between historic droughts and record storms
- To enhance operational flexibility, including sources
- To increase total storage capacity gradually
- To create synergy with other water supply sources to maximize benefits

COLCS Project Objectives

Local Water Storage

- Maximize local supply
- Reduce Delta dependence, increase outage resiliency
- Reduce conveyance limitations
- Increase redundancy
- Reduce external losses and costs (San Luis, groundwater banks)

Emergency Water Supply

- Essential local emergency supply
- 36,000 AF storage in I/Cope (about 1 year of supply)
- Pump up to 22,00 AF in a single year
- Withstand prolonged drought

Increased Yield as COL Expands

- Arroyo del Valle water right perfection
- Take more Article 21
- Coordinated operation of COLCS and Sites
- Coordinated operation of groundwater basin
- DCP benefits increase by capture more interruptible supply

Transfer and Exchange Opportunities

- Engage regional partners to make effective use of COLCS capacity through transfer, exchange, and storage programs

Completed Work

What has been done to date?

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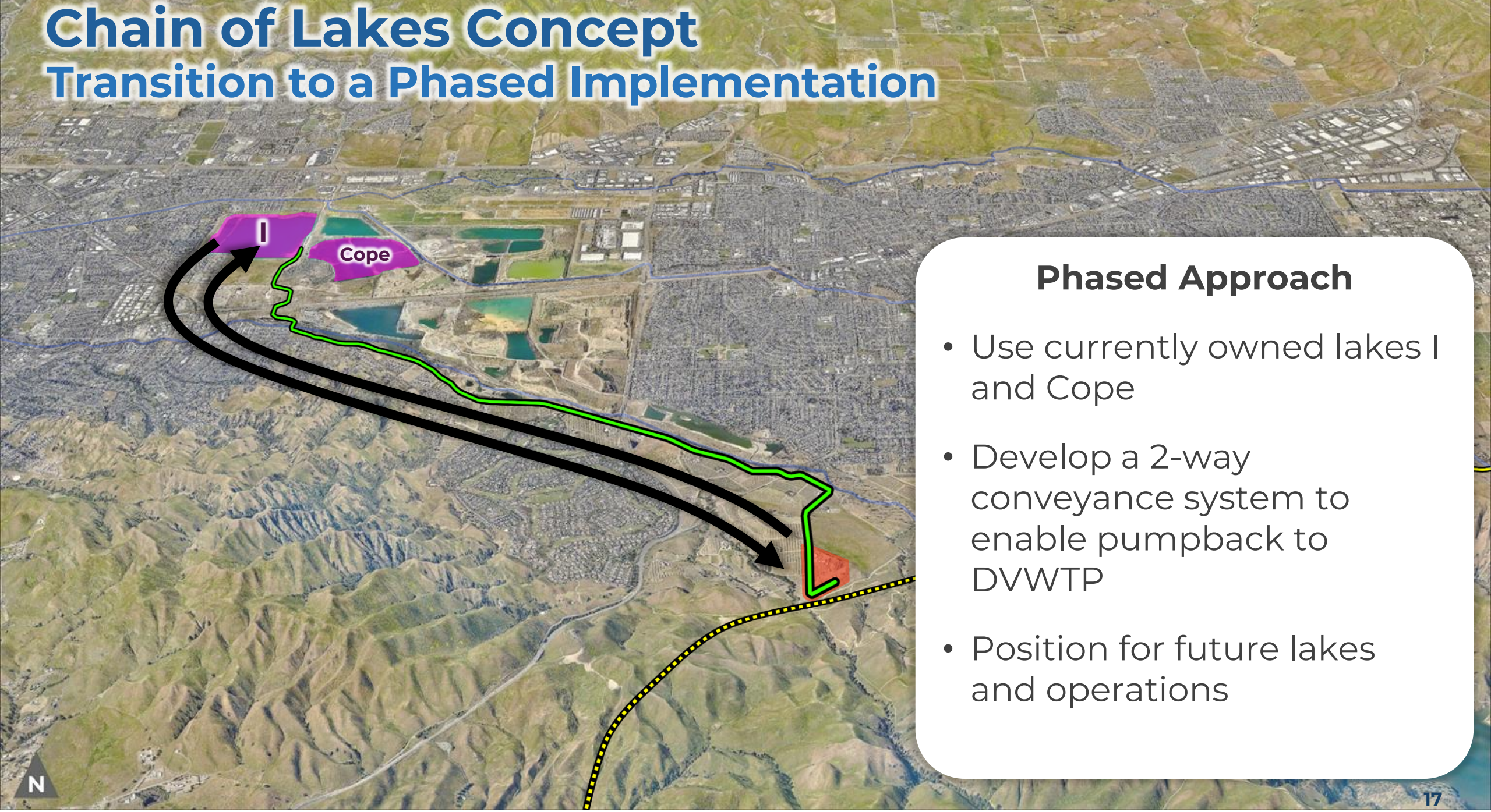
Chain of Lakes Concept
Transition to a Phased Implementation

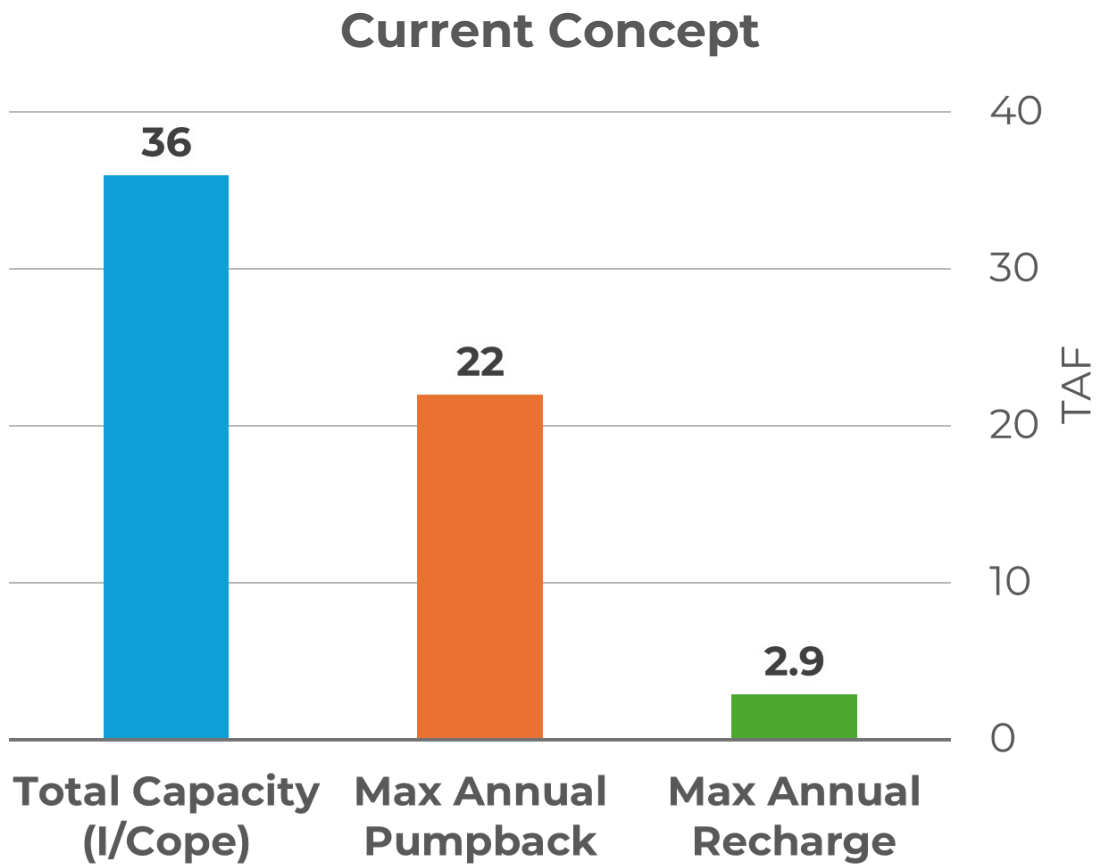


Phased Approach

- Use currently owned lakes I and Cope
- Develop a 2-way conveyance system to enable pumpback to DVWTP
- Position for future lakes and operations

Feasibility Study and Management Workshops (Nov 2023 – Mar 2025)

- Water Availability Analysis
- Evaluated 1-way vs 2-way conveyance system
- Evaluated surface storage and recharge potential
- Water Quality Blend Analysis
- Pipe Sizing and Capacity Analysis
- Prepared Initial Engineering Cost Estimates



Project Design

What would it take to develop this project?

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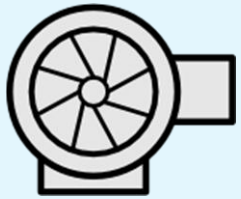
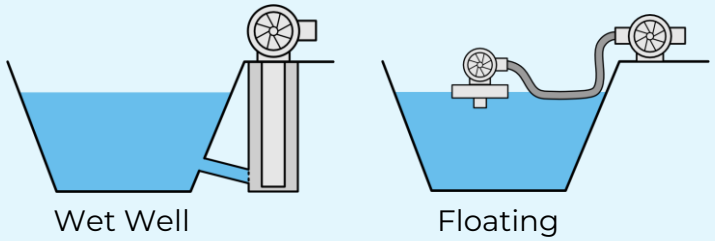
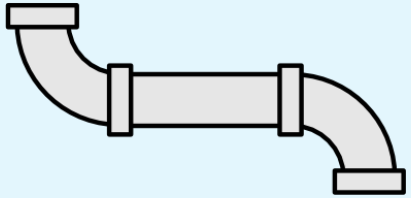
Project Features



Inlet/Outlet and Pump Station at Lake I/Cope

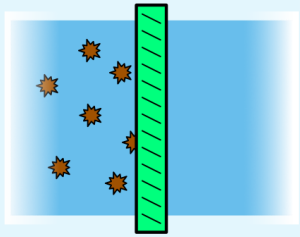
- 20 MGD pump station
- Future phase refine pump station design





2-way Pipeline from Lake I/Cope to DVWTP

- 42” diameter; 7 miles
- Gravity flow to COL; pump back to DVWTP
- Future study on agency coordination, permitting, property and right-of-way



PFAS Treatment at DVWTP

- DVWTP is preferred for ease of operation and maintenance
- Preferred Treatment: Granular Activated Carbon Gravity Contactor

Estimated Cost and Schedule

Planning
$8M

Year 1-2
Duration ~2 years

Design
$10M

Year 3-5
Duration ~3 years

Construction
$184M

Year 6-8
Duration ~3 years

Total
$240M
(with contingency and risk reserve)

Benefit Cost Analysis

Do the benefits outweigh the costs?

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Benefit Cost Analysis

Quantitative Evaluation

Is this investment economically justified?

Benefits	Costs
• Increased local supply amount • Increased local water right yield • Increased yield from Sites and DCP • Reduce need for water purchase	• Capital Cost • O&M Cost

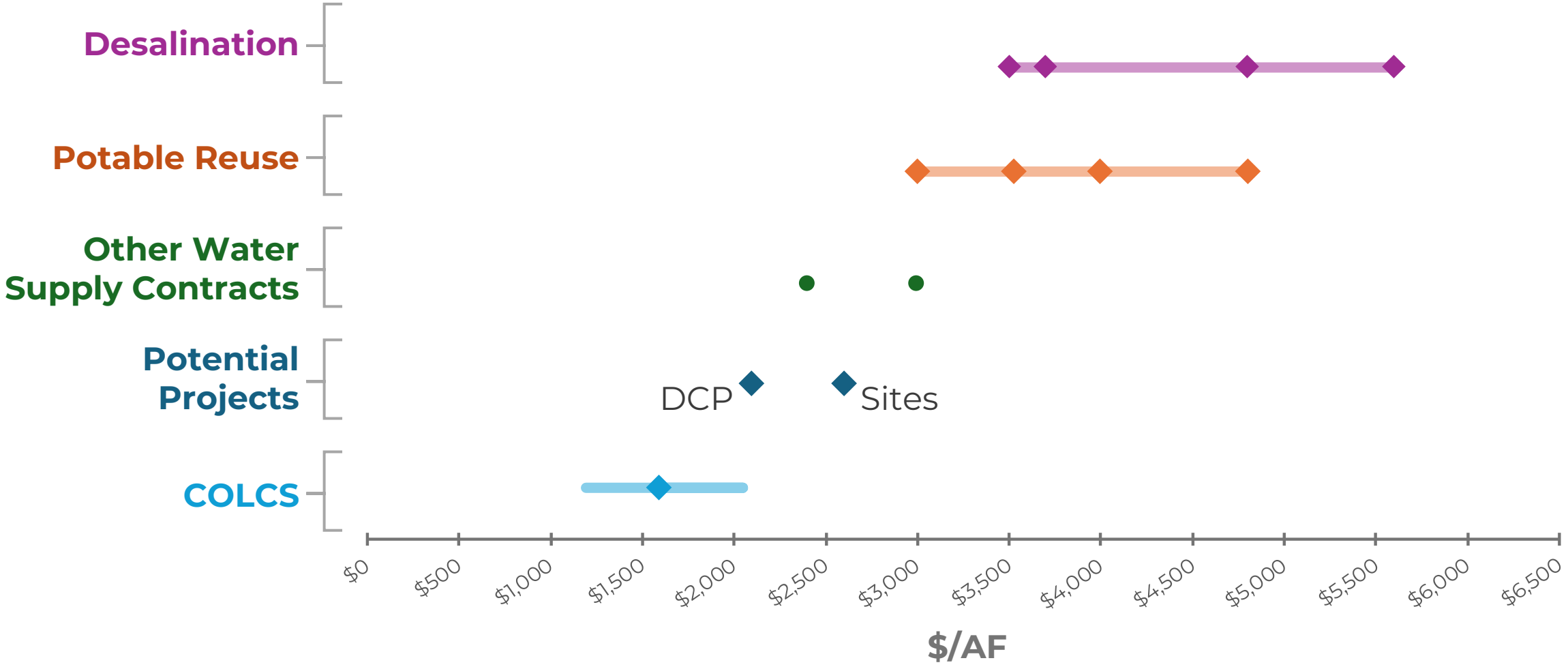
Qualitative Evaluation

Are the benefits worth the costs?

Benefits	Costs
• Emergency Water Supply • Additional local source of supply • Local control and management • Increased Transfer and Exchange Opportunities	• Mitigations for construction-related impacts • Community impacts during construction • Financial commitment

Quantitative Benefit Cost Analysis

Unit Cost Comparison



Note: Economic analysis uses 3.25% discount rate (USACE 2026 rate), and 100-year period of analysis. Estimates may not match other published data.
Sources: Desalination (Mesa Water, SDCWA, Marin Water, Santa Barbara); Potable Reuse (PureWater SoCal, Valley Water, PureWater San Diego, PureWater Soquel); Other Contracts (SFPUC, ACWD, Montecito Water)

Quantitative Benefit Cost Analysis
Summary

Average Yield (AFY)	Unit Cost ($/AF)	Economically Justified? *
7,000	**$2,100**	**Yes** *Benefits equal costs*
9,000	**$1,600**	**Yes** *Benefits exceed costs*
12,000	**$1,200**	**Yes** *Benefits exceed costs*

* Conceptual level monetization of benefits to compare net present value of benefits to net present value of costs at a 3.25% discount rate over a 100-year period of analysis.

Qualitative Benefits

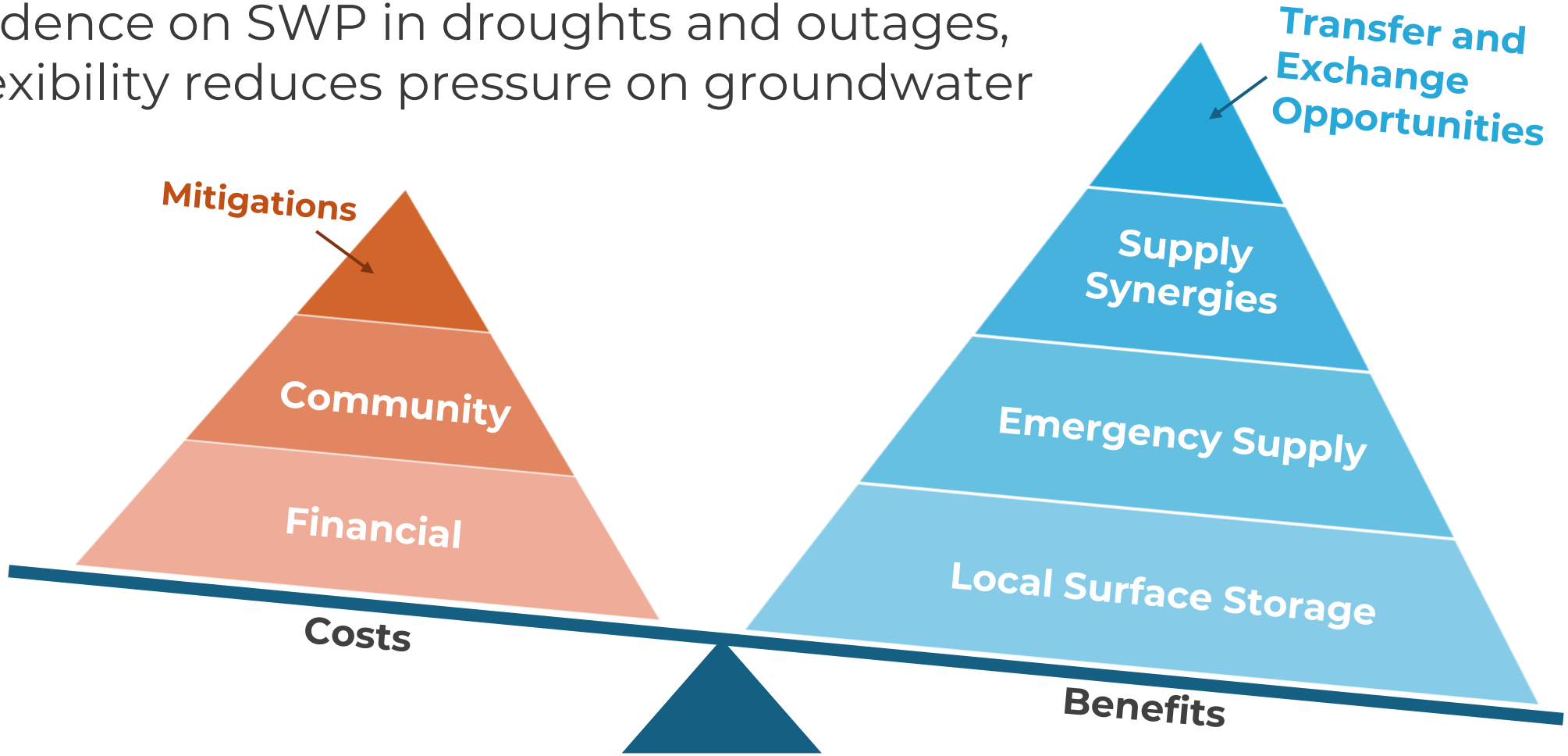
Objective	Goal 1 Normal Operations under Drought Conditions	Goal 2 Extended Unplanned Outages of a Week or More
#1 Local (Surface) Water Storage	Reduces dependence on SWP	Opportunity for non-SWP surface water storage
#2 Emergency Water Supply	-	Adds redundancy; less reliance on groundwater
#3 Increased Yield as COL Expands	Maximizes yield of other supply investments	-
#4 Transfer and Exchange Opportunities	Cost recovery, effective management, additional supply	-

Qualitative Cost

Category	Cost/Impact	Solution
Environment	Construction-related Impacts	Can be Mitigated
Social and Community	Community Impacts During Construction	Offset by Long-term Community Benefit
Financial	Financial Commitment	Offset by Water Supply Reliability Benefit

Qualitative Benefit Cost Analysis
Summary of the Balance of Benefits and Costs

- Locally controlled surface water storage reduces dependence on SWP in droughts and outages, and flexibility reduces pressure on groundwater



Summary

A Generational Investment

- Both quantitative and qualitative benefits outweigh costs
- Ensuring water supply reliability for future generations is worth the cost
- Benefits will expand over time as lakes are added
- Next Steps
  - Near-term activities: environmental planning, permitting, real estate coordination, and preliminary engineering
  - Water rate analysis process in Fall 2026 will include this project
  - Final decision to proceed with the project is dependent upon findings from additional study and future Board approvals

Questions?

Check out our Chain of Lakes webpage and promo video

https://www.zone7waterca.gov/post/chain-lakes-conveyance-system-project