



Subcommittee on Imported Water

Vulnerabilities and Risks to the Bay-Delta Impacting Supply Reliability

Item 3b

March 24, 2026

Presenter: Maureen Martin, Ph.D.

Item 3b

Update to Subcommittee on Imported Water

Subject

Vulnerabilities and Risks to the Bay-Delta Impacting Supply Reliability

Purpose

Review key risks of levee failure, climate change, increasing regulation, and aqueduct subsidence

Next Steps

Future board updates on potential projects and adaptations

Agenda

- Bay-Delta Overview
- Vulnerabilities and Risks
- Key Agencies and Strategies
- Current Metropolitan Activities
- Next Steps



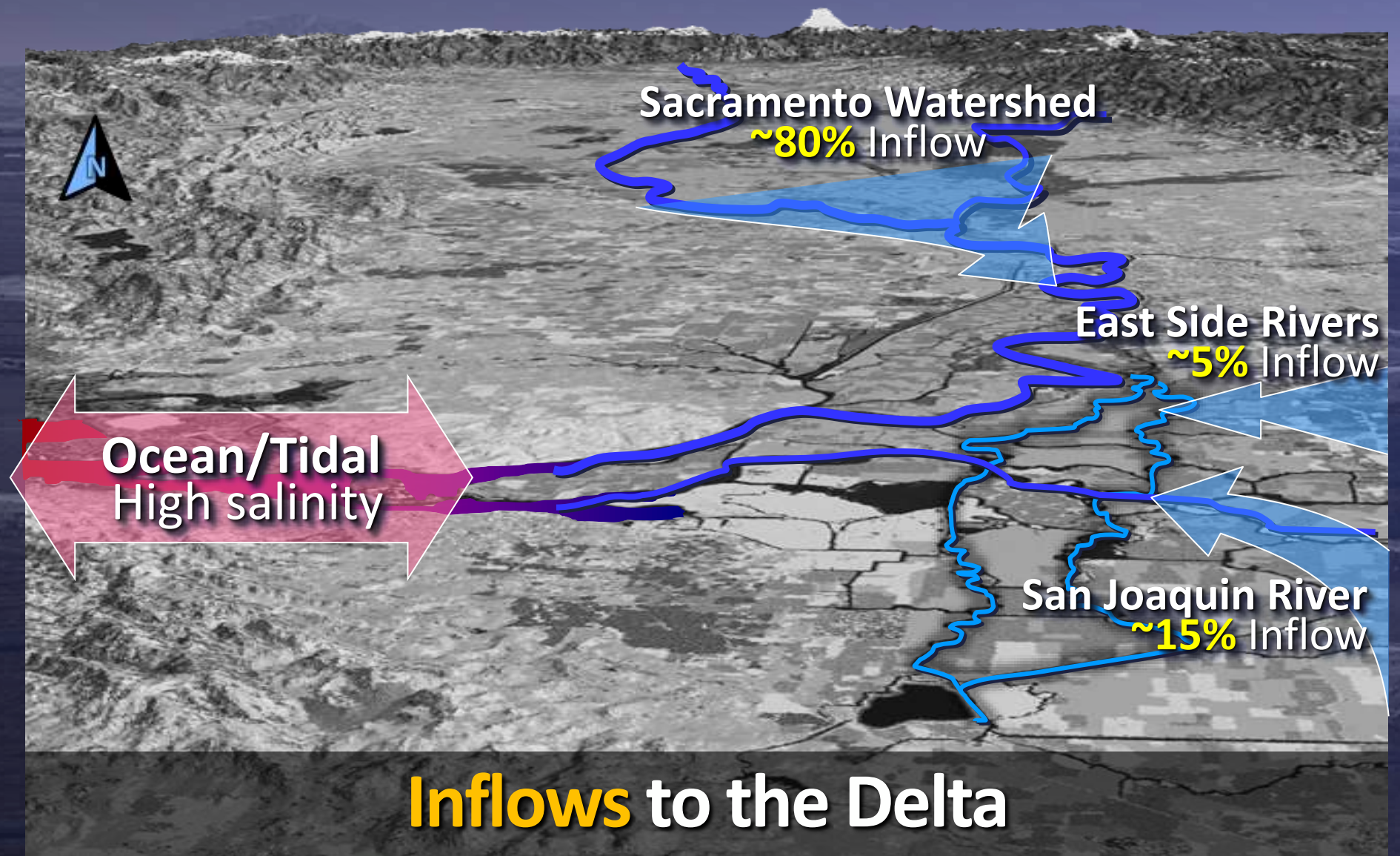
Photo Credit: CalMatters

Bay-Delta Overview

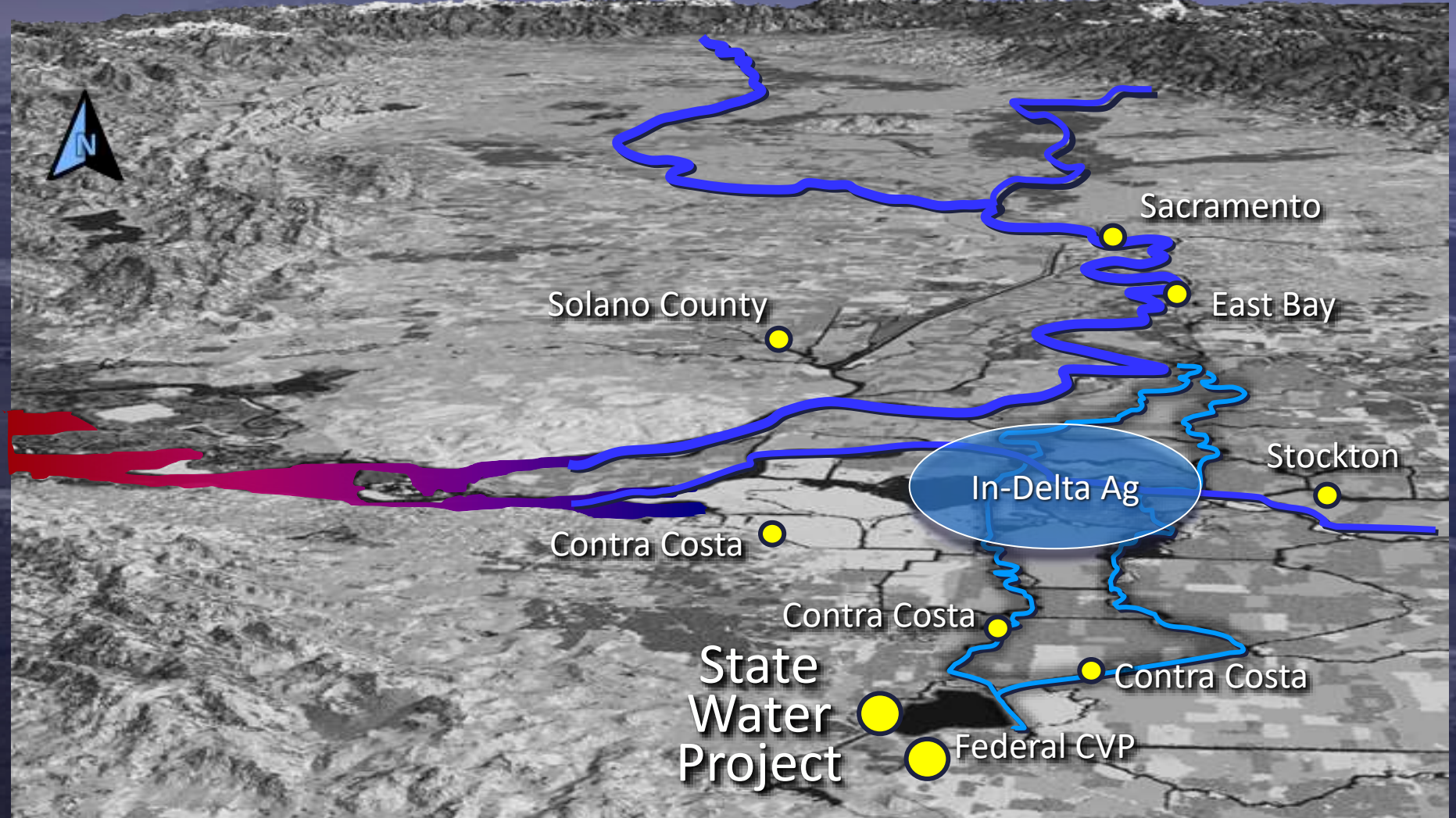
Metropolitan Water District's Sources of Supplies



THE DELTA Present Day



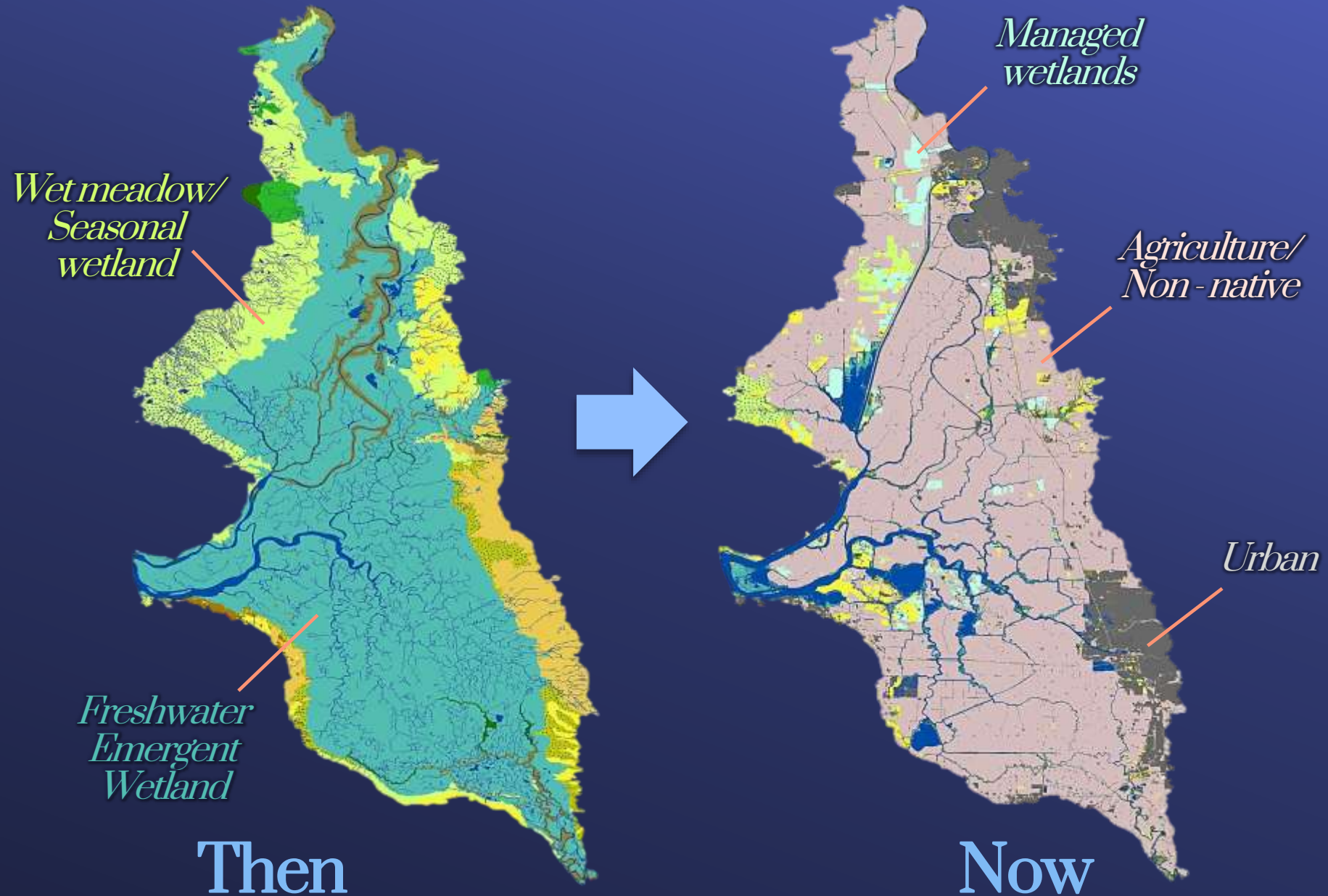
THE DELTA Present Day



Major **Diversions** from the Delta

Delta is a Highly-Altered Environment

Habitat



Then

Now

Source: San Francisco Estuary Institute
Aquatic Science Center:
https://www.sfei.org/sites/default/files/biblio_files/DeltaTransformed_SFEI_110414.pdf

Vulnerabilities & Risks

Bay-Delta Water Supply Reliability



Levee Failure



Climate Change



Increasing Regulation



Aqueduct Subsidence

Risk: Levee Failures

Threats Vulnerabilities

Earthquakes

Peat Soil

Island Subsidence

Sea Level Rise

Overtopping

Invasive Species



Levee Height

Levee Strength

Monitoring

Conveyance

Saltwater Intrusion



Levee Failures

Key Agencies



Levee Maintaining Agencies and Reclamation Districts comprised of landowners oversee and maintain Delta levees



The Delta Levees Special Flood Control Projects and Delta Levees Subvention Programs provide financial assistance



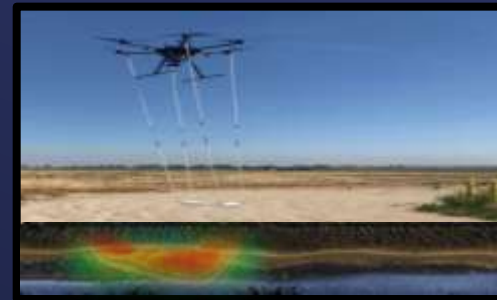
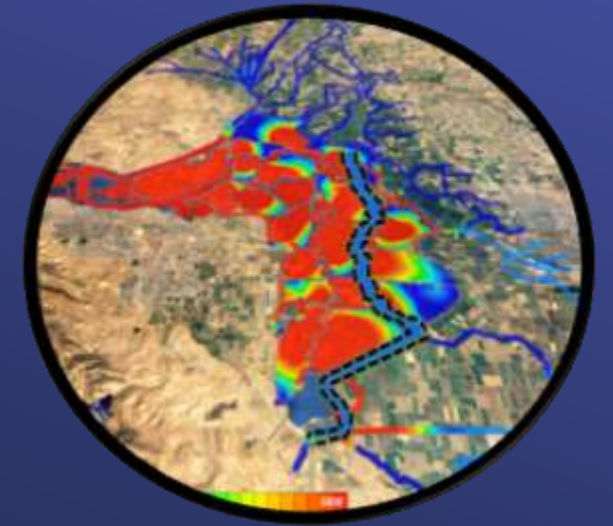
Developed the Delta Levees Investment Strategy, a risk-based prioritization for Delta levee investments, repairs, and improvements



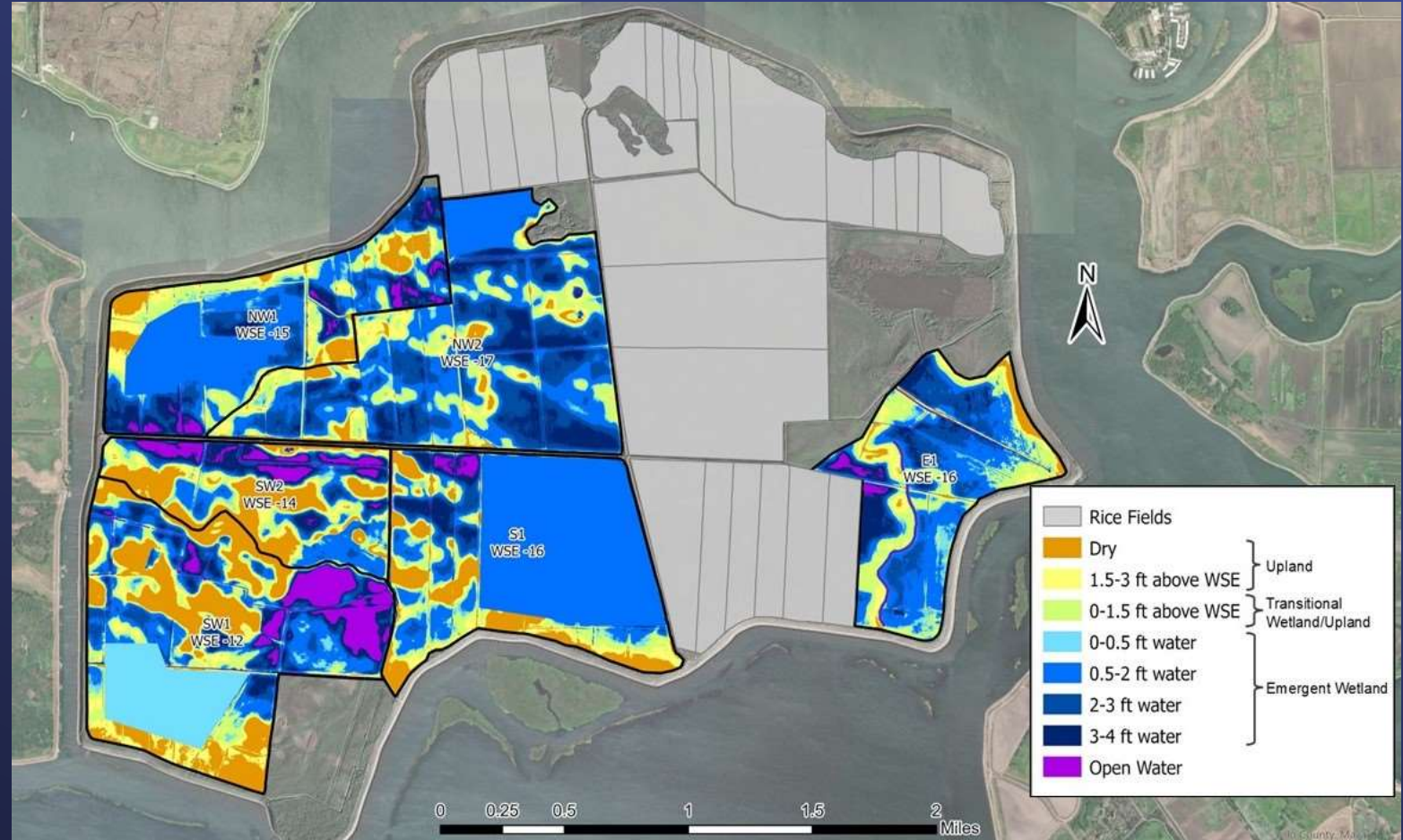
Maintains project levees throughout the Delta and performs inspections and risk assessments as part of its Levee Safety Program

Metropolitan Actions Today: Emergency Preparedness

- Levee Improvements and Repairs
- New Modernized Levee Design
- Void Detection Technology
- Localized Material Stockpiles
- Emergency Freshwater Pathway

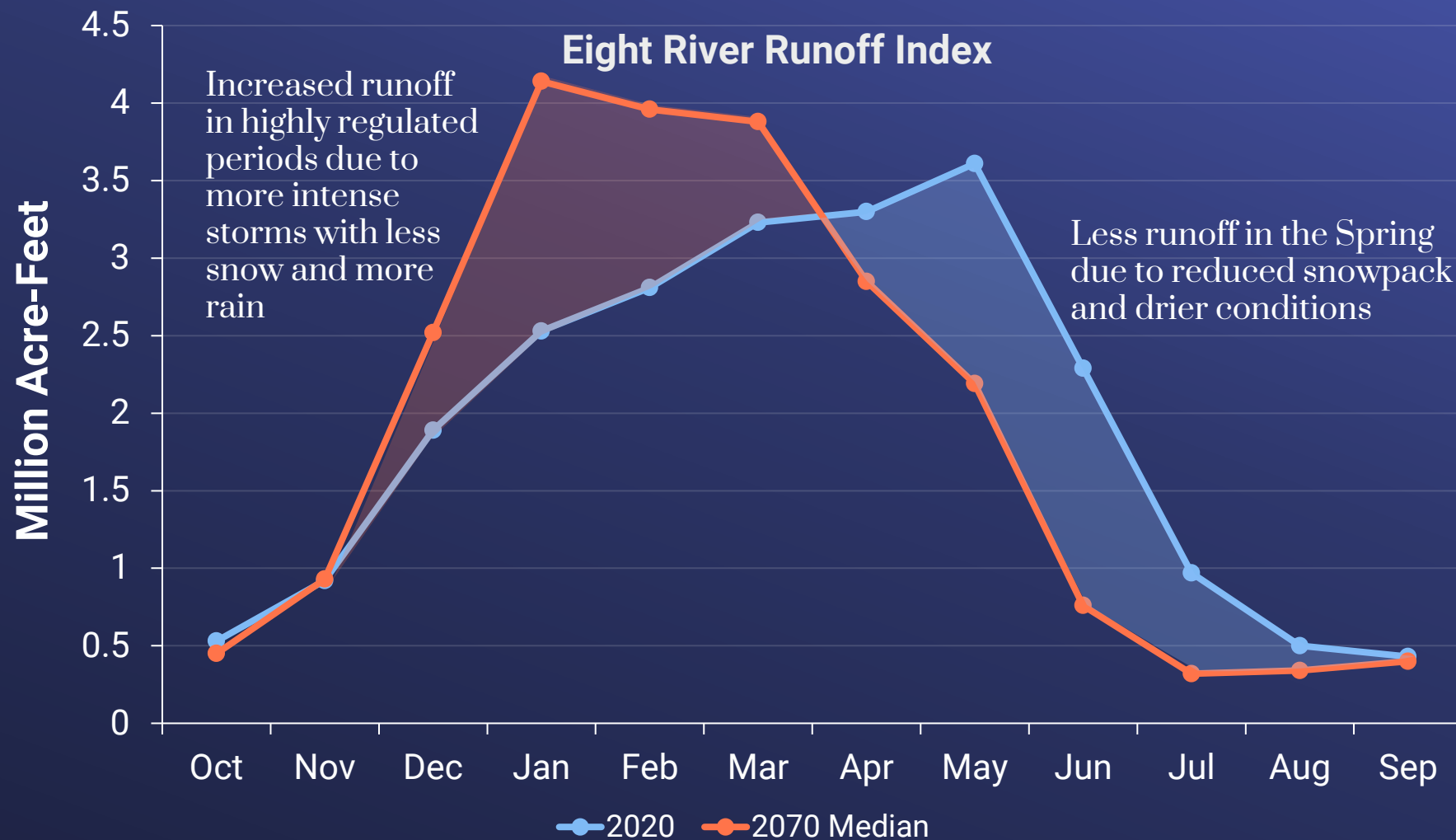


Metropolitan Actions Today: Subsidence Reversing Projects, Rice Leases and Wetland Creation



Risk: Climate Change

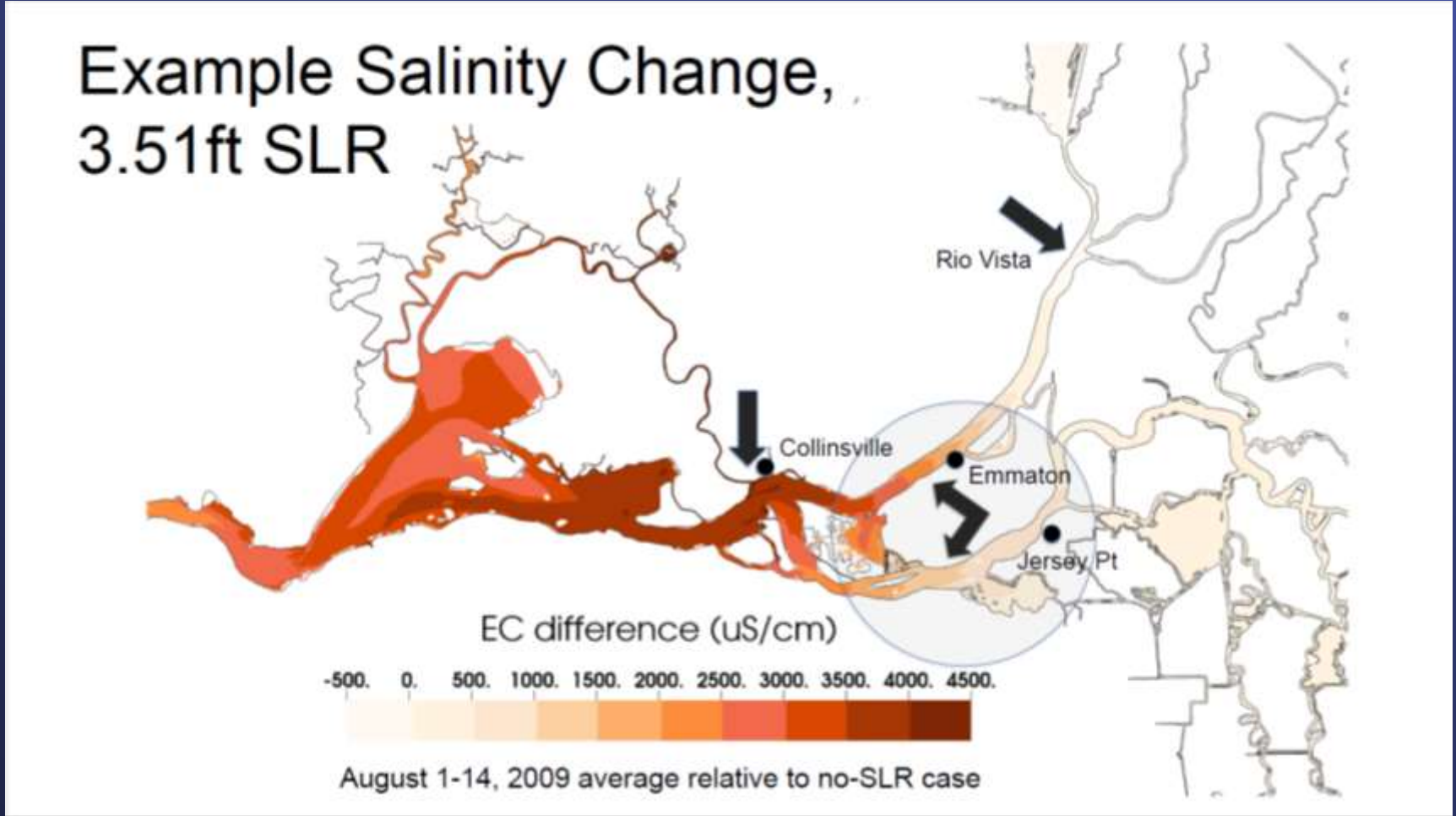
Shift in Historical Hydrology



Source: Delta Conveyance Project Final EIR Appendix 4A, Table 4A-1.

Risk: Climate Change

Sea Level Rise



Risk: Climate Change Increased Wildfires



Risk: Climate Change

Threats Vulnerabilities

Infrequent
Intense Storms

More Rain
Less Snow

Increased
Wildfires



Conveyance
Storage

Upper
Watershed

Reduced Water Supply



Key Agencies



Released its first ever Climate Adaptation Plan in 2025 for the State Water Project, which incorporates near and long-term actions to maintain reliability



Developed the Delta Adapts climate initiative and adaptation plan that outlines Delta specific strategies and actions

Metropolitan Actions Today: Upper Watershed Restoration



Wildfire Risk Reduction



Watershed Health
Restoration

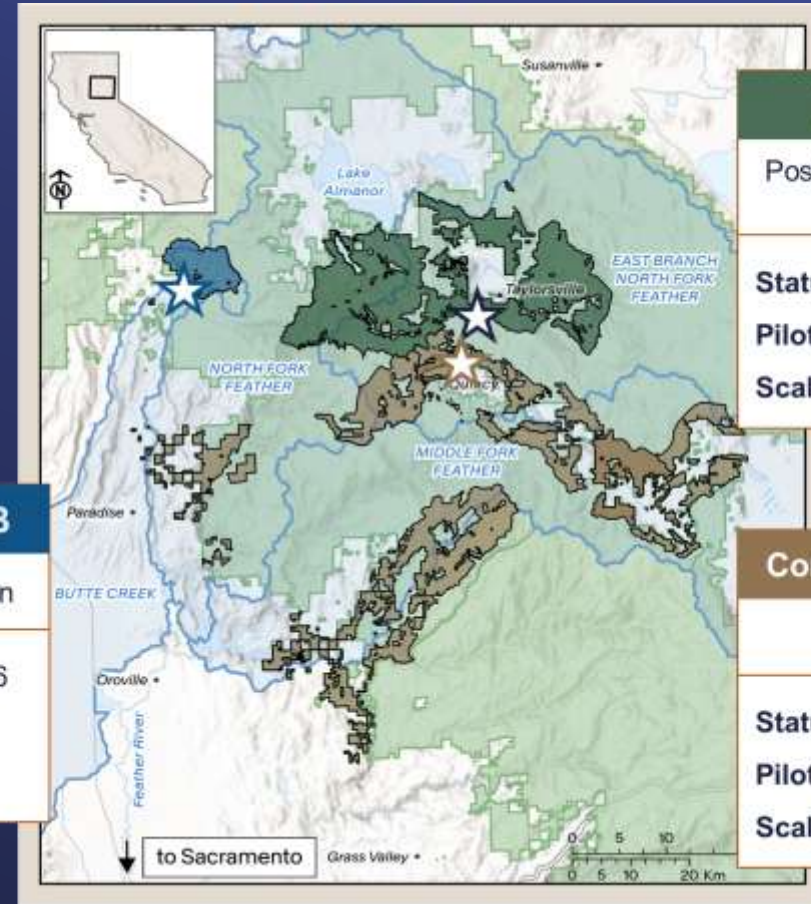
Upper Butte Creek I FRB

Aquatic species habitat protection

Status: anticipated launch in 2026

Pilot area: 1,000-1,500 acres

Scale potential: 20,000 acres



North Feather I FRB

Post-fire restoration and landscape resilience

Status: launched

Pilot area: 1,500 acres

Scale potential: 167,000 acres

Community Protection I FRB

Community protection

Status: launched

Pilot area: 5,000 acres

Scale potential: 225,000 acres

Metropolitan Actions Today: Evaluating Delta Conveyance Project

- Eastern Bethany alignment
- 6,000 cfs total capacity
- Cost estimate of \$20 Billion Dollars
- Increased operational flexibility
- Total average annual yield of 400,000 AF
- Metropolitan funding \$141 million dollars of planning costs through 2027

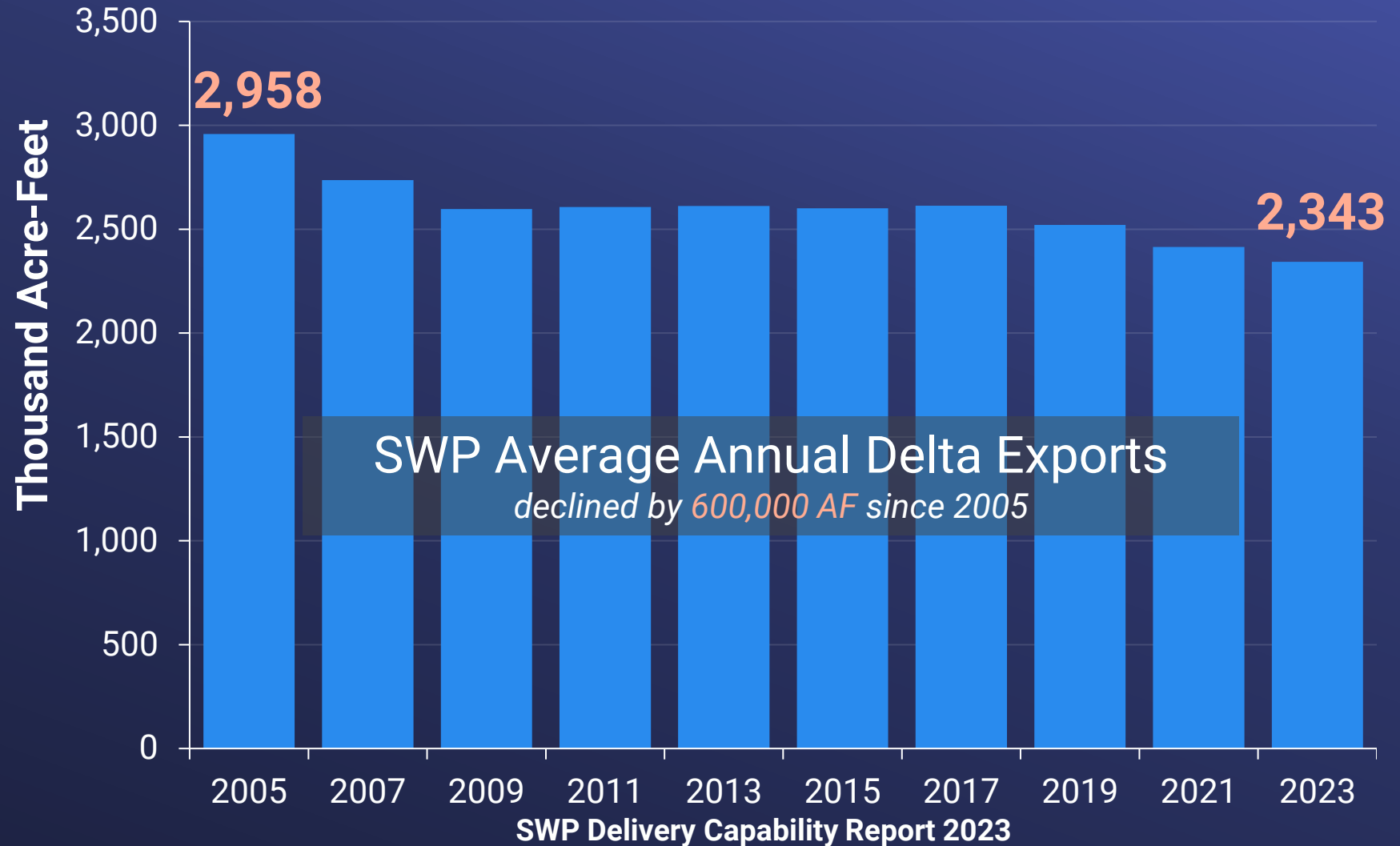


Metropolitan Actions Today: Evaluating **Sites Reservoir**

- 1.5 MAF off-stream reservoir, North of Delta
- MWD current planning share of 312 TAF of storage space
- Cost estimate of ~\$7 B
- Statewide participation
- Proposition 1 funded
- Dry Year Flex Supply
- Modeled deliveries of 56 TAF in dry and critical years



Risk: Increasing Regulation Decreased Export Flexibility



Risk: Increasing Regulation

Threats Vulnerabilities

Invasive
Species
Outdated
Science
Predation



Differences in
State and
Federal
Requirements

Reduced Export
Flexibility



Enforces the Bay-Delta Water Quality Control Plan (WQCP), which balances beneficial uses in the Bay-Delta. Currently in the process of updating the WQCP.



Enforces the incidental take permit which authorizes DWR to “take” state-listed endangered species as a result of State Water Project operations.



Enforces the biological opinions, which authorizes DWR to “take” federally-listed endangered species as a result of State Water Project operations.



Increasing Regulation

Key Agencies

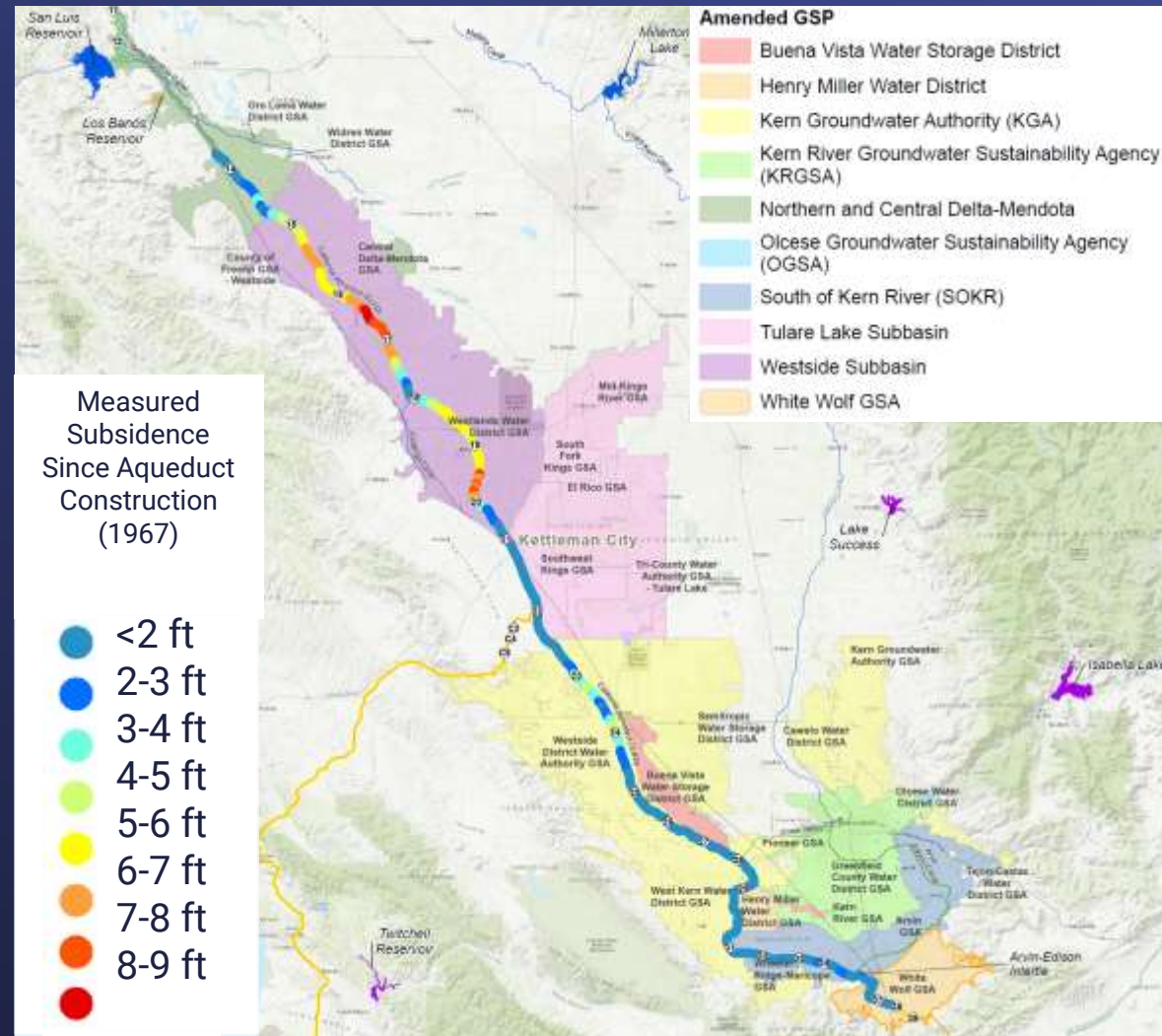
Metropolitan Actions Today: Bay-Delta **Science Program**

- Effectiveness of Water Management Actions
- Delta Stressors and Habitat Needs
- Webb Tract Habitat Restoration
- Delta Smelt Supplementation



Risk: California Aqueduct Subsidence

Reduced Delivery Capability



Reduction in SWP Table A Deliveries by 2043

6 to 84%

Risk: Aqueduct Subsidence

Threats Vulnerabilities

Continued
Overdraft



Central Valley
Groundwater
Levels

Reduced Delivery
Capability

Key Agencies



Aqueduct
Subsidence



Enforces the Sustainable Groundwater Management Act through fees, reporting requirements and other State interventions, including basin probation.



Central Valley Groundwater Sustainability Agencies develop and implement groundwater sustainability plans (GSPs) to mitigate overdraft.



Evaluates and assesses GSPs. Implements the CA Aqueduct Subsidence Program focused on restoring the aqueduct's original design capacity & long-term resiliency.

Metropolitan Actions Today: Building Partnerships through Collaboration



- State Water Contractors Subsidence Task Force and development of SWC Subsidence Principles
- Lobbying for subsidence appropriations from the GHG reduction fund
- Development of new groundwater storage programs to mitigate subsidence



Photo Credit: DWR

Next Steps

Bay-Delta Board Activities (tentative) **CY 2026**

	March 2026	April 2026	May 2026	June 2026	July 2026	August 2026	September 2026	October 2026	November 2026	December 2026
Delta Conveyance Project		Delta Conveyance Updates Oral Reports Monthly Report Attachment								
Sites Reservoir				Sites Project Overview & Integrated District Ops Oral Report & White Paper #1	Sites Project Finance Options, Rate Impacts, & B&O Agreement Oral Report & White Paper #2		Sites Project Outside Perspectives Panel	CAMP4W Assessment Oral Update & Written Report	Sites Project Funding & Authorization Oral Report & Info Brd Letter White Paper #3	Sites Project Funding & Authorization Oral Report & Action Brd Letter
Science and Watershed		Update on Upper Watershed Activities Oral Report	Delta Smelt Propagation & Research Update Oral Report							
Webb Tract Restoration Project		Ag Lease Award Action Letter	Webb Tract Oral Report & Info Letter	Webb Tract Oral Report & Action Letter						
Delta Islands	Vulnerabilities & Risks to the Bay-Delta Impacting State Water Project Supplies Oral Report		Delta Islands Update on Strategic Analysis & Management Plan BOD Workshop	Delta Water Diversion Metering Update Oral Report	Delta Levees Real-Time Monitoring and Reliability Enhancement Pilot Project Oral Report					

Imported Water Subcommittee

One Water and Adaptation Committee

Engineering Operations and Technology Committee

Finance, Affordability, Asset Management, and Efficiency Committee

Subcommittee on CAMP4W

Next Steps

Potential Board Items for Future Discussion

- Delta agency updates
- Regional water quality boards
- Suisun marsh restoration
- Sea level rise modeling in the Delta

