



Pacheco Reservoir Expansion Project

Valley Water Board Meeting

January 23, 2024

Needs Addressed by Pacheco Reservoir Expansion Project

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Improve
Resiliency and
Emergency
Water



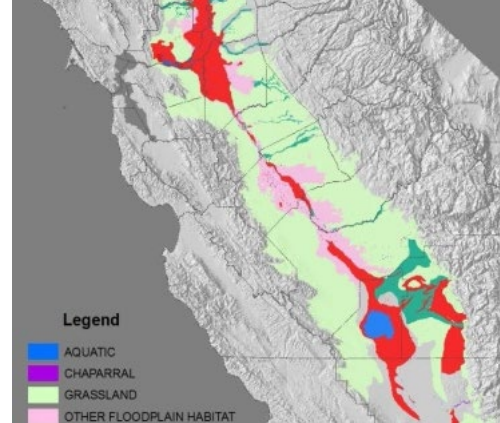
Restore Federally
Threatened
Steelhead Fish
Habitat



Eliminate
Water Quality
Issues from San
Luis Reservoir



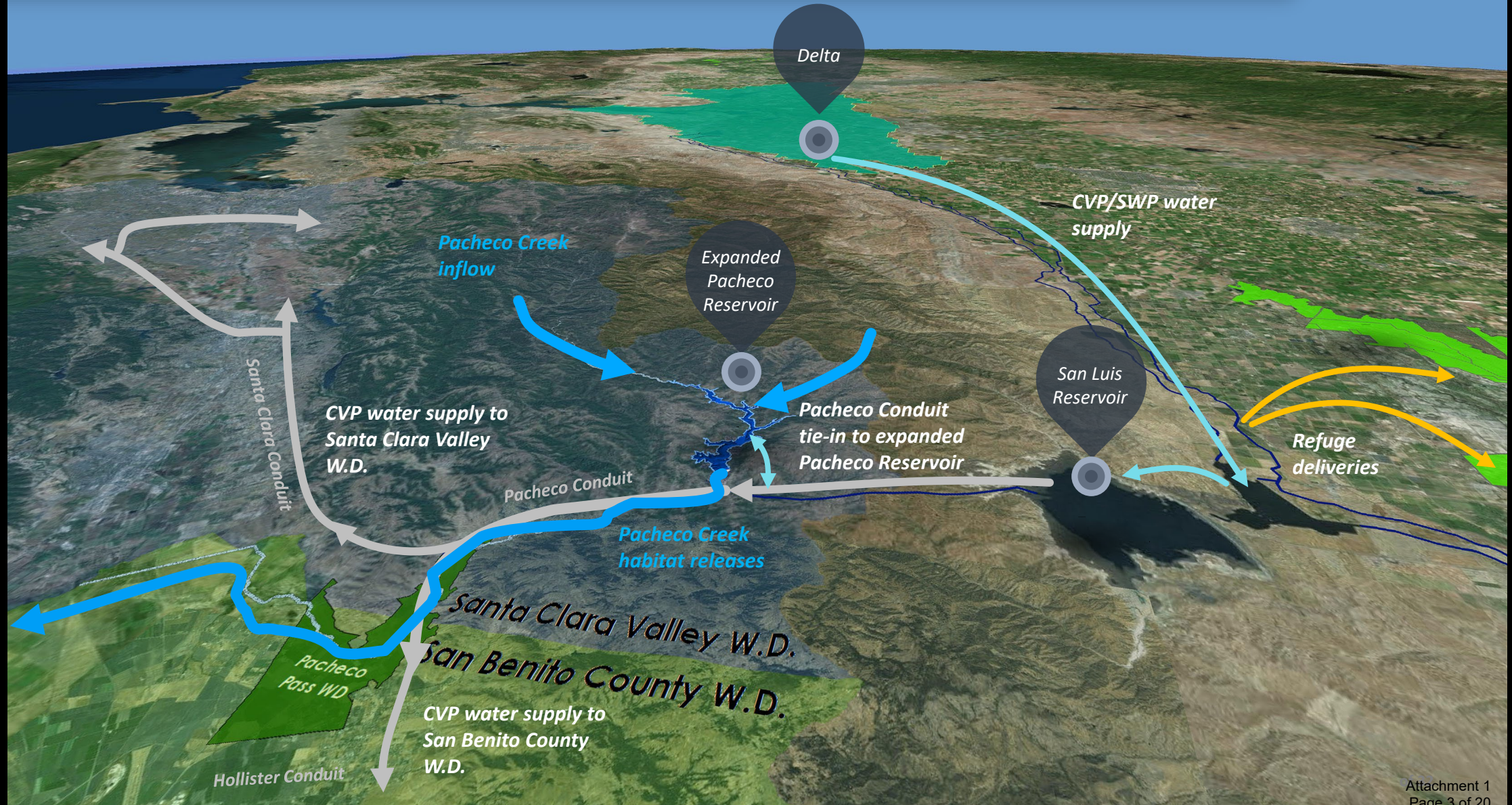
Improve
Delta Watershed
Wetlands



Reduction of
Downstream
Flooding

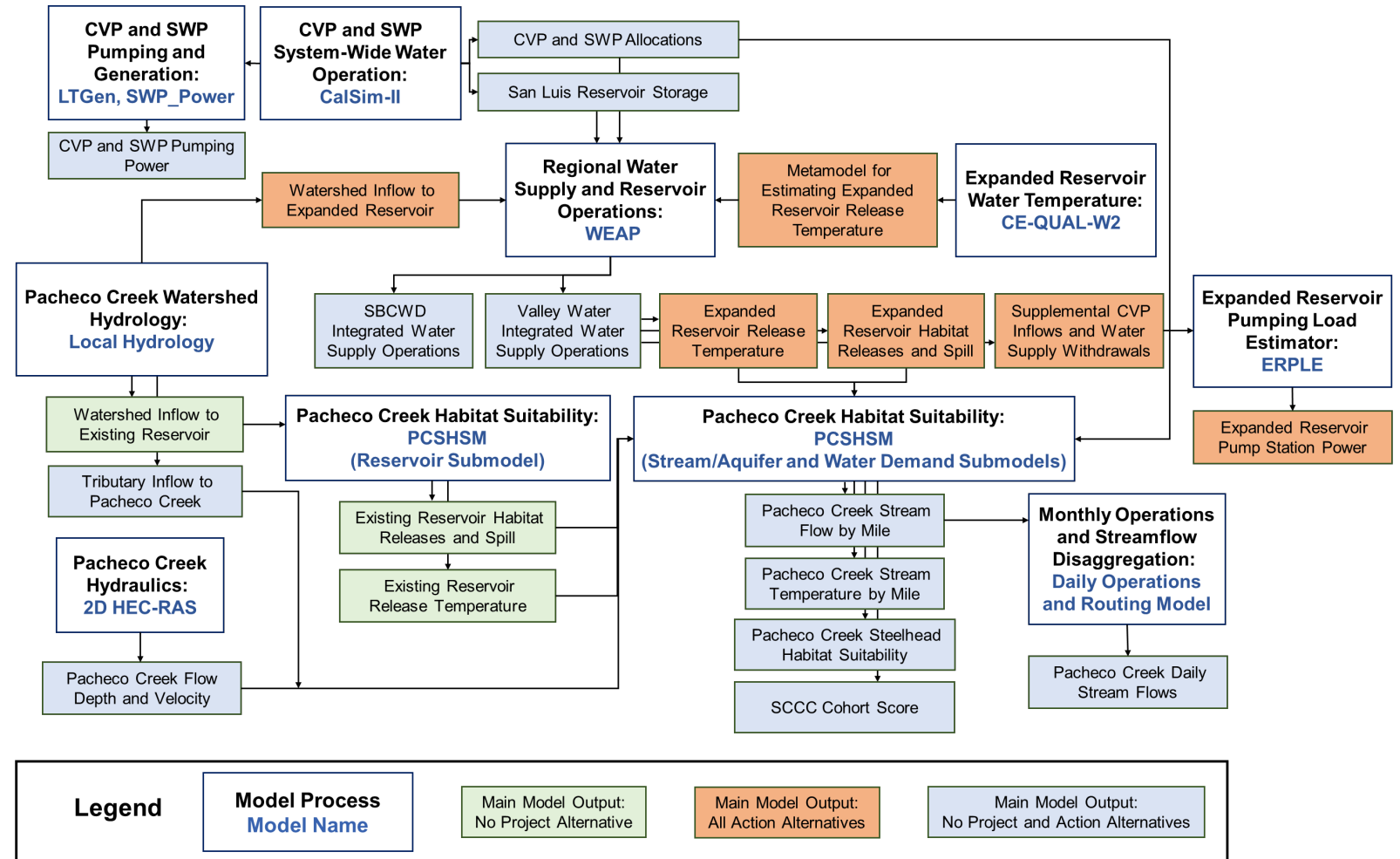


How the Project Will be Operated

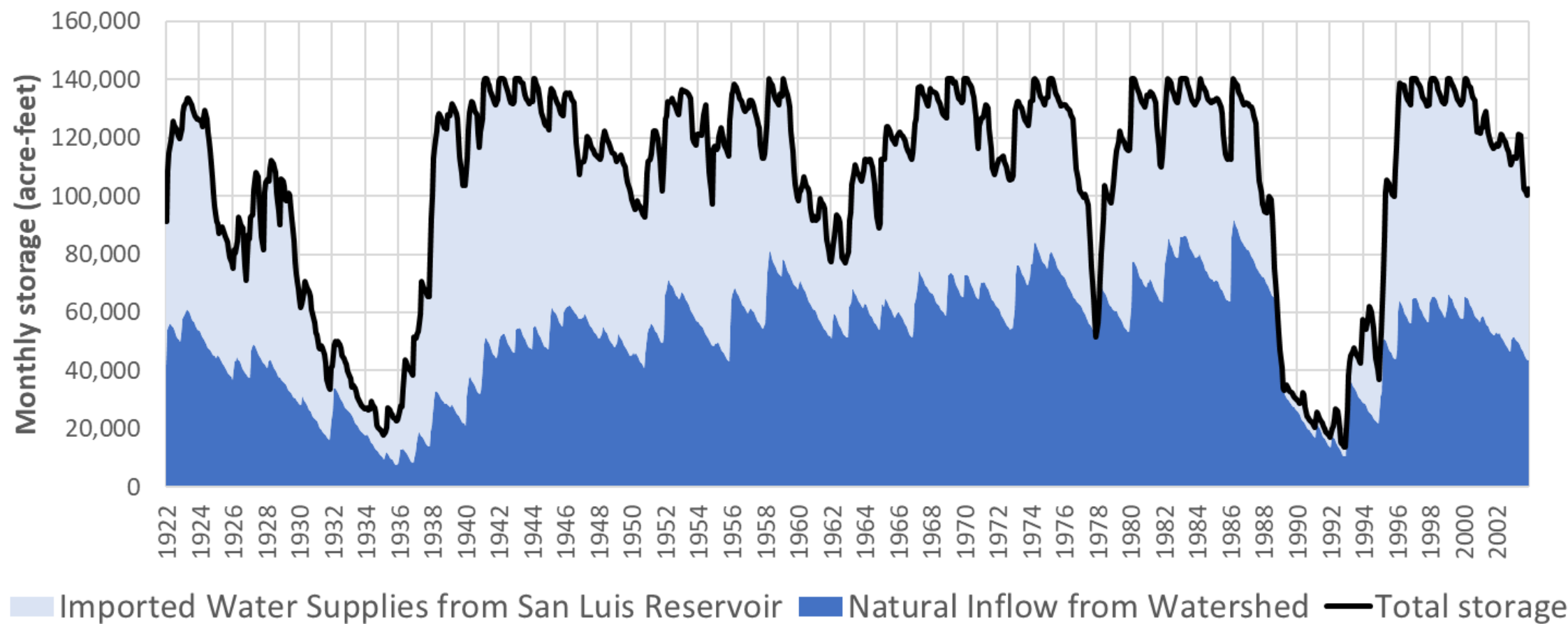


Numerical Modeling Framework for Water Operations

- Suite of eight numerical modeling tools used to evaluate the expanded reservoir operations
- Numerical modeling tools reflect best available tools and science for system
- Numerical modeling framework refined using feedback from Federal and State resource agencies



Expanded Reservoir Water Sources



Results from Proposed Project for 2030 conditions (including climate change)



Delta levee
failure,
Jones Tract

Emergency Water Supply

Need

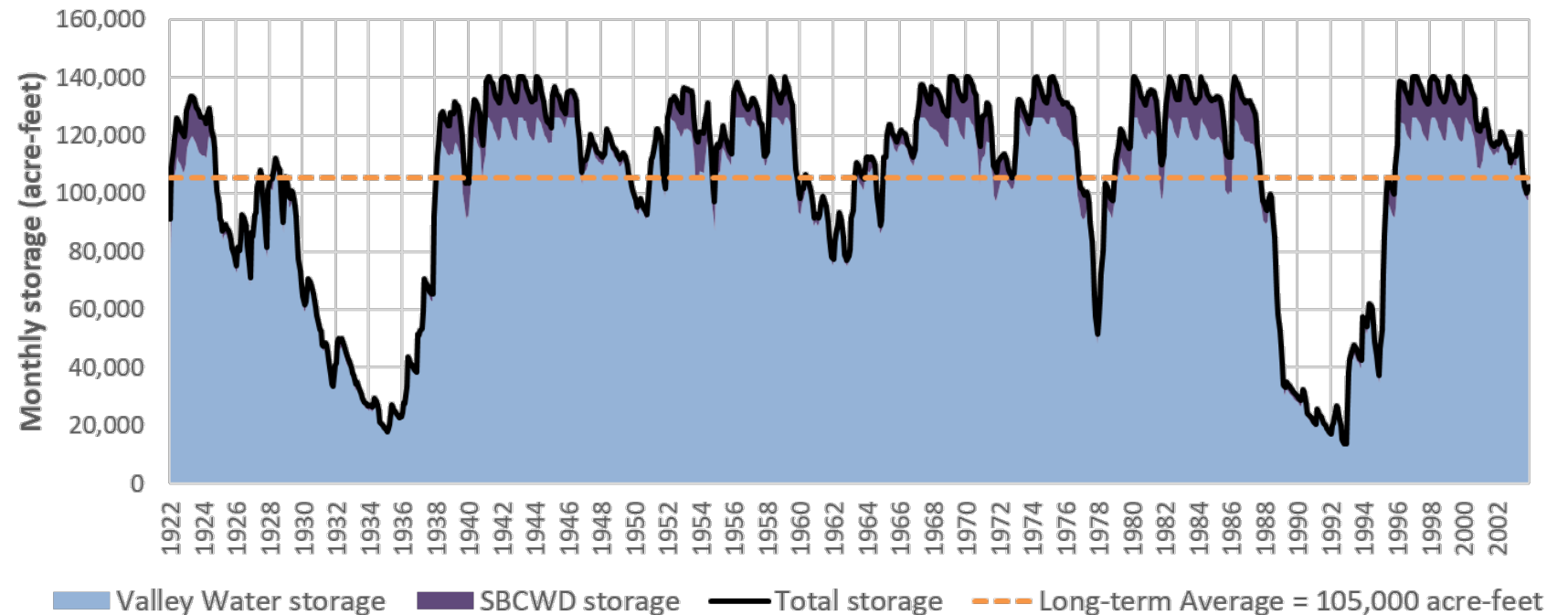
- 45% of water supply imported from Delta
- 72% chance of 6.7 or greater magnitude earthquakes occurring in the Bay Area by 2043 (USGS 2016)
- Continued island subsidence and sea-level rise compound potential for levee failure during floods or earthquakes
- Over past 25 years, Metropolitan Water District of Southern California, San Francisco Public Utilities Commission, and other major California water agencies have spent billions to increase local storage or increase resilience against earthquakes and other natural disasters that threaten imported water supplies

Long-Term Storage of Expanded Reservoir

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Key Assumptions

- Valley Water storage includes mix of imported water and natural inflows
- SBCWD storage includes mix of imported water and natural inflows
- Reservoir operations result in high storage levels for emergency supply



Notes:

- Pacheco Pass Water District (PPWD) storage is represented within Valley Water and SBCWD storage
- Results from Proposed Project for 2030 conditions (including climate change)

Emergency Water Supply

The project will provide dedicated emergency water supply

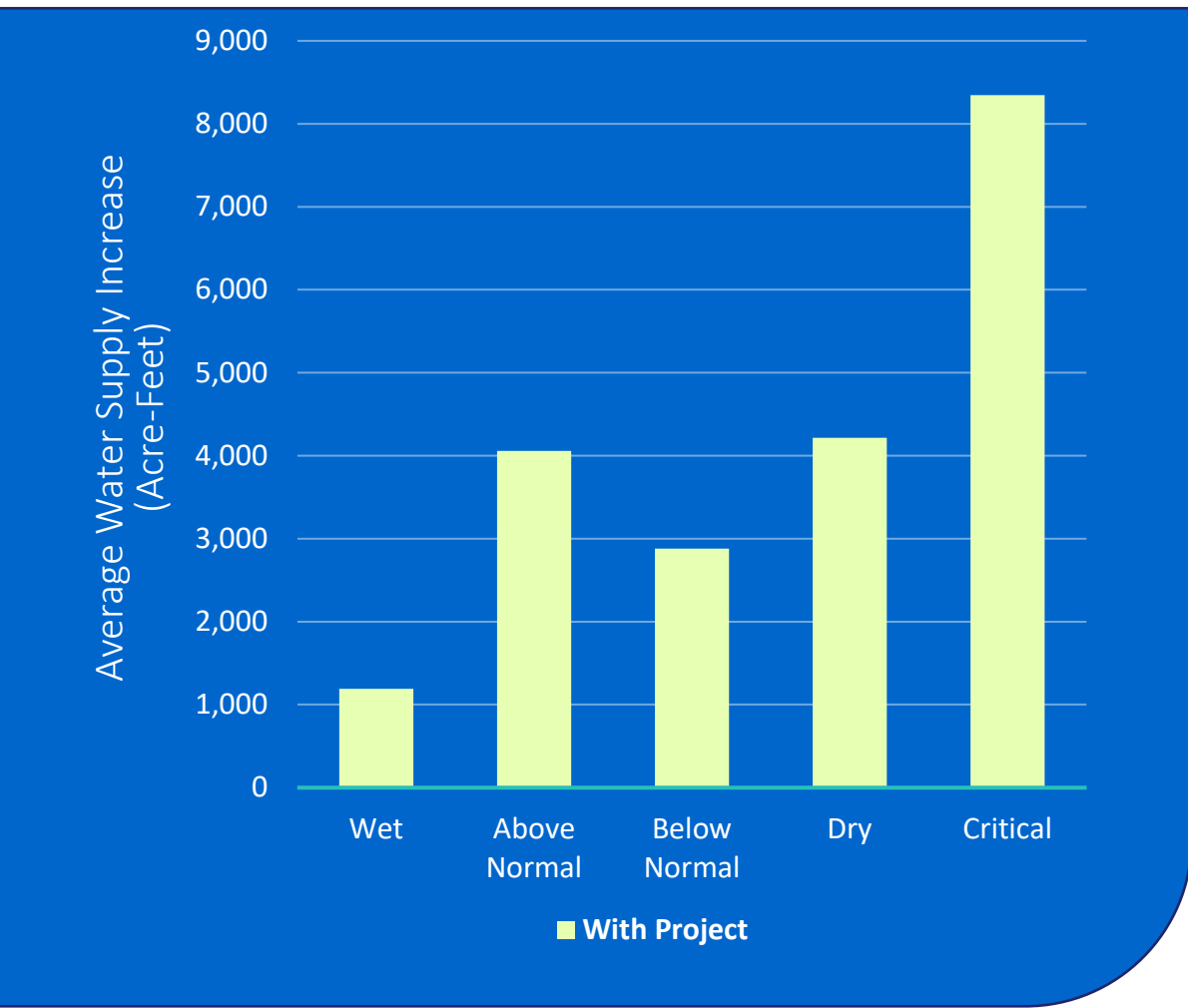
- Mitigates risk of Delta export outages, severe drought, imported water conveyance outages, and other emergencies
- Increases local surface storage capacity by 90%
- Increases emergency water supply by acre-feet 107,158 AF (99,904 acre-feet for Valley Water, 7,254 acre-feet for SBCWD)

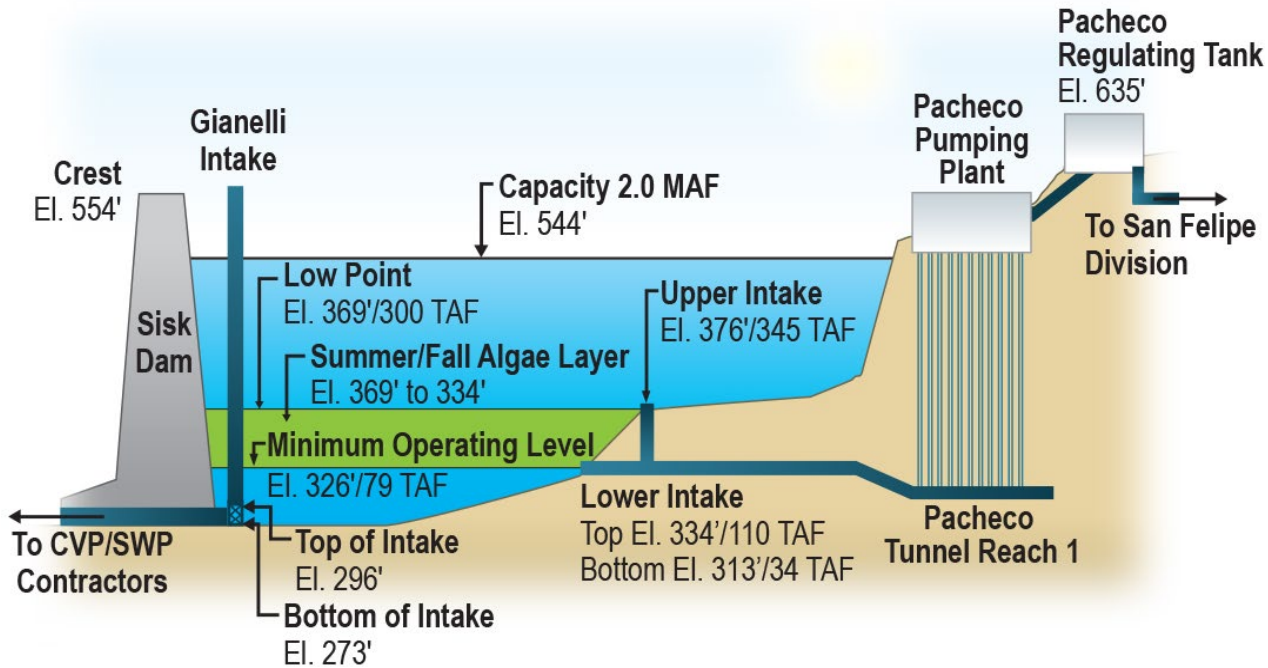


The Project will Enhance Water Supply

The project will reduce drought risk to M&I and agricultural water users

- Greatest water supply increases in drier water years and drought conditions
- Maximum water supply increase of 24,000 acre-feet during critical year; limited by Valley Water demand
- Materially contributes to sustainable groundwater management goals in four basins





Valley Water and San Benito County Water District intake at San Luis Reservoir

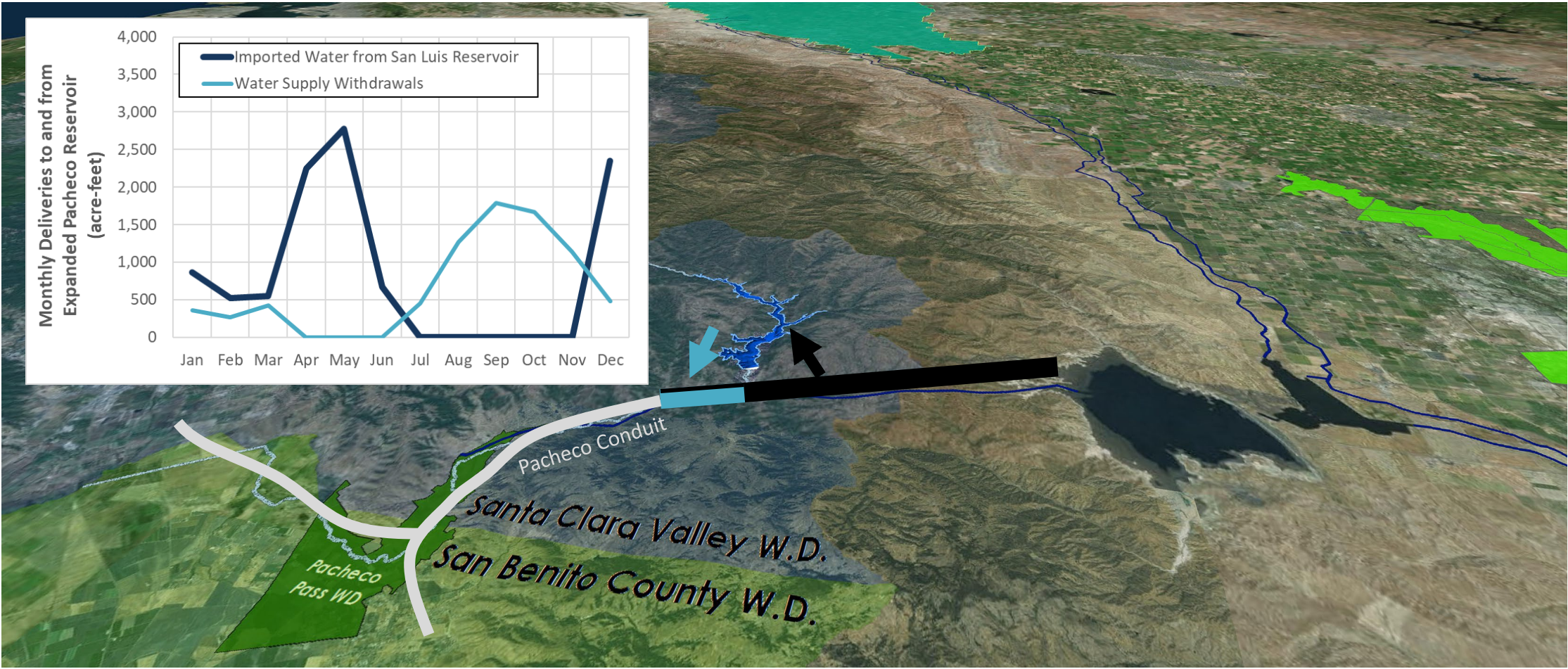
San Luis Reservoir 10

Low Point Water Quality Issues

Need

- Valley Water and San Benito County Water District's intakes are above intakes for other CVP/SWP contractors
- Up to 35-foot deep algae layer forms on the surface of reservoir
- When reservoir levels fall below 300,000 acre-feet, algae-laden water is conveyed to Valley Water treatment plants
- Spikes in taste and odor measuring 10 times normal levels, which cause problems in today's domestic supply

Operations to Address Low Point Issues



Results from Proposed Project for 2030 conditions



Algae Bloom
in San Luis
Reservoir

Reduces San Luis Low Point Water Quality Issues

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The project reduces operational constraints at San Luis Reservoir

Prevents 63 months of impaired water quality deliveries over analysis period (**97% reduction**) by:

- Delivering CVP supplies to the Pacheco Reservoir earlier in the season
- Capturing Pacheco watershed supplies in the expanded reservoir
- Using the Pacheco Reservoir as a blending source when needed



Pacheco
Creek
In 2019

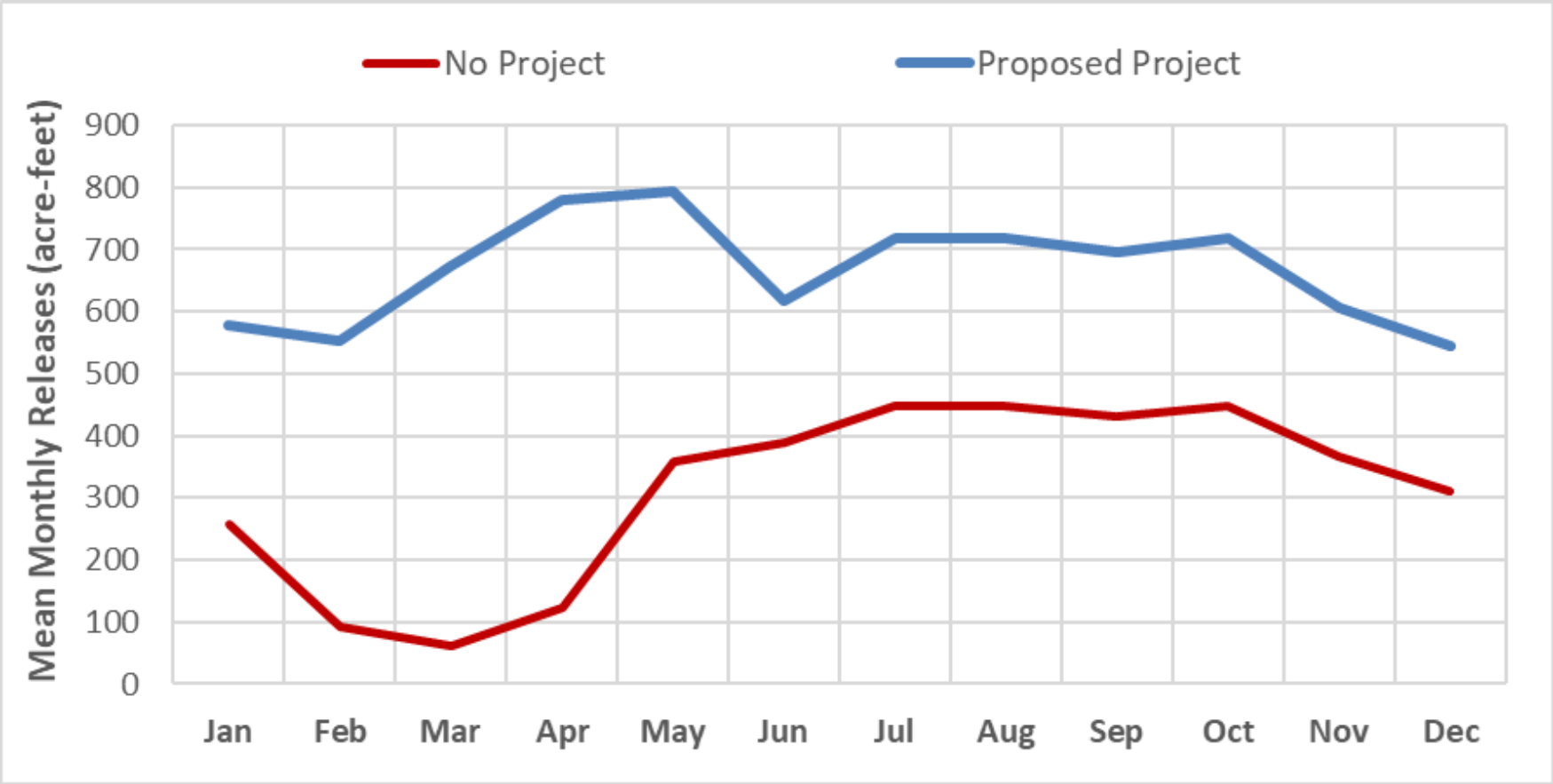
Federally Threatened South-Central California Coast Steelhead

Need

- 90% population decline in Pajaro watershed from 1960s to 1990s
- Insufficient flows in Pacheco Creek with reaches dry during summer months in many years
- Elevated water temperatures during summer months are lethal to steelhead and other native fish

Native and Non-Native Fish along Pacheco Creek near Walnut Avenue

Improved Releases from Expanded Reservoir

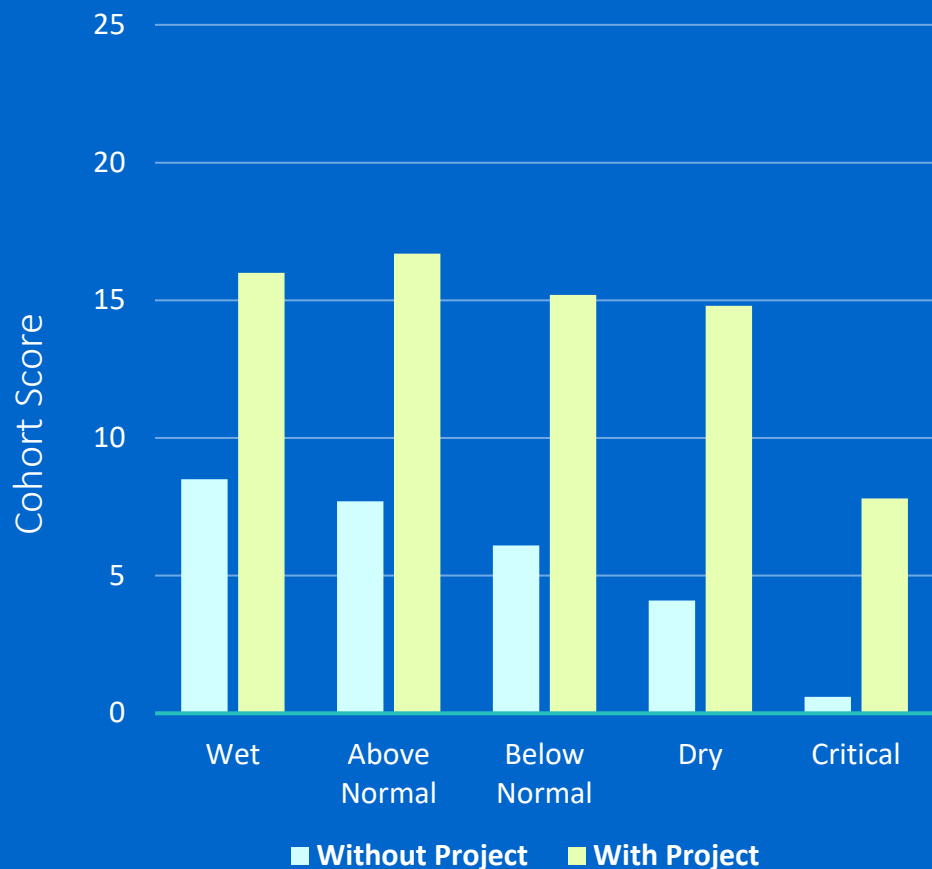


Results from Proposed Project for 2030 conditions (including climate change)

Supports Federally Threatened Steelhead Recovery

The Project will improve conditions in watershed critical to recovery

- Improved flow and temperature conditions provide substantial improvements in habitat conditions
- Larger cold water pool improves temperature in Pacheco Creek
- Contributes to the development of an independent population in the Pajaro River watershed
- Increases South Central California Coast Steelhead cohort score between 147%



Bay-Delta Ecosystem Decline

Need

- 90% of Delta watershed wetlands have disappeared
- Insufficient water supplies for Federal and other refuges within San Joaquin Valley
- Central Valley Project Improvement Act Refuge Water Supply Program unable to provide reliable water supplies during all year types

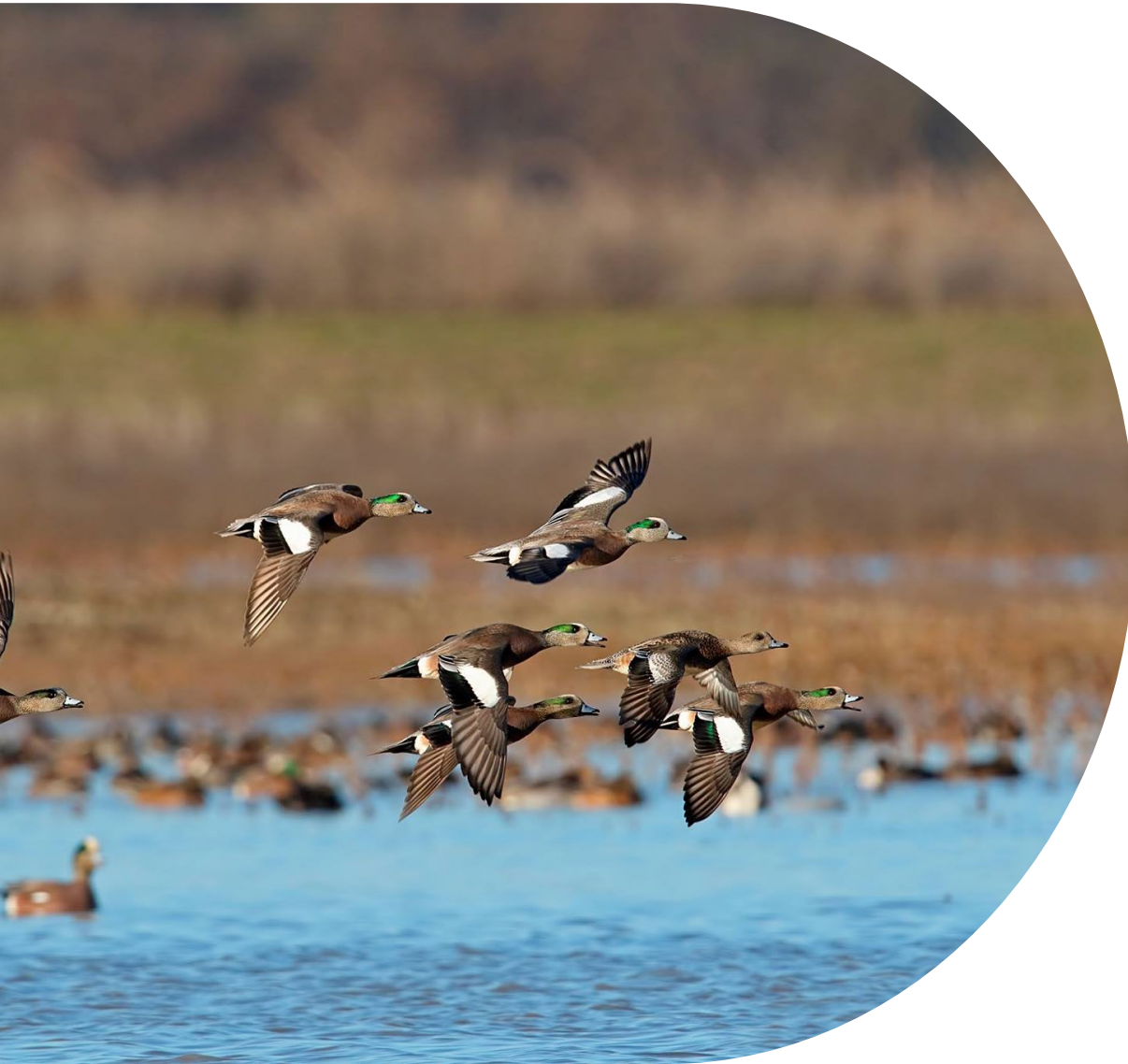


National
Wildlife
Refuge in San
Joaquin
Valley

Enhances Bay-Delta Ecosystem

Increased water supplies to Delta watershed wildlife refuges

- Dedicates 2,000 acre-feet for wetlands in below-normal water years
- Increases food supply for migrating Pacific Flyway waterfowl in the fall and winter
- Water Storage Investment Program requires measurable Bay-Delta Ecosystem benefit



Flooding in Downstream Communities

Need

- Extensive flooding even for frequent/small events; 3 events in last seven years:
 - January 2023 flooding along Pacheco Creek with 15,800 cfs peak flow near Dunnville
 - January and February 2017 flooding, causing breaching of levee along Pacheco Creek, at peak flows below 12,000 cfs near Dunneville



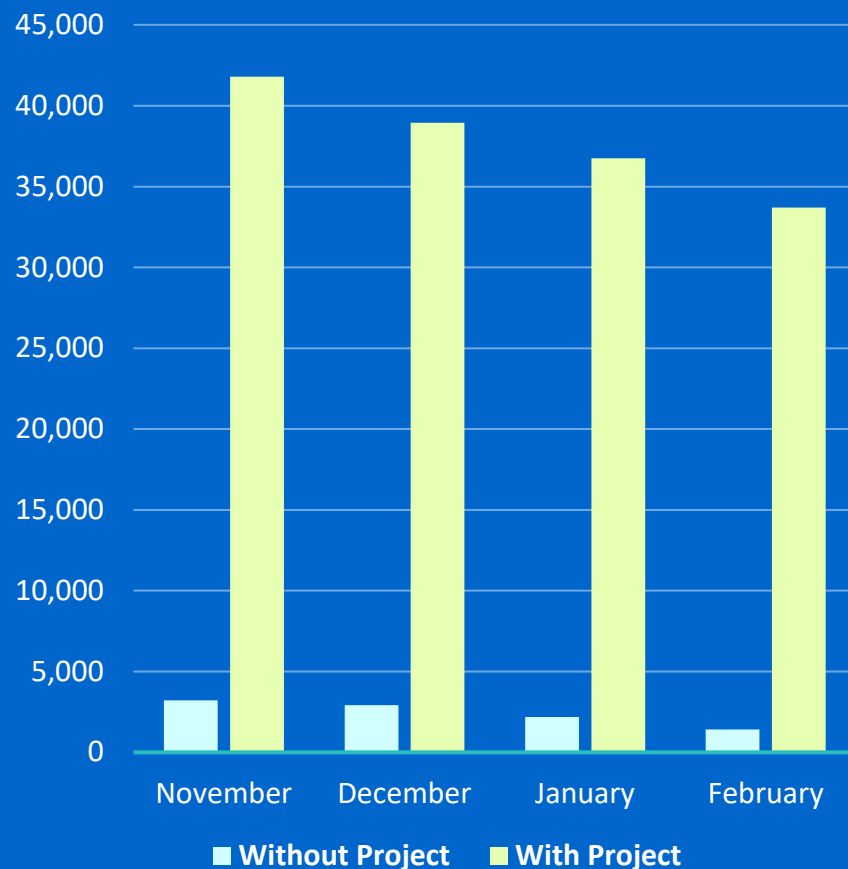
January 2023 Floods along Pacheco Creek

Reduces Flooding in Downstream Communities

The project will protect vulnerable communities against flooding

- Expanded reservoir will reduce peak flows:
 - Additional storage in expanded reservoir available to capture flood flows
 - Attenuation of flows/reduction of flood peaks due to routing of flows through larger reservoir and modified spillway configuration
- Reservoir expansion can reduce peak flood flows by up to 46 % in Pacheco Creek

Average Storage Space Available to Capture Natural Inflows (acre-feet)





Valley Water

Clean Water • Healthy Environment • Flood Protection