

City and County of San Francisco
San Francisco Planning Department

Summary Presentation on
Draft Program Environmental Impact Report
for the San Francisco Public Utilities Commission's
Water System Improvement Program

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Key Acronyms



PEIR = Program Environmental Impact Report

WSIP = Water System Improvement Program

*SFPUC = San Francisco Public Utilities
Commission*

CEQA = California Environmental Quality Act

mgd = million gallons per day

Purpose of this Presentation



- *Provide overview of PEIR organization and content*
- *Review relevant portions of PEIR:*
 - ◆ *Existing System and Program Description*
 - ◆ *Impacts and Mitigation Measures*
 - Facility Improvement Projects
 - Water Supply and System Operations
 - ◆ *Growth Inducement*
 - ◆ *Variants*
 - ◆ *Alternatives*

Background

The SFPUC owns and operates a regional water system that extends from the Sierra Nevada to San Francisco



SFPUC Regional Service Area



- *The SFPUC serves retail and wholesale customers, totaling 2.4 million people in 5 counties*
- *Some wholesale customers have other water sources besides the SFPUC*



Purpose of PEIR



- *Comply with CEQA*
- *Provide information about the environmental effects of implementing the proposed WSIP*
 - ◆ *Analyze general effects of constructing and operating facility improvement projects*
 - ◆ *Analyze effects of modifying water supply sources and system operations*
- *Identify possible mitigation measures*
- *Evaluate alternatives*



PEIR Organization

- **Volume 1**
 - ♦ *Summary, Introduction, Existing System, Program Description*
- **Volume 2 – Facilities Setting and Impacts**
- **Volume 3 – Water Supply/System Operations Setting and Impacts**
- **Volume 4**
 - ♦ *Mitigations, Growth, Variants, Alternatives*
- **Volume 5 – Appendices**



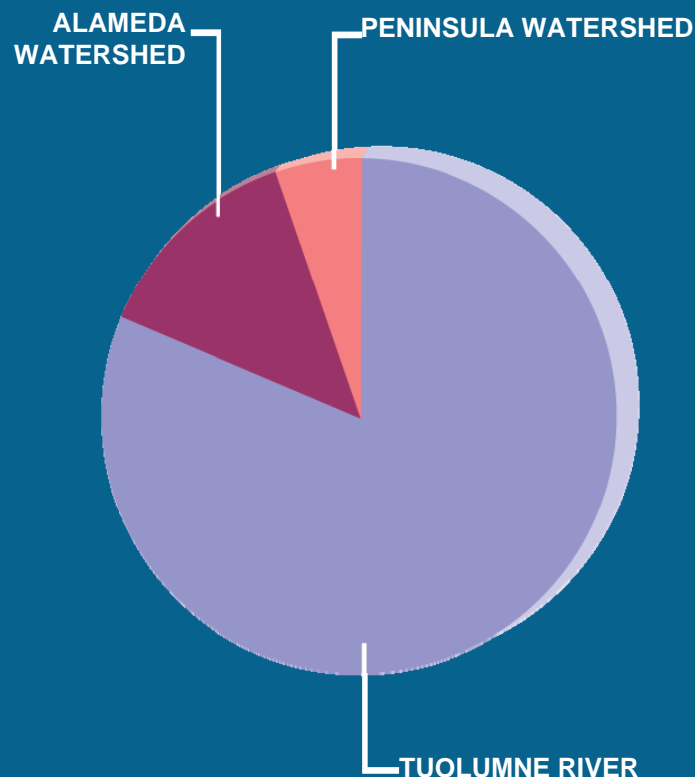
WSIP Goals and Objectives

- Maintain high water quality
- Improve seismic reliability
- Increase delivery reliability
- Meet water supply needs through 2030
- Limit drought rationing to 20% systemwide
- Enhance sustainability
- Achieve cost-effective, reliable system



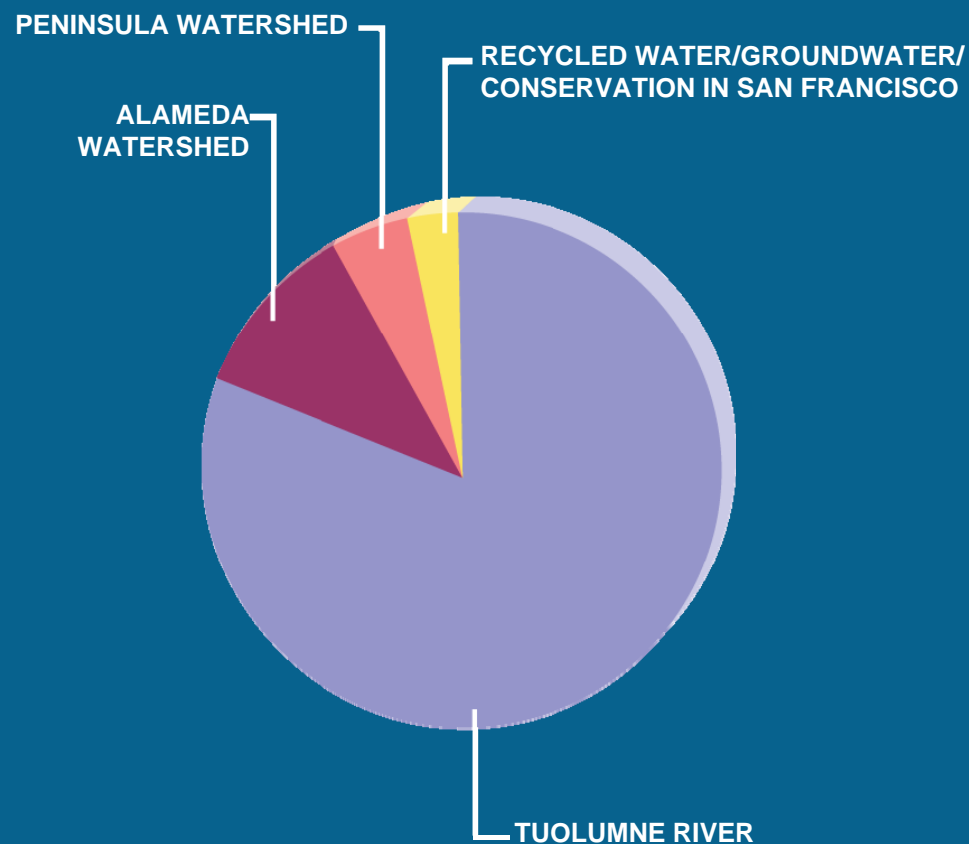


Water Supply Sources, Normal Years



Existing Sources

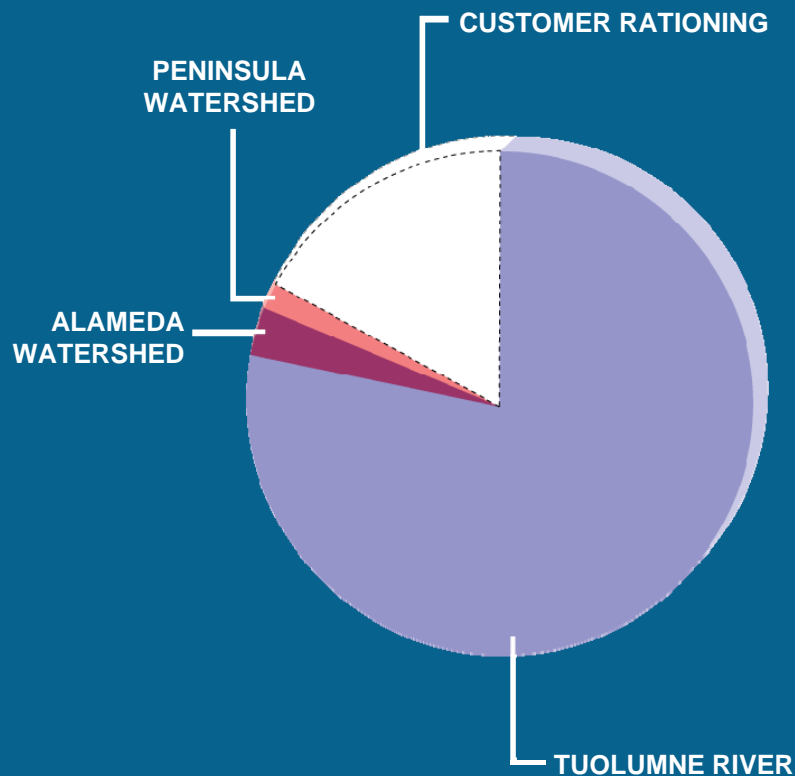
SFPUC currently provides an average annual supply of 265 mgd



Proposed Sources

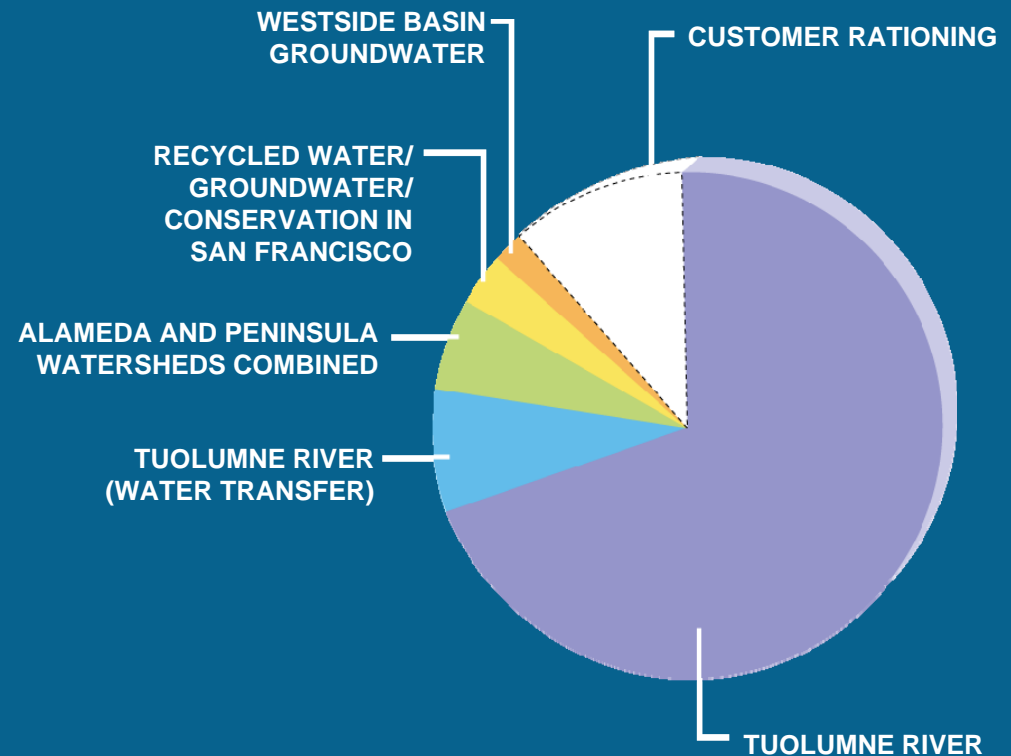
Under WSIP, SFPUC would provide an average annual supply of 300 mgd by 2030 -- an increase of 35 mgd

Water Supply Sources, Drought Years



Existing Sources

SFPUC currently cannot provide 265 mgd during long droughts



Proposed Sources

Under WSIP, SFPUC would add other sources by 2030 and limit rationing during droughts

Program Description



- Construct and operate facility improvement projects along regional system in 7 counties
- Modify system operations to meet goals and objectives



Environmental Effects of Facilities



- The PEIR analyzes general effects of implementing WSIP facility projects in 5 regions
 - *San Joaquin Region*
 - *Sunol Valley Region*
 - *Bay Division Region*
 - *Peninsula Region*
 - *San Francisco Region*
- Construction impacts from 2008 to 2015
- Siting, design, and operation impacts mostly within existing system corridor
- Facilities impacts would contribute to cumulative impacts due to other projects in the same region

Facilities Impact Assumptions



- Programmatic impact analysis is based on preliminary project data
- Programmatic mitigation measures are identified for significant impacts
- PEIR impact significance determinations are very conservative
- More detailed environmental review to follow on each project, and final impacts and mitigations to be refined



Facilities Impact Areas



- Land Use and Visual Resources
- Geology and Seismicity
- Hydrology and Water Quality
- Biological Resources
- Cultural Resources
- Traffic
- Air Quality
- Noise
- Public Services
- Agricultural Resources
- Recreation
- Hazards
- Energy

Facilities Impact Results



- Many impacts would be less than significant due to existing regulations and SFPUC procedures
- Many significant impacts could be lessened with identified mitigation measures
- Some impacts would be potentially significant and unavoidable but subject to more detailed analysis

Facilities Mitigation Measures



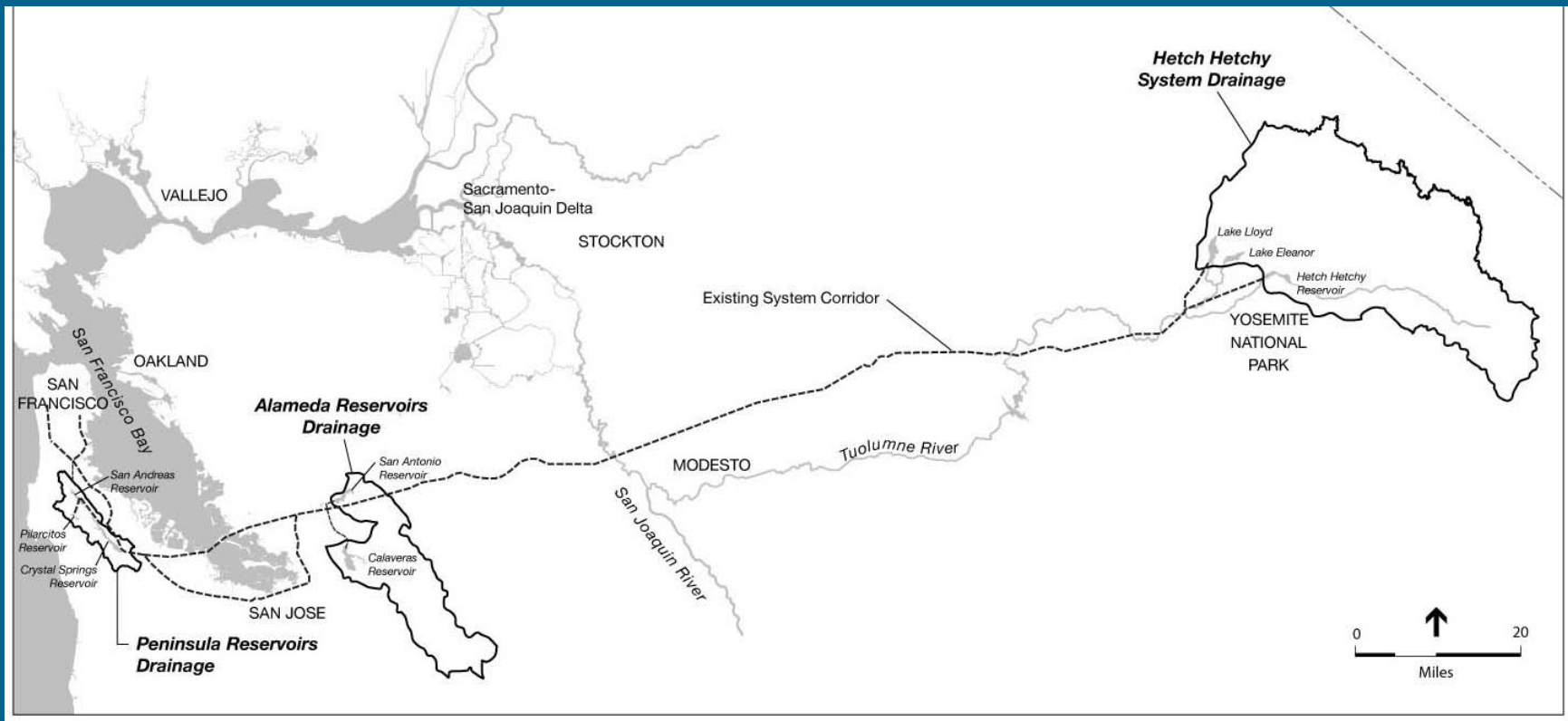
- Mitigation measures are identified to avoid or minimize facilities impacts
- Typical measures include:
 - ◆ *Siting and design studies*
 - ◆ *Air, water, and noise control measures*
 - ◆ *Coordination and notification*
 - ◆ *Surveys, monitoring, and testing*
 - ◆ *Protection, restoration, and compensation*

Environmental Effects of Water Supply



- WSIP would increase diversions from the Tuolumne River and would modify system operations
- Affected Resources
 - ◆ *Tuolumne River Watershed and Downstream*
 - ◆ *Alameda Creek Watershed*
 - ◆ *Peninsula Watershed (Watersheds of San Mateo and Pilarcitos Creeks)*
 - ◆ *Westside Groundwater Basin*

SFPUC Water Supply Watersheds



Water Supply Impact Analysis



- Modified system operations would cause changes in
 - ♦ *System reservoir storage*
 - ♦ *Diversions to and releases from reservoirs*
- Impact analysis based on changes in
 - ♦ *Reservoir levels*
 - ♦ *Stream flow in creeks and rivers affected by reservoirs*
- Hetch Hetchy/Local Simulation Model used to estimate impacts

Hetch Hetchy/Local Simulation Model



- Computer model developed for SFPUC system to aid in water supply planning
- Incorporates details of SFPUC facilities and operating requirements
- Simulates system operations and snowmelt and rainfall conditions over 82-year hydrologic record from 1920 to 2002
- Evaluates system operations, performance, and effects on reservoir storage and releases



Water Supply Impact Areas

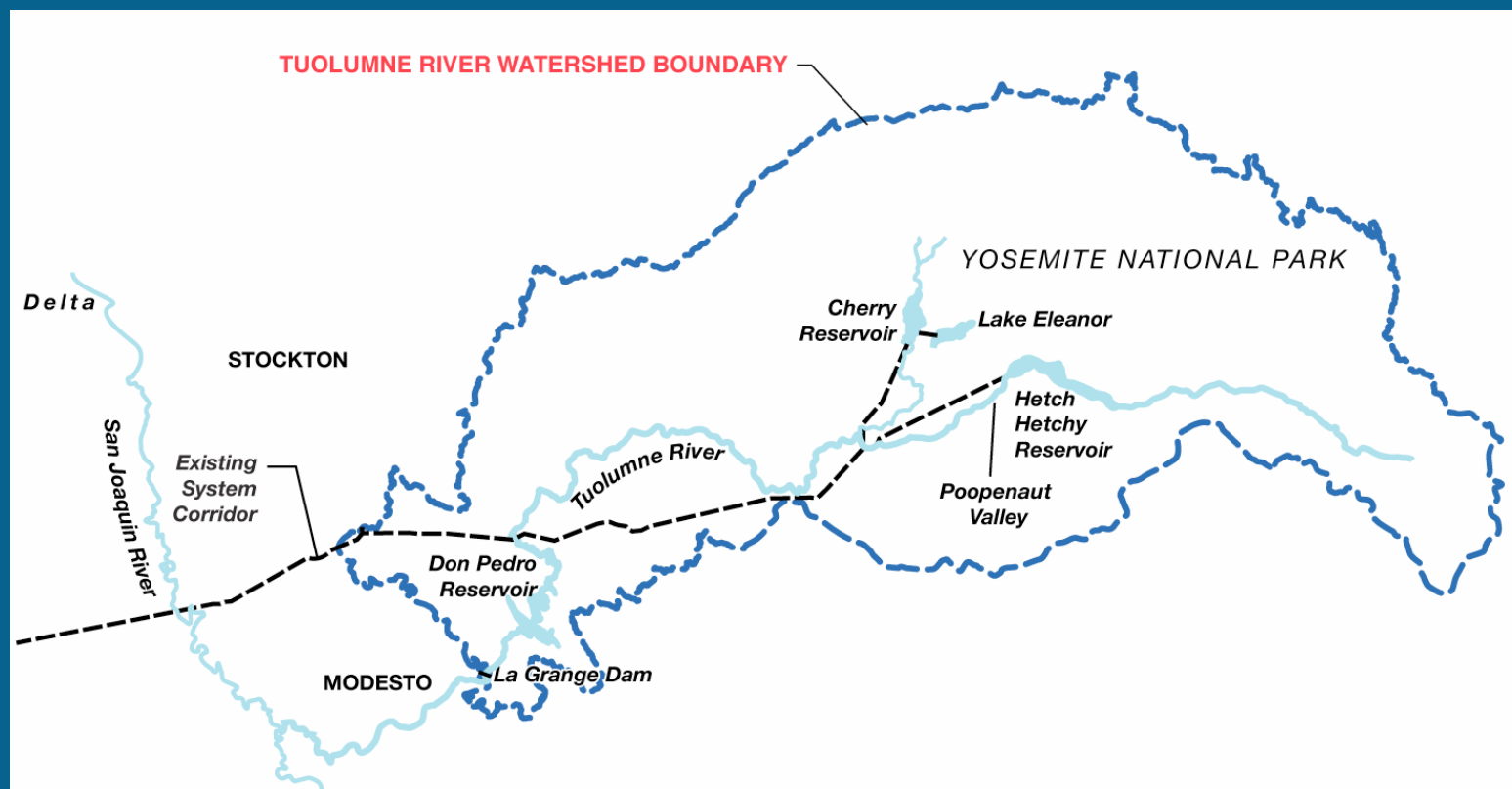


- **Stream flow and Reservoir Levels**
- **Geomorphology**
- **Surface Water Quality**
- **Surface Water Supplies (Tuolumne only)**
- **Groundwater**
- **Fisheries**
- **Terrestrial Biological Resources**
- **Recreational and Visual Resources**



Tuolumne Watershed – Significant Impacts

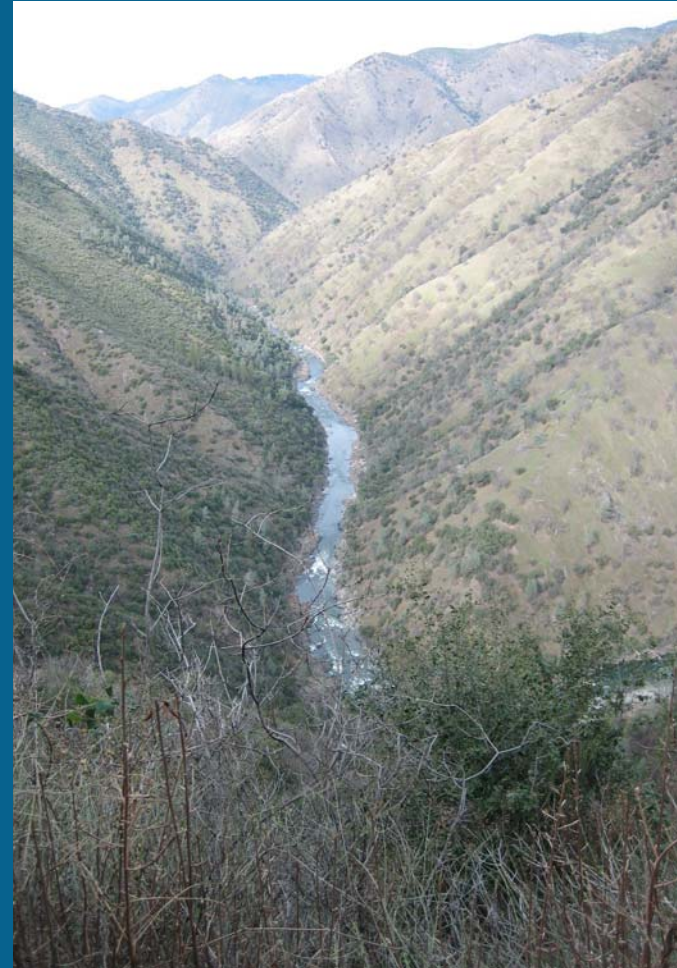
- **Biological resources** in Poopenaut Valley below Hetch Hetchy Reservoir due to reduced releases
- **Fishery and riparian resources** along Tuolumne River below La Grange Dam due to reduced releases





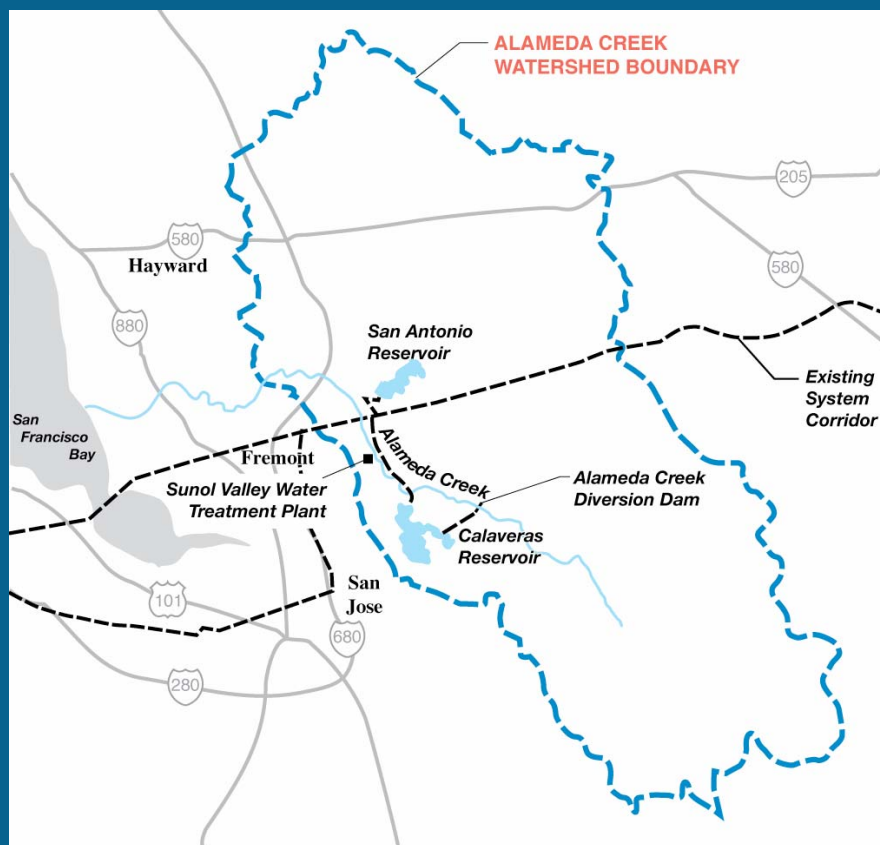
Tuolumne Watershed – Lesser Impacts

- **Stream flow** in Tuolumne River and downstream to the Delta
- **Geomorphology** in Tuolumne River
- Surface **water quality** and groundwater
- **Recreation and visual resources**, including whitewater rafting
- **Hydropower** generation
- **Cumulative** impacts





Alameda Creek Watershed – Significant Impacts



- **Stream flow** below Alameda Creek Diversion Dam due to restored diversions to Calaveras Reservoir
- **Fishery and riparian resources** in Alameda Creek in areas of reduced flow
- **Riparian habitat** or other biological resources around Calaveras Reservoir due to inundation
- Effects on **recreation and visual resources** along Alameda Creek

Alameda Creek Watershed – Lesser Impacts

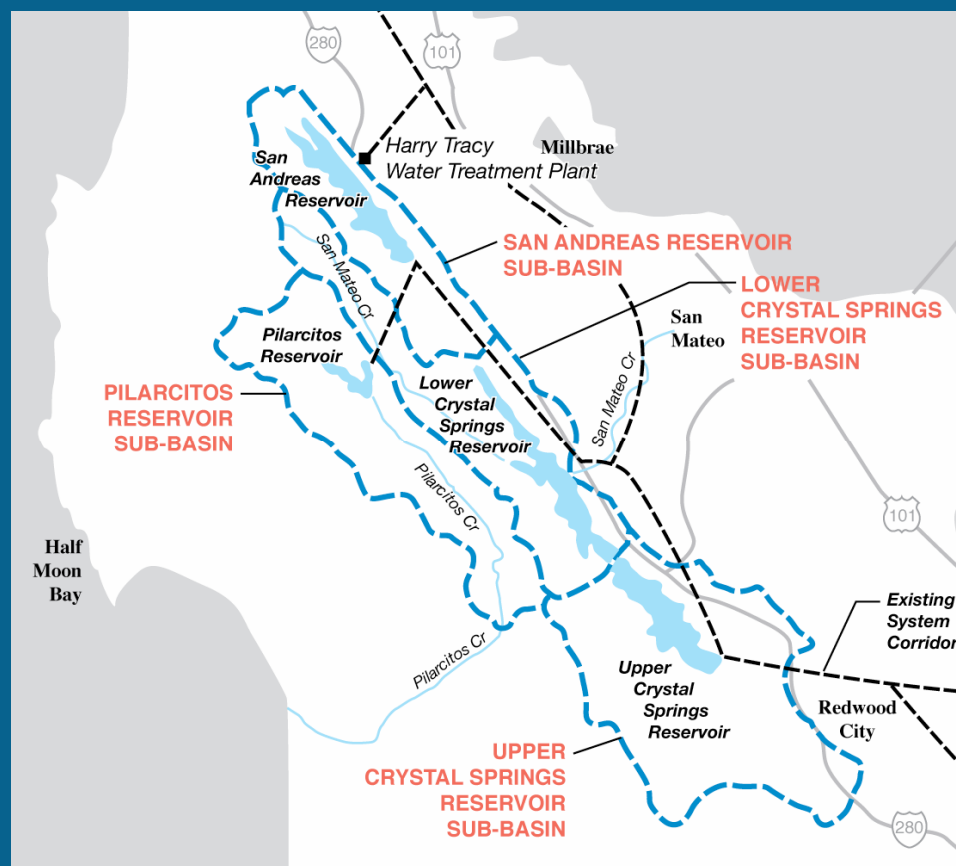


- **Geomorphology** in Alameda Creek
- Surface **water quality** and **groundwater**
- Resources associated with San Antonio Reservoir and Creek
- Resources along Alameda Creek below San Antonio Creek
- **Cumulative** impacts



Peninsula Watersheds – Significant Impacts

- **Water quality, fishery and biological resources** in Pilarcitos Reservoir and Pilarcitos Creek due to increased diversions
- **Fishery resources** in Crystal Springs Reservoir due to inundation of spawning habitat
- **Biological resources** around Crystal Springs Reservoir due to increased storage levels





Peninsula Watershed – Lesser Impacts

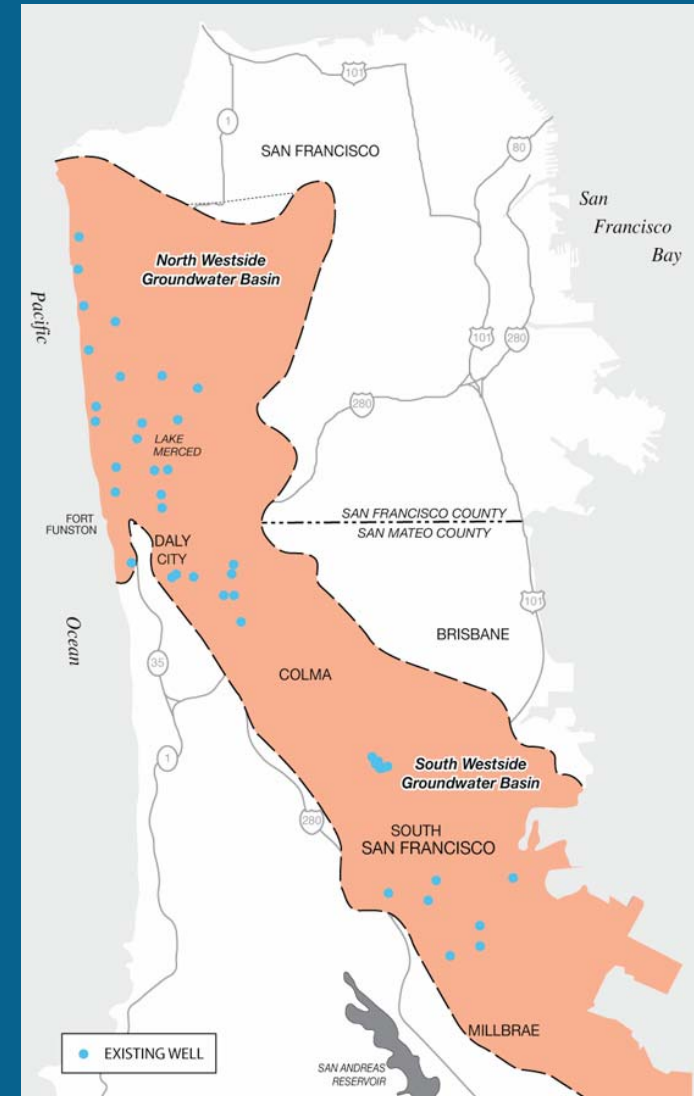
- **Stream flow** in San Mateo and Pilarcitos Creeks
- **Geomorphology** in San Mateo and Pilarcitos Creeks
- **Groundwater resources**
- **Recreation and visual resources**
- **Cumulative impacts**



Westside Groundwater Basin



- WSIP would develop groundwater resources
- North Westside Groundwater Basin
 - ◆ *Local Groundwater Projects*
- South Westside Groundwater Basin
 - ◆ *Regional Conjunctive-use Project*



Westside Groundwater Basin Impacts



- Potential basin overdraft and seawater intrusion in North Westside Groundwater Basin due to increased pumping
- Changes in water levels in Lake Merced
- Potential contamination of drinking water due to groundwater pumping





System Operations Mitigation Measures

Measures identified to minimize water supply and system operations impacts include:

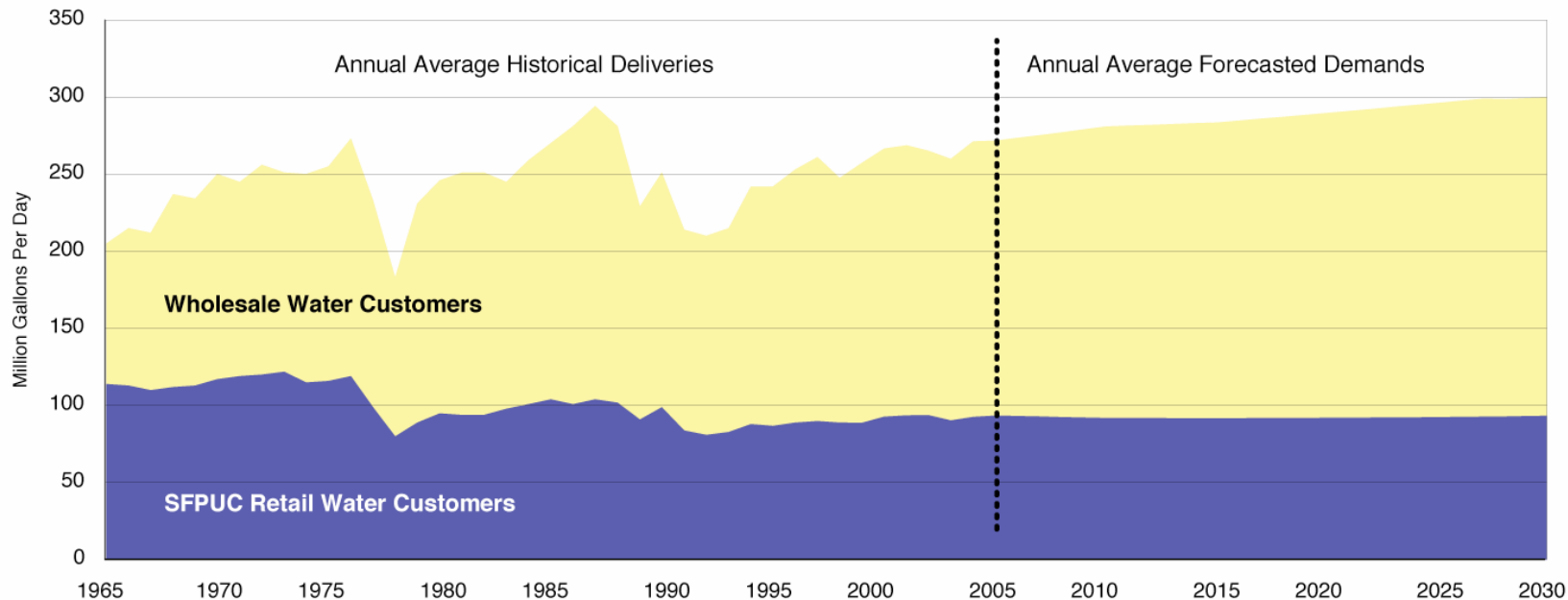
- Managed releases from reservoirs
- Habitat enhancement and compensation
- Fishery habitat protection
- Revised operations for Pilarcitos facilities
- Groundwater monitoring and management





Analysis of Growth Inducement

By providing water to serve future demand, the WSIP would remove water supply limitations as an obstacle to growth and would thereby have a **growth-inducing impact**





Growth Inducement – Results

- The WSIP would support planned growth in the existing SFPUC wholesale customer service area
- Growth would primarily be infill development
- The EIRs on planning documents for the service area have identified environmental effects of planned growth, including unavoidable adverse effects on
 - ♦ *Traffic congestion*
 - ♦ *Air quality*
- WSIP would contribute to those effects

WSIP Variants



The SFPUC requested analysis of WSIP variants; the WSIP variants are not intended to be CEQA alternatives

- **Variant 1 – All Tuolumne**
- **Variant 2 – Regional Desalination for Drought**
- **Variant 3 – 10% Rationing**

CEQA Alternatives



- The PEIR identifies program alternatives that would
 - ◆ *Reduce or lessen significant impacts*
 - ◆ *Meet most of the basic program objectives*
- Program alternatives address
 - ◆ *Demand level served*
 - ◆ *Water supply sources, rationing policy*
 - ◆ *Number of facility improvement projects*

Alternatives Analyzed



- No Program
- No Purchase Request Increase
- Aggressive Conservation/Water Recycling and Local Groundwater
- Lower Tuolumne Diversion
- Year-round Desalination at Oceanside
- Regional Desalination for Drought (*Variant 2*)
- Modified WSIP

Alternatives Analyzed



Alternative	How it compares with WSIP
No Program	<ul style="list-style-type: none">• <i>Construct only projects required by regulations</i>• <i>Would reduce level of increased Tuolumne River diversions</i>• <i>Would increase rationing during droughts</i>• <i>Would not meet WSIP objectives for seismic reliability, delivery reliability, water supply, sustainability, or cost-effectiveness</i>
No Purchase Request Increase	<ul style="list-style-type: none">• <i>Limit future water sales to wholesale customers</i>• <i>Construct all WSIP facility projects</i>• <i>Would reduce level of increased Tuolumne River diversions</i>• <i>Customers could seek alternate supplies</i>• <i>Would not meet water supply objectives</i>

Alternatives Analyzed



Alternative	How it compares with WSIP
Aggressive Conservation, Water Recycling, & Groundwater – No Additional Tuolumne River Diversions	<ul style="list-style-type: none">• <i>Implement high-end estimate of regional conservation, water recycling, and groundwater projects</i>• <i>Construct all WSIP facility projects</i>• <i>Construct additional facilities in service area</i>• <i>Would avoid increase in Tuolumne River diversions</i>• <i>Would increase rationing during droughts</i>• <i>Customers could seek alternate supplies</i>• <i>Unknown feasibility of implementing all regional projects</i>• <i>Unknown feasibility of rationing during droughts beyond aggressive conservation</i>• <i>Would not meet water supply objective</i>

Alternatives Analyzed



Alternative	How it compares with WSIP
Aggressive Conservation, Water Recycling, & Groundwater – with Additional Tuolumne River Diversions	<ul style="list-style-type: none">• <i>Implement high-end estimate of regional conservation, water recycling, and groundwater projects</i>• <i>Construct all WSIP facility projects</i>• <i>Construct additional facilities in service area</i>• <i>Would reduce level of increased Tuolumne River diversions</i>• <i>Customers could seek alternate supplies</i>• <i>Unknown feasibility of implementing all regional projects</i>• <i>Unknown feasibility of rationing during droughts beyond aggressive conservation</i>

Alternatives Analyzed



Alternative	How it compares with WSIP
Lower Tuolumne River Diversion	<ul style="list-style-type: none">• <i>Same level of increased Tuolumne River diversions, but diversion point near confluence with San Joaquin River</i>• <i>Construct all WSIP facility projects</i>• <i>Construct diversion structure, pipelines, and treatment plant for diverted water</i>• <i>Unknown if water available at new diversion point</i>
Year-round Desalination at Oceanside	<ul style="list-style-type: none">• <i>Construct 25 mgd desalination plant in SF and pipeline to system reservoir</i>• <i>Construct all WSIP facility projects</i>• <i>Would avoid increase in Tuolumne River diversions</i>• <i>Unknown if adequate space available</i>• <i>Some retail customers would receive only desalinated water</i>

Alternatives Analyzed



Alternative	How it compares with WSIP
Regional Desalination for Drought	<ul style="list-style-type: none">• <i>Use desalinated water for supplemental drought supply instead of water transfers</i>• <i>Construct all WSIP facility projects</i>• <i>Construct regional desalination facilities</i>• <i>Would slightly reduce level of increased Tuolumne River diversions</i>• <i>Feasibility still under study</i>
Modified WSIP	<ul style="list-style-type: none">• <i>Construct all WSIP facility projects</i>• <i>Adjust system operations to incorporate habitat protection measures</i>• <i>Implement increased level of regional conservation, recycled water, and groundwater</i>• <i>Construct additional facilities in service area</i>• <i>Would have about same level of increased Tuolumne River diversions</i>• <i>Environmentally superior alternative</i>

Other Alternatives Considered



- **Extend WSIP construction schedule**
- **Enlarge Calaveras Reservoir**
- **Filter Sierra source water**
- **Discontinue historical Alameda Creek diversions**
- **Groundwater banking in Kern County**
- **Delta exchange or diversion**
- **Remove O'Shaughnessy Dam**

WSIP PEIR Schedule



- **90-day Public Review**
 - ◆ *June 29 to October 1, 2007*
- **Public Hearings in September 2007**
 - ◆ *September 5: Sonoma*
 - ◆ *September 6: Modesto*
 - ◆ *September 18: Fremont*
 - ◆ *September 19: Palo Alto*
 - ◆ *September 20: San Francisco*
- **Comments and Responses Document**
- **PEIR Certification – Spring 2008**