



# American River Basin Study

Addressing  
Potential  
Climate  
Change  
Effects



CITY OF  
**FOLSOM**  
DISTINCTIVE BY NATURE



City of  
**SACRAMENTO**



CITY OF  
**ROSEVILLE**  
CALIFORNIA



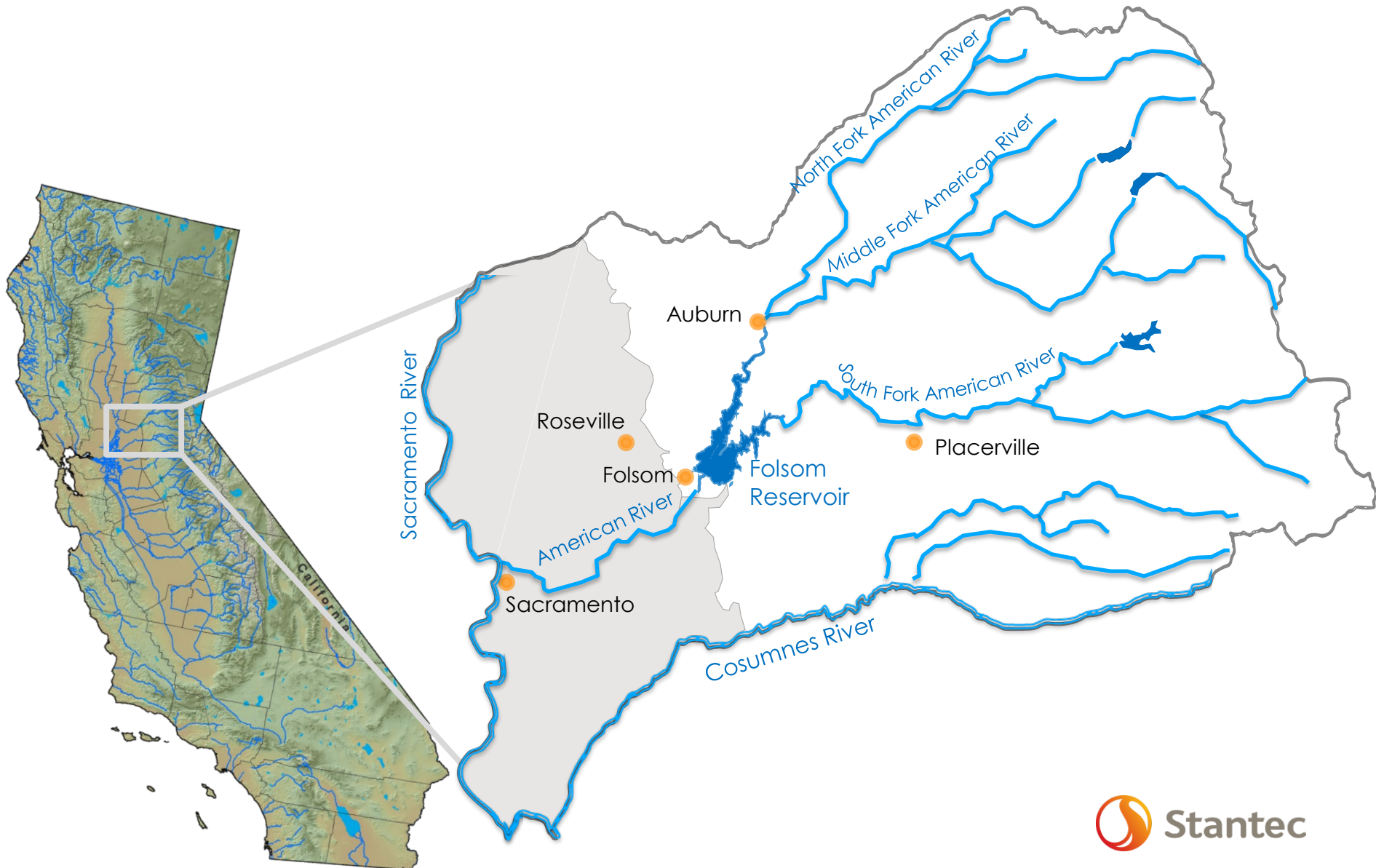
# Workshop Outline

- American River Basin Study Overview
- Workshop # 1 Recap
  - Projected Future Climate Conditions and Effect on Water Management
  - Regional Water Management Vulnerabilities
- Addressing Regional Water Management Vulnerabilities
  - Approach
  - Breakout Discussion Groups: Adaptation Measures/ Management Actions
- Next Steps



# American River Basin Study Overview

# American River Basin



# ARBS Objectives

1. Further refine the assessment of water supplies and demands for the American River Basin
2. Address regional **demand-supply imbalance** and infrastructure deficiencies under the existing and **future climate change conditions**.
3. Improve **coordination of local and Federal water management**.
4. Align water management tools, strategies, and planning efforts of Reclamation and water agencies in the basin.
5. Identify water management strategies and actions which remain functional across multiple future potential climate and socioeconomic conditions to 2100 AD.

# ARBS Schedule

Task	2017	2018	2019	2020
MOA Signed	★			
Climate Change Data & Model Development		■		
Water Supply & Demand Assessment		■		
Adaptation Strategy Development			■	
Findings & Final Report				■
Public Stakeholder Meetings			👥	👥
				👥



American River Basin Study  
**Workshop #1 Recap**

# Future Changes in Temperature

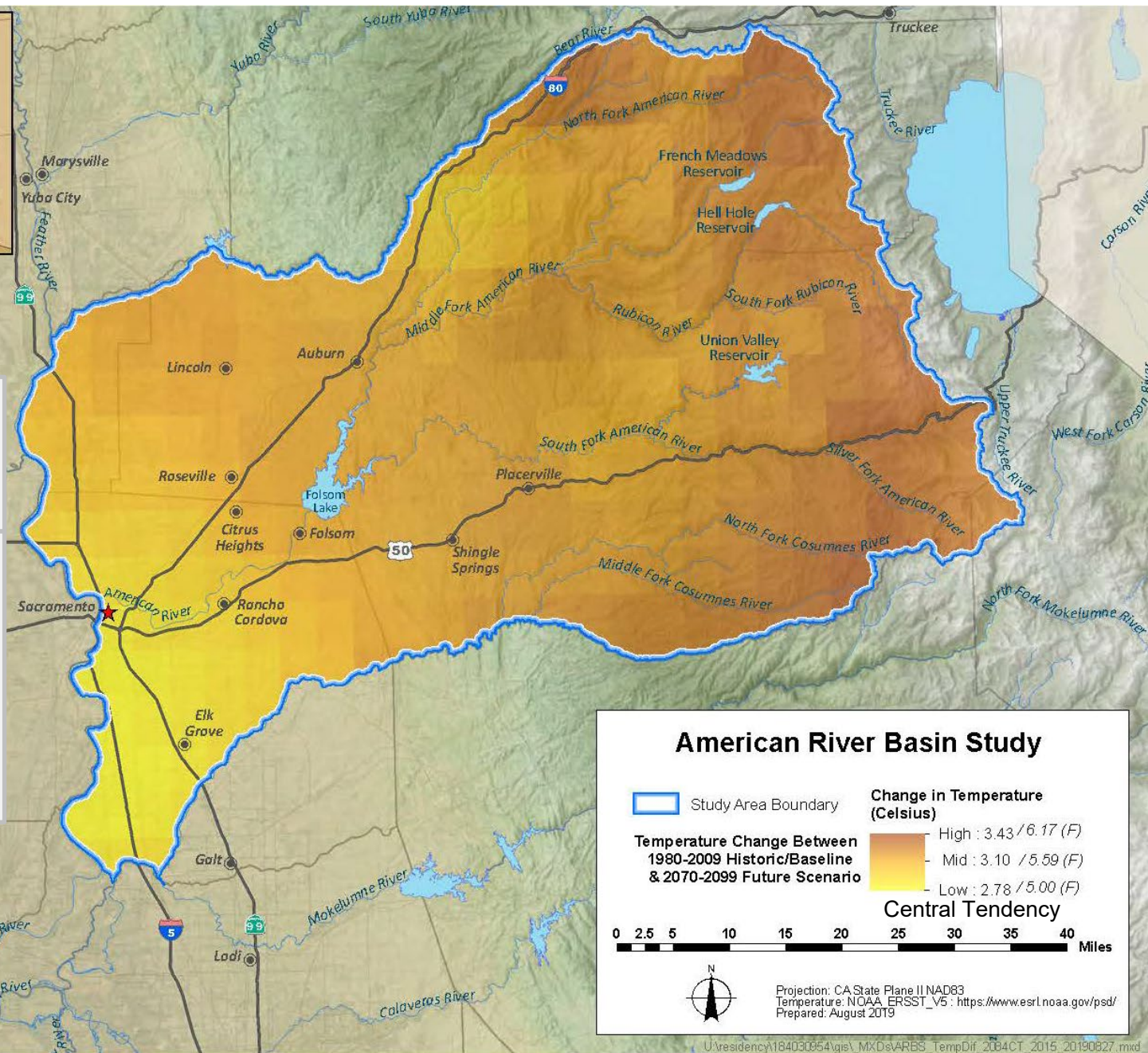


Increase in temperature by year 2070 of up to:

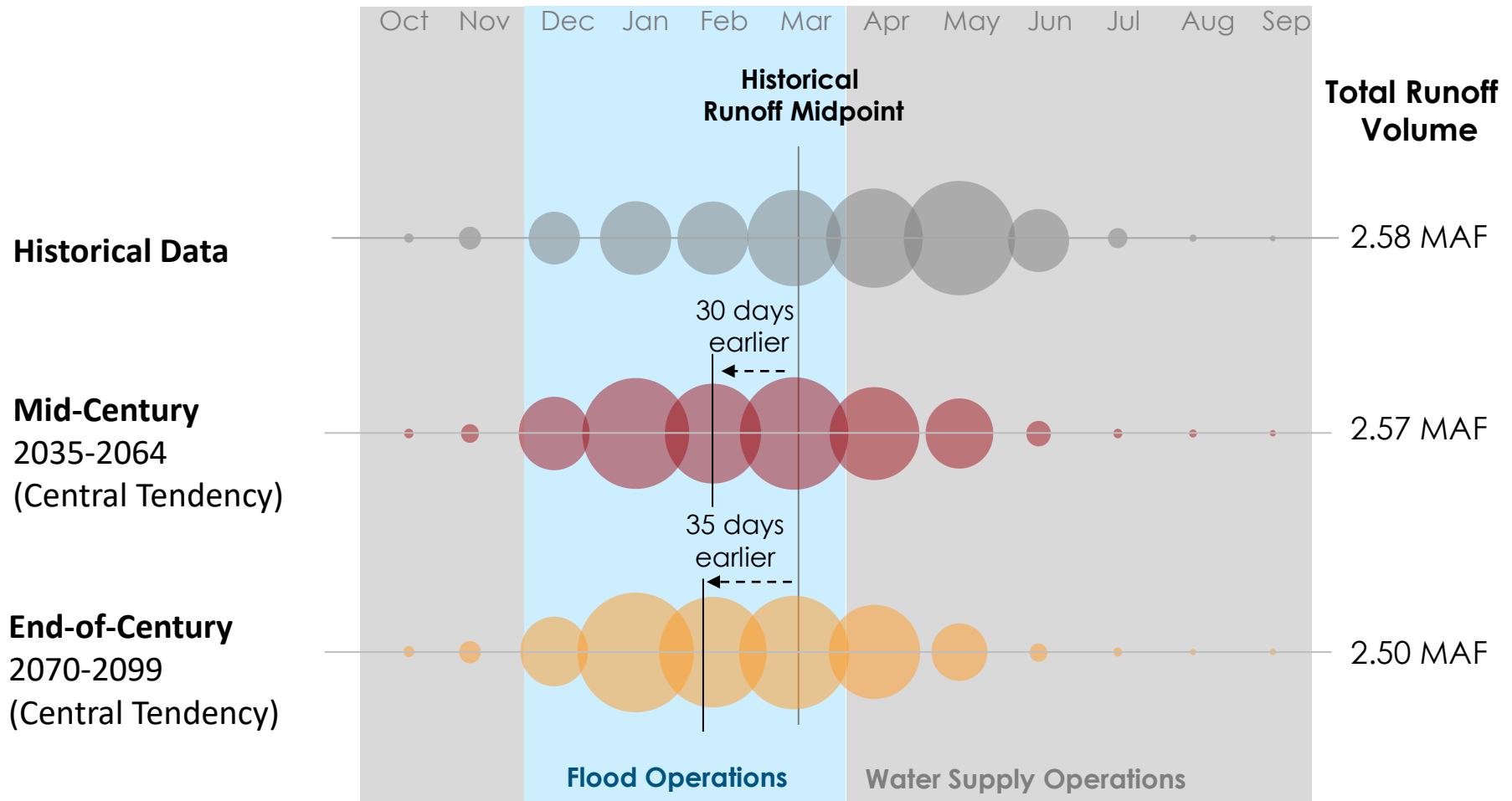
Warm-Wet ● +4.0°F

Central T. ● +5.6°F

Hot-Dry ● +7.4°F



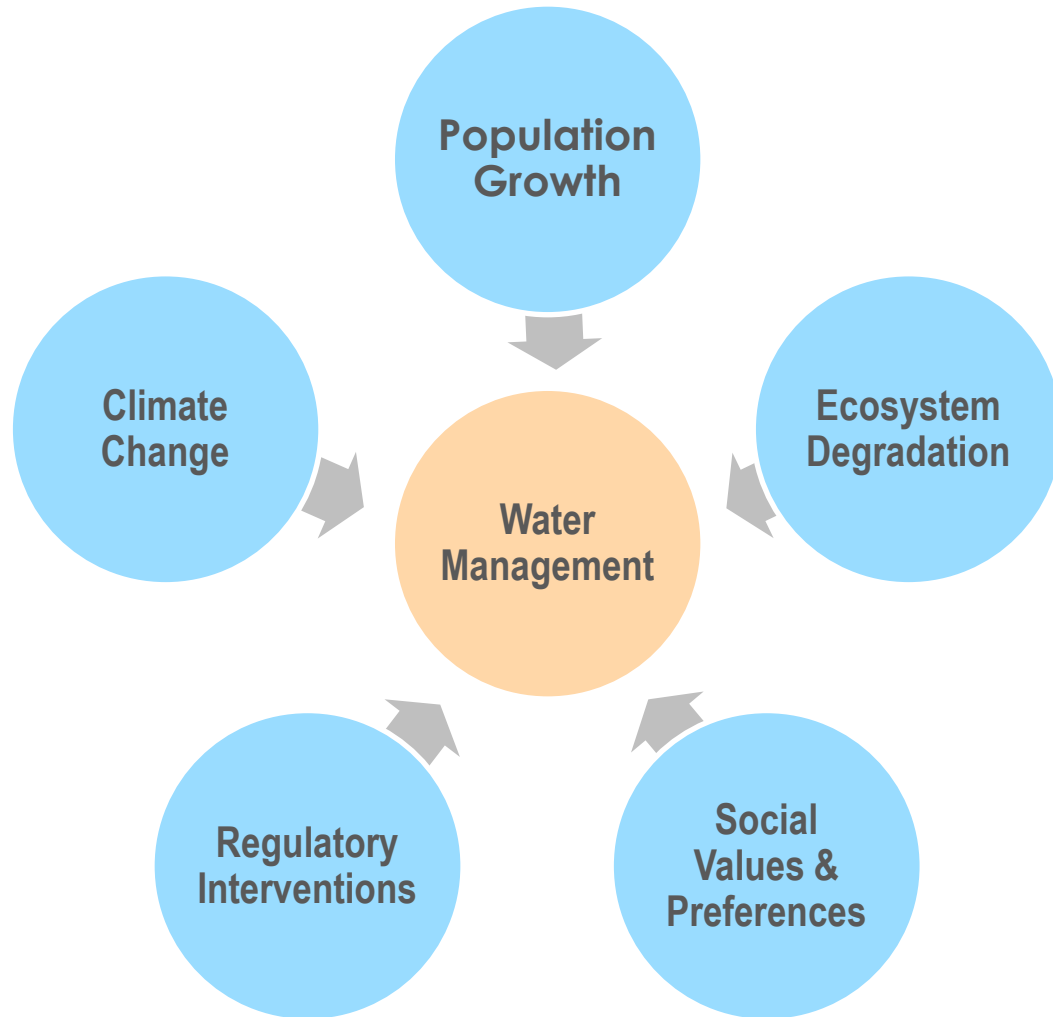
# Potential Effects on Water Supply Availability



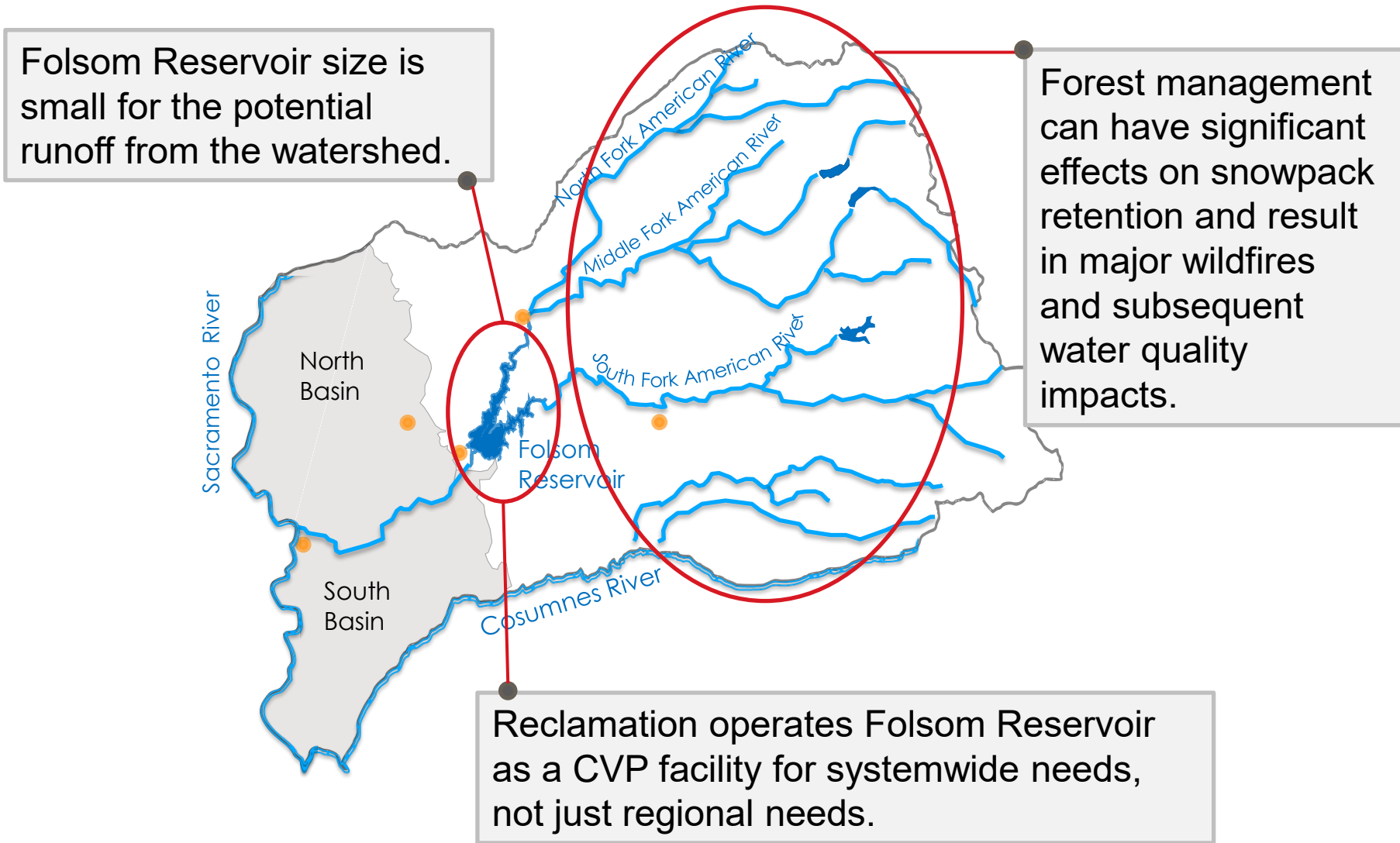
Earlier runoff would:

- **increase the chance of spills** from Folsom reservoir during flood season.
- **reduce water supply** available during summer and fall for M&I, ecosystem, hydropower, irrigation, recreation, etc.

# Regional Water Management Stressors



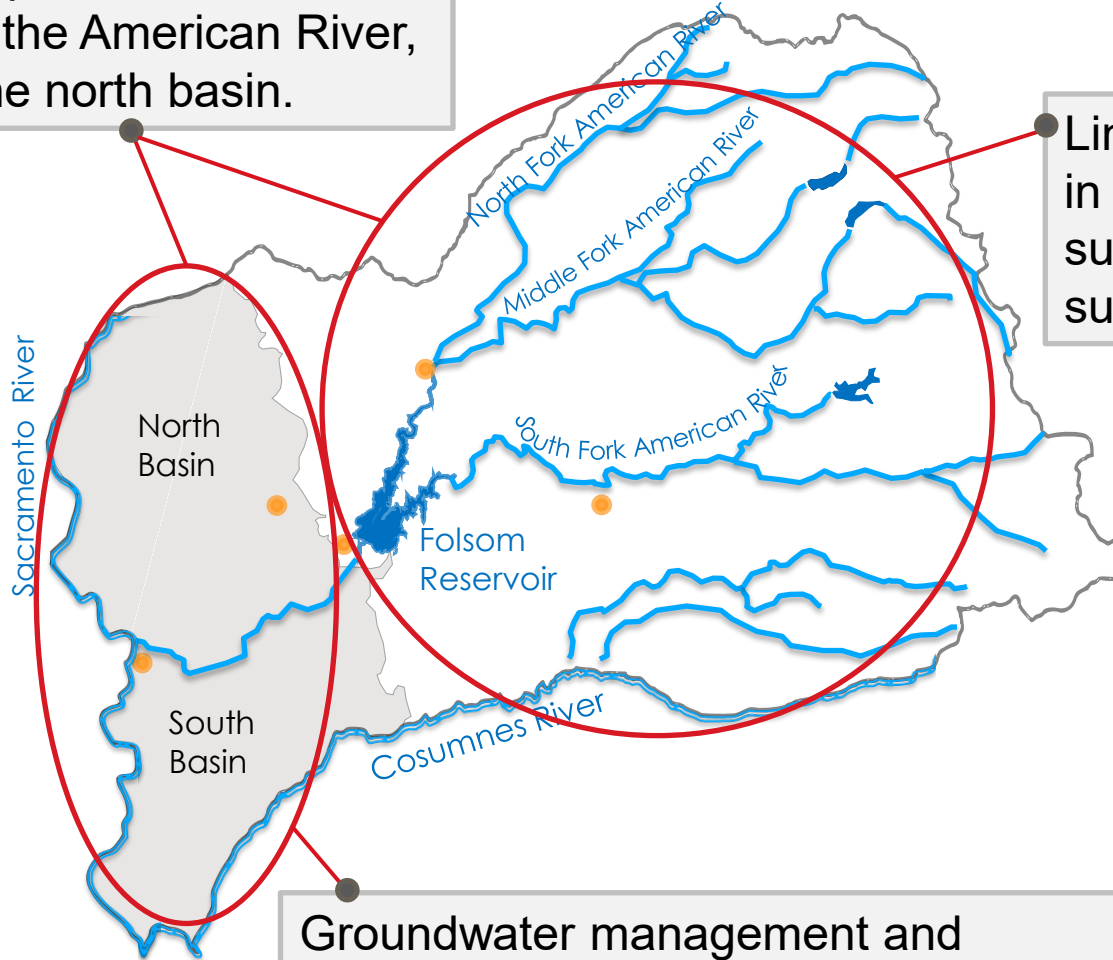
# Key Regional Water Vulnerabilities



# Key Regional Water Vulnerabilities

Basin-wide water demands heavily depend on supplies from Folsom Reservoir and the American River, especially in the north basin.

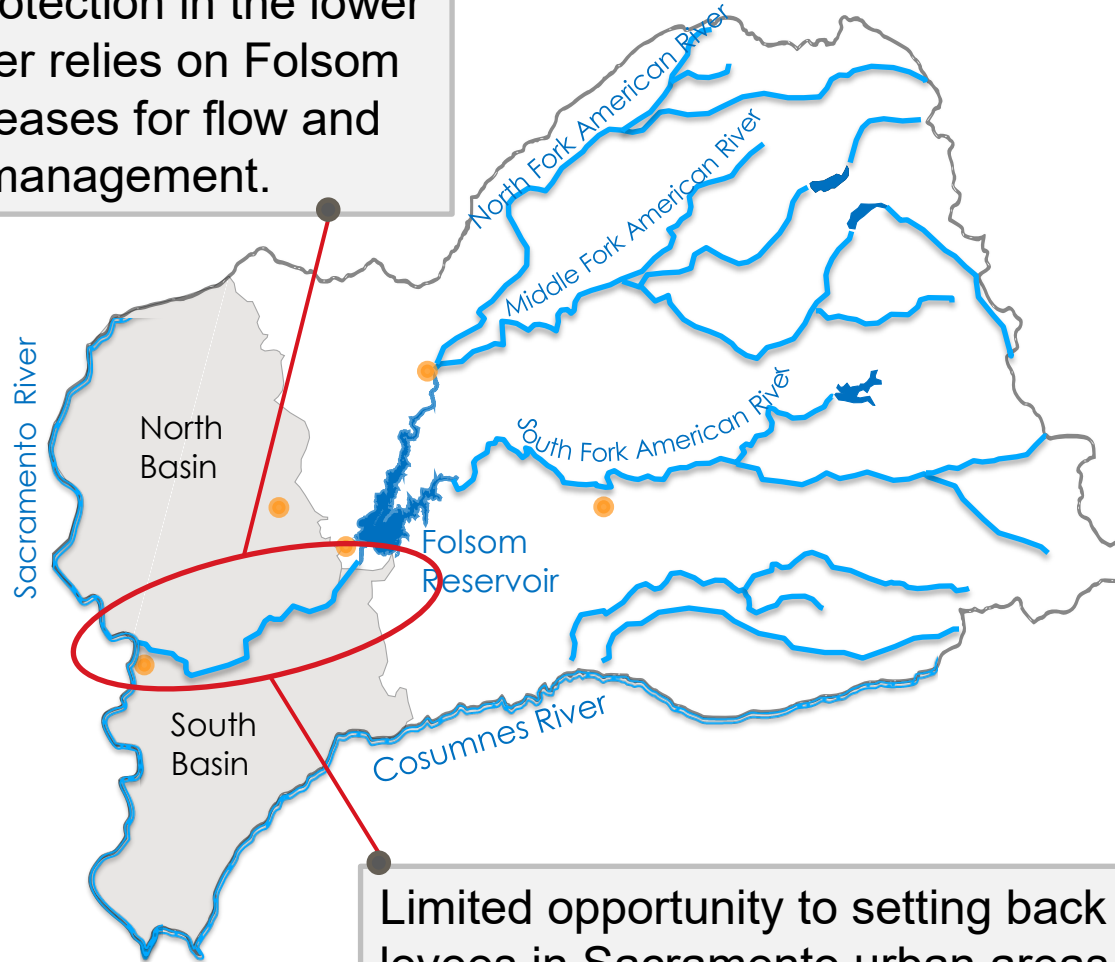
Limited groundwater in the foothills as a supplemental water supply source.



Groundwater management and overdraft correction relies on available surface water from Folsom Reservoir and the American River.

# Key Regional Water Vulnerabilities

Ecosystem protection in the lower American River relies on Folsom Reservoir releases for flow and temperature management.



Limited opportunity to setting back levees in Sacramento urban areas to withstand increasing volume of floods in the future.



American River Basin Study

**Addressing Regional  
Water Management  
Vulnerabilities**

# Adaptation Formulation Approach

## Identify Adaptation Measures

Improve Demand Management

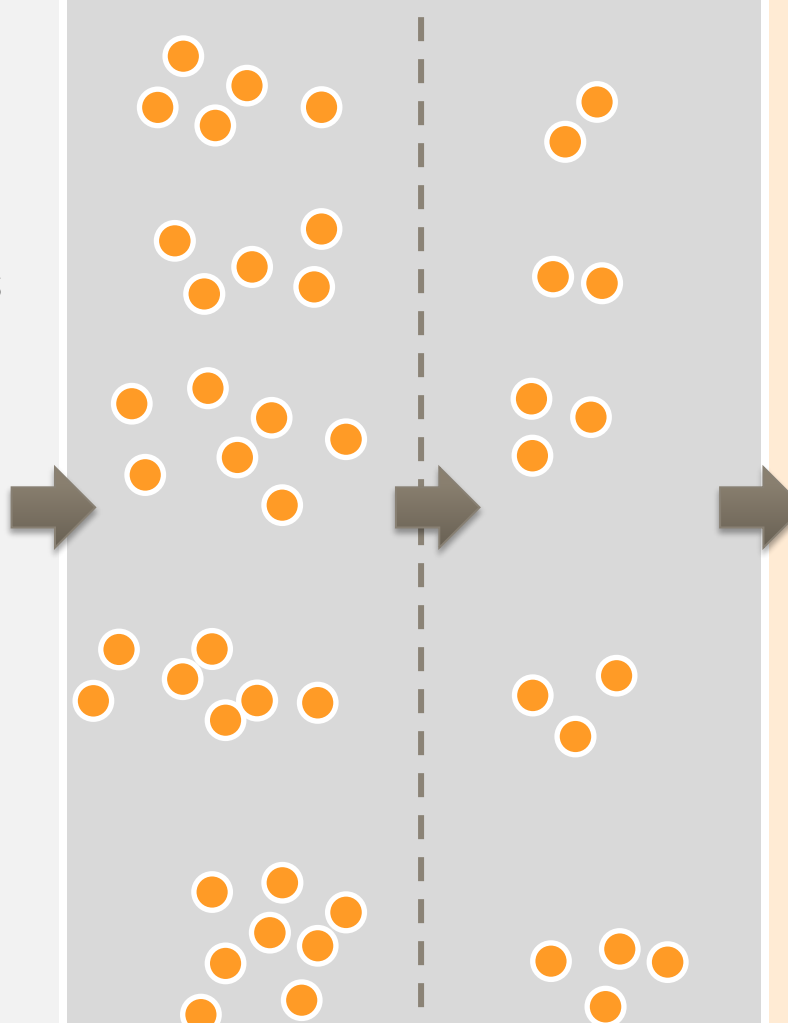
Diversify Water Supplies

Improve Operational Flexibility

Improve Resource Stewardship

Secure Institutional Agreements to Enable Flexibility

## Screen Initial Adaptations



## Develop Adaptation Portfolios



# Adaptations Measures (Management Actions)

- Specific strategy, action, or tactic that contributes to addressing vulnerabilities or alleviating climate change impacts.
- May range from nonstructural potential policy or institutional changes to operational or structural projects.
- May address one or more vulnerabilities.
- May be location specific and vary in level of detail.
- May be combined to form broader sets of portfolios.

# Screening Criteria

- A. Relevancy to Vulnerability Pathways
- B. Technical Feasibility
- C. Measurable Quantity of Yield
- D. Long-term Viability
- E. Nexus to Reclamation/ Federal Interest
- F. Local Support for Implementation

# Adaptation Portfolios

- Portfolios are **theme-based** and reflect project/action concepts that are **locally supported**
  - Demonstrate the likely range of benefits
  - Does not constrain the subsequent project-specific formulation
  - Can be developed/implemented by an individual agency or a group of agencies, as appropriate.

# Adaptation Portfolios

- Every portfolio provides **mutual benefits for the region and Reclamation**
  - Reflect existing Federal authority, or
  - Nexus to benefit to Reclamation related to operation of Folsom Reservoir, where possible.

# Adaptation Portfolios

- Portfolios are **representative**, but not enumerative.
  - Each portfolio represents a unique central theme or concept
  - Each unique theme can be combined with other complementary projects/actions.
  - Collectively, should address all identified vulnerabilities



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**Adaptation Measures  
(Management Actions)**  
Breakout Group Discussion

# Next Steps

- Compile, organize, and screen compiled management actions
- Formulate and evaluate adaptation portfolios
- Develop recommendations for long-term regional strategy
- **Next Workshop:** Early 2020
  - Present adaptation portfolios
  - Discuss findings

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