

Item No. 6

UPDATE

Climate Change Mitigation & Adaptation Strategy

State Water Board Meeting
Sacramento, CA
April 3, 2018

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Presentation Roadmap

- Lahontan Region
- Development Process
- Stakeholder Involvement
- Development Steps
- Lessons Learned & Actions Completed, Underway, & Proposed
- Key Considerations

Lahontan Region 6

Lahontan Regional Setting

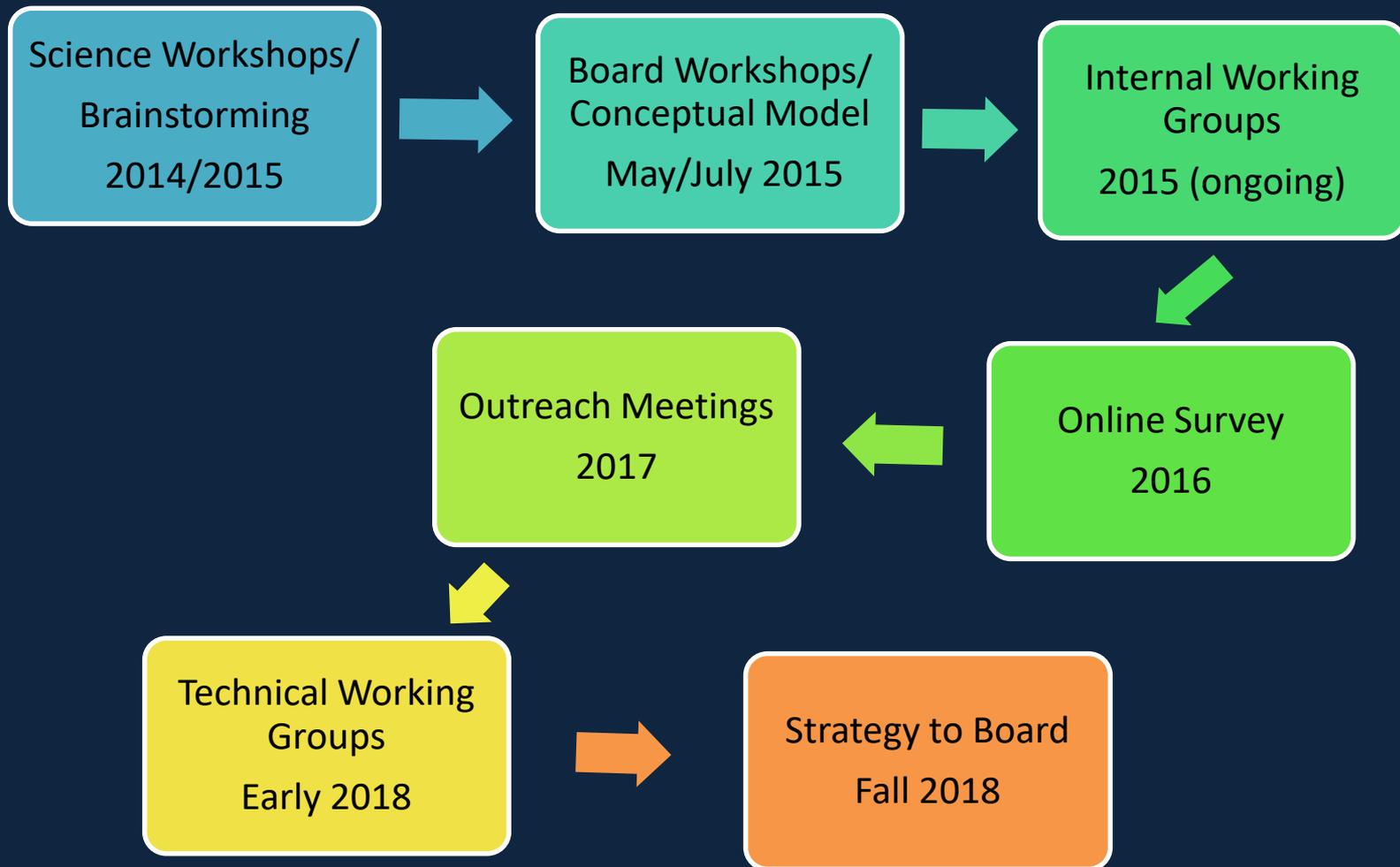
- 33,000 sq. mi. of eastern CA from OR border in north to Mojave Desert in south
- 600 mi. long
- Highest & lowest points in contiguous U.S.

Regional Water Environment

- Waters drain to internal sinks, playas, or inland surface waters
- Great range of precipitation regimes exist between elevation extremes
- 700 lakes & 3,000 mi of streams
- 1,581 sq. mi. of ground water basins
- Two Outstanding National Resource Waters



Climate Change Adaptation – Development Process



Stakeholder Involvement

Science
Workshops/
Brainstorming
100 participants

Online Survey
175 respondents

Outreach Meetings
52 participants

- Lyris List
170 subscribers

- Public
Website

Science/Brainstorming Workshops

The Science

Regionwide

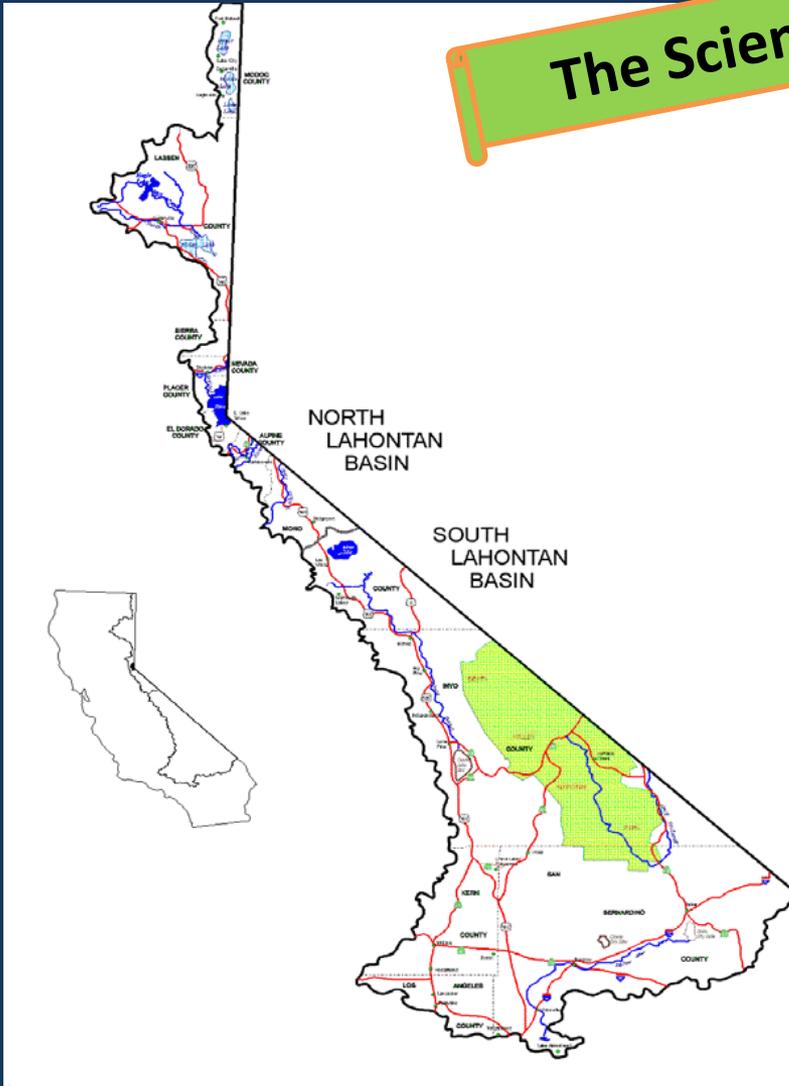
- Climate-induced temperature changes (warmer surface waters, extended dry spells)
- Shifts in amount, timing, and form of precipitation (drought, larger floods)

Northern Region

- More precipitation as rain and less snow
- Earlier runoff from snowpack & less natural water storage

Southern Region

- Hotter and drier
- Reduced groundwater reliability in both quantity & quality



Science/Brainstorming Workshops

Key Brainstorming Ideas

- Protect resources and provide resiliency
- Improve water supply and water quality
- Communicate with public
- Collaborate with partners
- Streamline regulatory process

Policy Shift. Some adaptation actions may require Water Board to re-examine & modify existing prohibitions/policies (grey water use)

Resource Need. Dedicated people may be needed to provide effective level of outreach/education to stakeholders, public, disadvantaged communities, Tribes



Board Workshops

May & July 2015

Action Items

- Develop a strategy
- Recognize existing permits, policies, prohibitions address climate change
- Re-examine, re-work existing tools; fold in other actions
- Identify factors to rank/prioritize actions

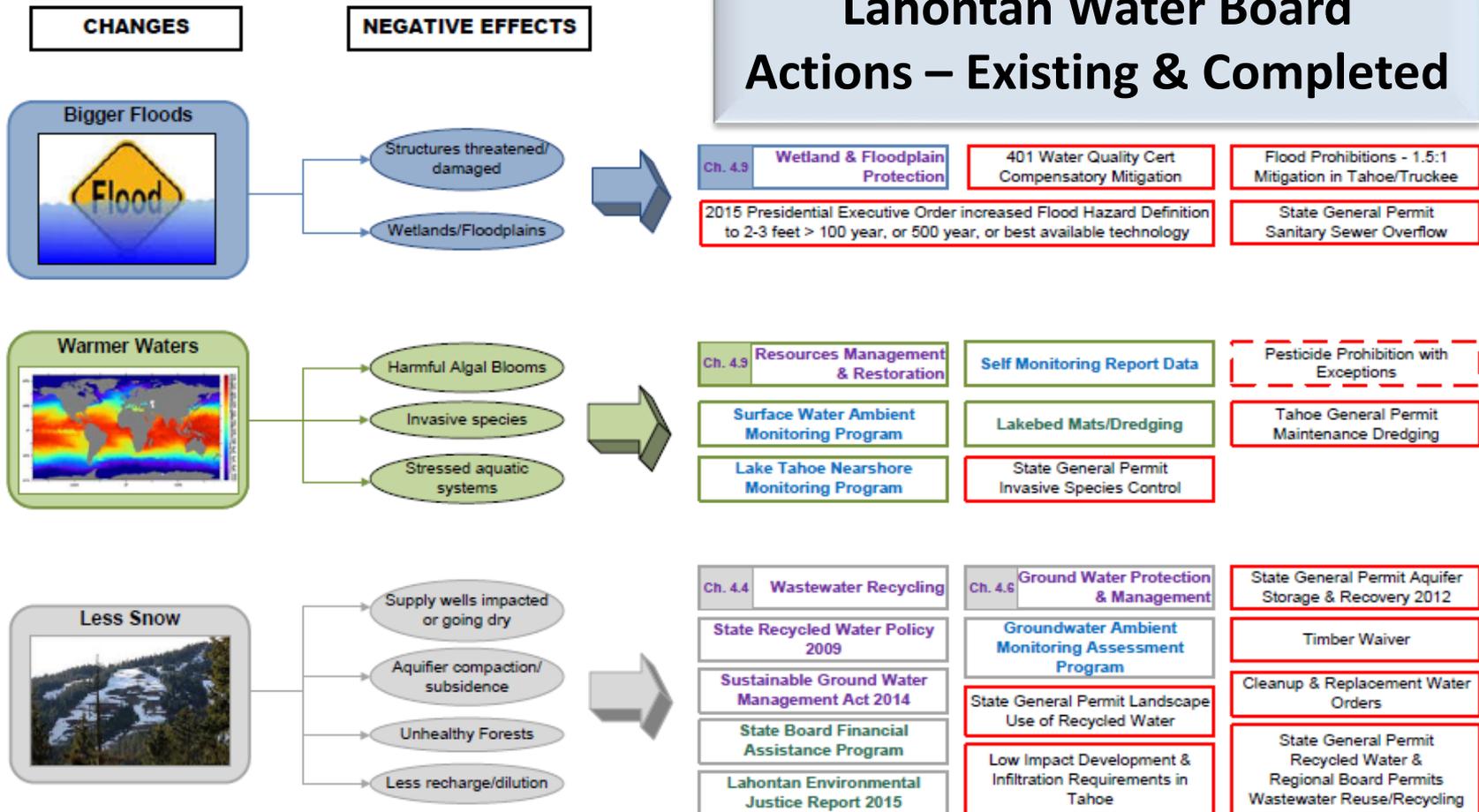
Key Messages

- Expand Tahoe/Truckee disturbance prohibitions regionwide
- Use Tahoe stormwater infiltration concepts to encompass other portions of region
- Re-examine Anti-degradation requirements to allow more groundwater recharge/storage
- Ambient monitoring capturing constituents influenced by climate change. Add more AIS/HAB and monitor biological integrity
- State Board should assist by securing funding to support adaptation strategies

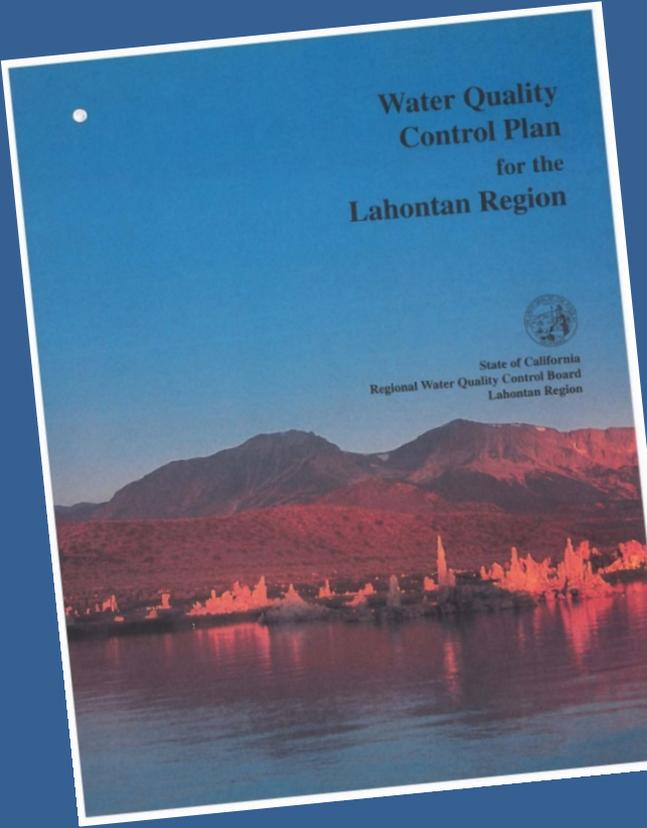


Conceptual Model

Lahontan Water Board Actions – Existing & Completed



Lahontan Water Board Actions – Developing & Underway



Water Quality Control Plan for the Lahontan Region

State of California
Regional Water Quality Control Board
Lahontan Region

Permitting & Basin Planning

Dairy
General Permit

LADWP Maintenance
Activities
General Permit

Federal Lands
General Permit

Monitoring

Harmful Algal Bloom
Response and
Regional Workshops

Bioassessments

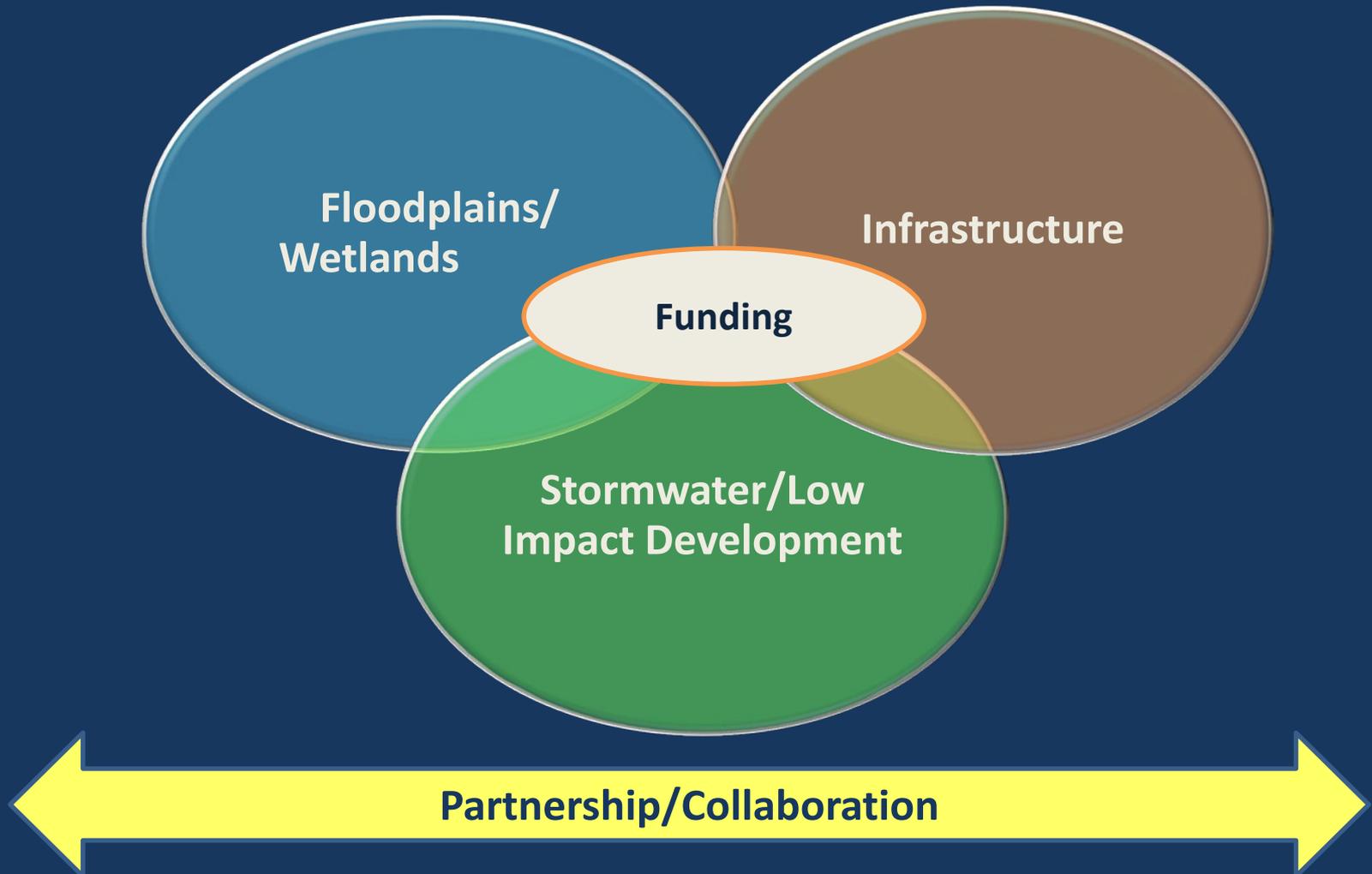
Lake Tahoe Nearshore
Study

Groundwater Basin Protection

Salt and Nutrient
Management Plans

Mojave Water
Quality Objectives

Internal Working Groups



Internal Working Groups

Deliverables – Completed and Underway



Develop, Launch, and Interpret Survey
Maintain Webpage

Identify and support key ongoing, established efforts being led by others

Identify stakeholders to engage with during Technical Working Groups

Establish criteria to prioritize actions (geographically broad effect, multi-benefit, fulfills Water Board policy, ease of development/implementation, resources)

Disseminate funding opportunities for adaptation and resiliency projects

Online Survey – What We Asked & What We Heard

Broad spectrum of respondents

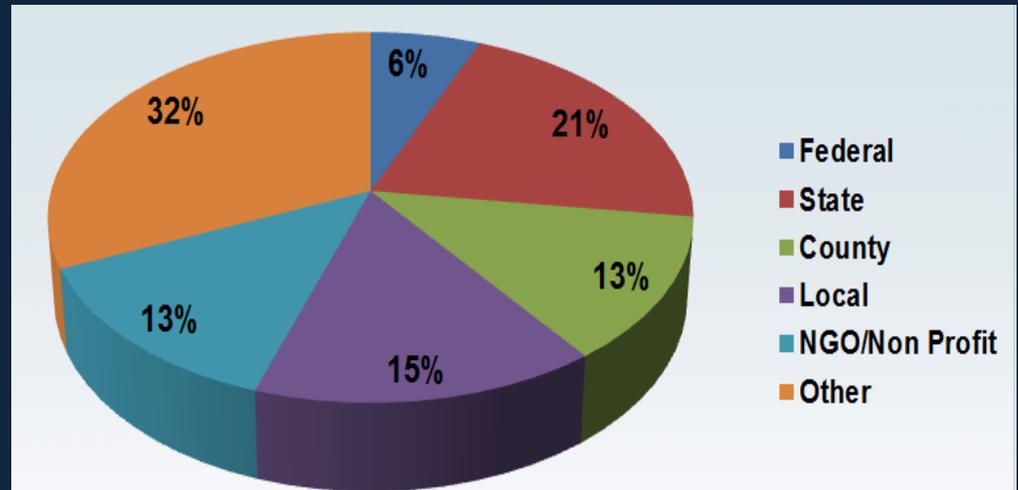
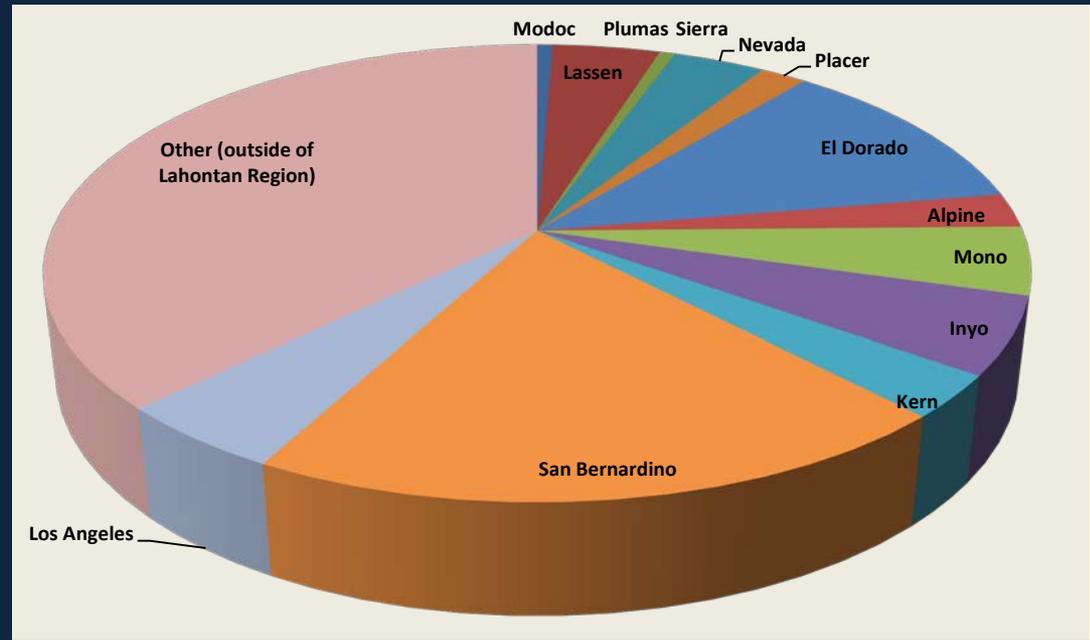
Ongoing and planned efforts

- Water Conservation/Outreach
- Groundwater Monitoring
- Low Impact Development (LID)
- Aquatic Protection Programs
- Infrastructure Risk Assessments

Challenges

- Cost/Economics
- Water Rights
- State Regulations

Substantial Interest in Continued Participation



Online Survey

What We Learned



Need for financial support to effect change

Efforts underway that Water Board could partner with & leverage

Level of support or opposition for key action may indicate ease and success of implementing proposed action

Broad goals (protect wetlands and infrastructure) highly supported but strategies (increased mitigation ratios, prohibitions, additional requirements on infrastructure owners) to achieve these goals were less supported

Tools being used by others to build their adaptation plans can be used to maximize our efficiency

Outreach Meetings



Overarching Goals

- Protect Infrastructure & Critical Recharge Areas
- Restore & Protect Wetlands, Floodplains, Headwaters
- Increase Stormwater Treatment & Infiltration/ Low Impact Development

Partnership/Collaboration

Outreach Meetings/ Sept – Oct 2017

Supported Goals

Regionwide

- Infrastructure Protection



Central and Northern Region

- Protection & Restoration of Headwaters



Southern Region

- Storm Water
Treatment & Infiltration



Outreach Meetings

Key Messages



Adapting to climate change impacts is a great unifier
Balance and harmonize different interests

Account for resource limitations, Concentrate our effort on select actions,
Support outside efforts

Realize approaches for stormwater treatment and infiltration need to be tailored
for local, sub-regional conditions (snow-dominated areas, high-desert)

Optimize products generated by others to help develop our strategies

Embed technical support and funding into proposed actions

Outreach Meetings

Proposed Actions

Promote protection and management of natural and working lands to optimize benefits and landscape resiliency

Establish criteria to identify vulnerable areas and critical recharge areas
Modify land-use policies to restrict development and types of land-uses allowed

Streamline permitting, consider easing turbidity requirements to increase the pace and scale of restoration efforts

Promote stormwater infiltration and LID practices through outreach first, then permit requirements

Explore innovative approaches (Regional Municipal Stormwater Treatment Facility, Nutrient Pollutant Trading, Inter-basin sales/leases for water transfers)

Technical Working Groups – Focus Areas & Actions



Infrastructure

Vulnerability/Risk Assessments and Adaptation Plans for Infrastructure at risk

Expand prohibitions to protect sensitive environments



Wetlands/Floodplains

Streamline permitting for meadow restoration

Develop criteria for grazing management on public and private lands



Stormwater/LID

Revise permits to maximize stormwater treatment & infiltration

LID Outreach & Incorporate LID practices into permits

Partnership & Collaboration

WWTPs, GMAs, Local Governments, RCRC

Sierra Meadows Partnership, Sierra Water Workgroup

ARCCA, IRWM, RCD, RCRC

Elements of the Strategy

Effects

- Current and anticipated impacts to water quality and water resources

Goals

- Goal: Protect Infrastructure & Critical Recharge Areas
- Goal: Protect & Restore Floodplains and Wetlands
- Goal: Increase Stormwater Treatment & Reuse/ LID
- Leverage Efforts by Others; Provide Support & Partner

Actions

- Within Water Board sphere of regulatory authority and permitting tools
- Partner with efforts underway or planned to fill gaps

Prioritization Process

- Threat to water quality
- Cost, Political Controversy, Ease of Change, Short or Long-term Effect, Staff Resources, Magnitude of Gain

Schedule

- Consider/redefine existing priorities
- Triennial Review List

Key Considerations



Heavy lift, moving schedule, limited resources
Evolving process

Expand existing localized concepts regionwide

Engage with stakeholders & regulated community so actions align

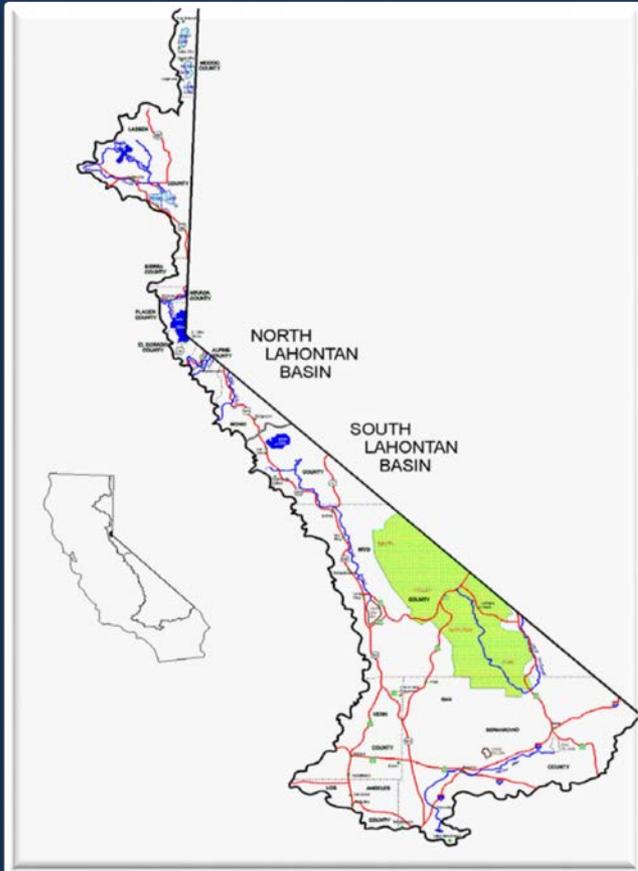
Partner with efforts underway or planned where we have less authority/jurisdiction

Encourage Public Input & Provide Transparency

Shift annual priorities/workplans as we realize adaptation concepts

Realize climate change adaptation may require some departure from traditional ways of thinking & conventional solutions

Work with State Board to identify policies, regulations, & funding to facilitate adaptation





If you want to go fast, go alone.
If you want to go far,
GO TOGETHER.