

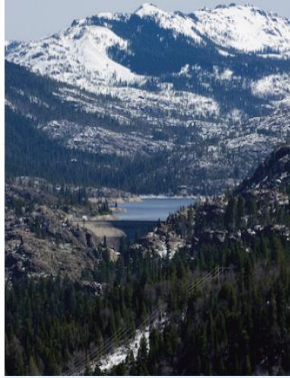
# California Water Plan

## *Planning for Effective Water Policy & Management*

*Prepared for:*

**California Water and Environmental Modeling Forum**

April 13, 2016



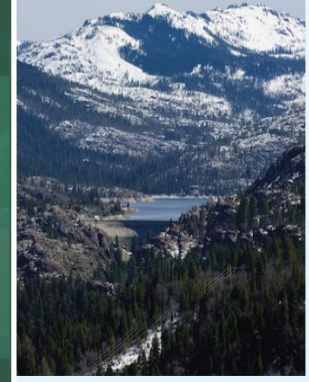
# Topics

1. Building on Water Plan Update 2013
2. Goals of Water Plan 2018
3. Next Generation of Water Planning
4. Water Management Effectiveness Framework
5. Path Forward



# 1.

# Building on Water Plan Update 2013



# Three Themes of Update 2013

- Commit to Integrated Water Management
- Strengthen Government Agency Alignment
- Invest in Innovation and Infrastructure

## **Integrated Water Management**

System flexibility and resiliency  
Advocacy from implementers and financiers  
Delivery of benefits using fewer resources

## **Government Agency Alignment**

Clarification of state roles  
Reduction in implementation time and costs  
Efficient achievement of multiple objectives

## **Investment in Innovation and Infrastructure**

Stable and strategic funding  
Priority-driven funding decisions  
Equitable and innovative finance strategies

# Content of Water Plan Update 2013

- Roadmap for Action  
17 Objectives & 350+ Actions
- 30 Resource Management Strategies
- 12 Regional Reports
- Water Portfolios & Balances
- Future Scenarios & Responses
- Reference & Technical Guides

# Update 2013 Objectives & Related Actions

- CWP includes 17 objectives and 300+ Related Actions and sub-actions
  - Objective 1 – Strengthen IRWM
  - Objective 2 – Use and Reuse Water More Efficiently
  - Objective 3 – Expand Conjunctive Management of Multiple Supplies
  - Objective 4 – Protect and Restore Surface Water and Groundwater Quality
  - Objective 5 – Practice Environmental Stewardship
  - Objective 6 – Improve Flood Management Using an IWM Approach
  - Objective 7 – Manage the Delta to Achieve the Coequal Goals for California
  - Objective 8 – Prepare Prevention, Response, and Recovery Plans
  - Objective 9 – Reduce the Carbon Footprint of Water Systems and Water Uses
  - Objective 10 – Improve Data, Analysis, and Decision-Support Tools
  - Objective 11 – Invest in Water Technology and Science
  - Objective 12 – Strengthen Tribal/State Relations and Natural Resources Management
  - Objective 13 – Ensure Equitable Distribution of Benefits
  - Objective 14 – Protect and Enhance Public Access to the State’s Waterways, Lakes, and Beaches
  - Objective 15 - Strengthen Alignment of Land Use Planning and IWM
  - Objective 16 - Strengthen Alignment of Government Processes and Tools
  - Objective 17 - Improve IWM Finance Strategy and Investments



# 30 Resource Management Strategies

## *Tools for Diversifying Regional Water Portfolios*

### **Reduce Water Demand**

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

### **Improve Operational Efficiency & Transfers**

- Conveyance – Delta
- Conveyance – Regional / Local
- System Reoperation
- Water Transfers

### **Increase Water Supply**

- Conjunctive Management & Groundwater Storage
- Desalination (Brackish & Sea Water)
- Precipitation Enhancement
- Municipal Recycled Water
- Surface Storage – CALFED
- Surface Storage – Regional / Local

### **Improve Flood Management**

- Flood Management

\*\* New for Update 2013

### **Improve Water Quality**

- Drinking Water Treatment & Distribution
- Groundwater / Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Salt & Salinity Management
- Urban Stormwater Runoff Management

### **Practice Resource Stewardship**

- Agricultural Land Stewardship
- Ecosystem Restoration
- Forest Management
- Land Use Planning & Management
- Recharge Area Protection
- Sediment Management \*\*
- Watershed Management

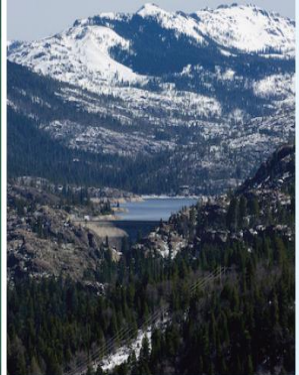
### **People & Water**

- Economic Incentives  
(Loans, Grants & Water Pricing)
- Outreach & Engagement \*\*
- Water & Culture \*\*
- Water-Dependent Recreation



# 2.

## Goals of Water Plan 2018





# Key Goals of Update 2018

## 1) Reframe policy conversations

- Recognize system complexities
- Identify clear and explicit Intended Outcomes
- Prioritize actions based on Intended Outcomes
- Strive toward a resilient, dynamic balance between societal values
- Plan and manage at a river basin scale



# Key Goals of Update 2018

## 2) Increase effectiveness of policy and management

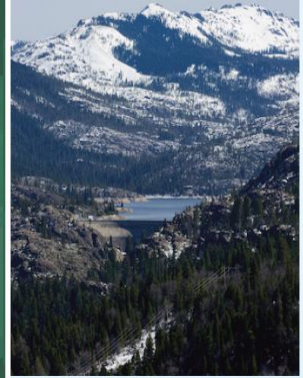
- Refine and apply outcome based planning framework
- Water Plan as an integrating and engagement process
- Deliver policy support in a more timely and targeted manner



# 3.

## Water Plan Update 2018

*Next Generation of Water Planning*



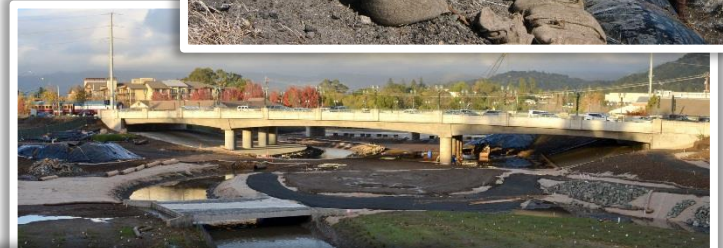
# Reframe Planning to Better Inform Policy

- 1) Ensuring Reliable Water Supply for all Californians
- 2) Building Capacity for Regional Sustainability
- 3) Managing Floodwaters while Protecting the Ecosystem
- 4) Taking Action to Reduce Residual Risk
- 5) Planning Priorities and Investments for a Sustainable Future

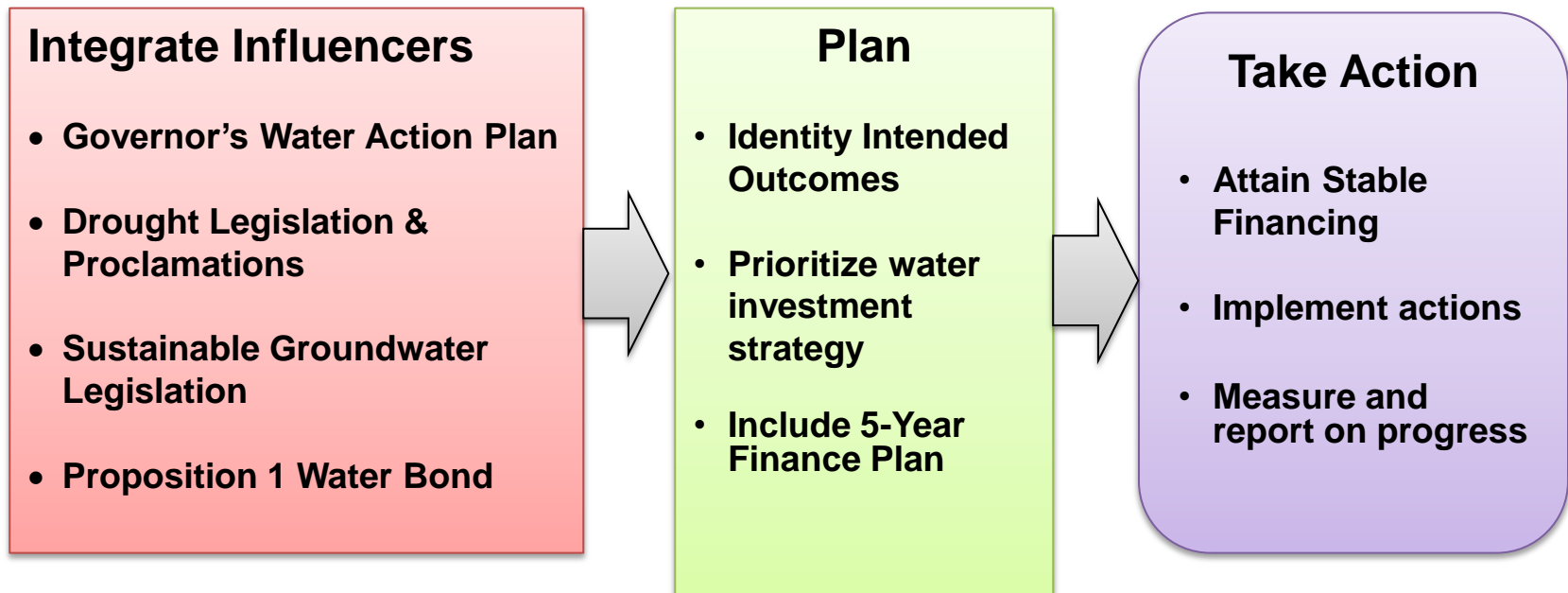


# Sustainability: Ongoing, resilient, and dynamic balance between the 4 societal goals

- ⊕ Reasonable public health and safety
- 💰 Economic stability
- 🌊 Ecosystem vitality
- 🧑 Opportunities for other enriching experiences



# Reframe Planning to Better Inform Policy



# Key Influencers (Partial List)

1. Governor's Water Action Plan
2. Sustainable Groundwater Management Act
3. Drought
4. Proposition 1
5. Flood Future Report
6. Flood Investment Strategy



# Integrating Key Influencers

## Water Action Plan's 10 Essential Actions

Make conservation a California way of life

Invest in integrated water management and increase regional self-reliance

Achieve the coequal goals for the Delta

Protect and restore important ecosystems

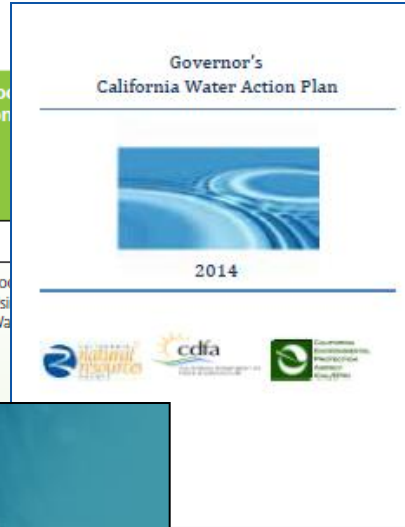
Manage and prepare for dry periods

Expand water storage capacity

Provide safe drinking water and secure wastewater systems to all communities

Increase flood protection

### How the 10 Essential Actions Are Advanced in Update 2013



<p><b>Update 2013 Objectives (Volume 1, Chapter 8)</b></p> <p><i>See foldout 11A-11B for an explanation of all Update 2013 Objectives</i></p>	<p>#2 – Use and Reuse Water More Efficiently</p>	<p>#1 – Strengthen Integrated Regional Water Management Planning</p> <p>#10 – Improve Data, Analysis, and Decision-Support Tools</p> <p>#17 – Improve Integrated Water Management Finance Strategy and Investments</p>	<p>#7 – Manage the Delta to Achieve the Coequal Goals for California</p>	<p>#4 – Protect and Restore Surface Water and Groundwater Quality</p> <p>#5 – Practice Environmental Stewardship</p> <p>#9 – Reduce the Carbon Footprint of Water Systems and Water Uses</p> <p>#14 – Public Access to Waterways, Lakes, and Beaches</p>	<p>#2 – Use and Reuse Water More Efficiently</p> <p>#3 – Expand Conjunctive Management of Multiple Supplies (includes groundwater and surface storage)</p> <p>#7 – Manage the Delta to Achieve the Coequal Goals for California</p> <p>#8 – Prepare Prevention, Response, and Recovery Plans</p>	<p>#3 – Expand Conjunctive Management of Multiple Supplies (includes groundwater and surface storage)</p>	<p>#4 – Protect and Restore Surface Water and Groundwater Quality</p> <p>#12 – Strengthen Tribal/State relations and Natural Resources Management</p> <p>#13 – Equitable Distribution of Benefits</p>	<p>#6 – Improve Flood Management Using an Integrated Water Management Approach</p>
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<p><b>Resource Management Strategies (Volume 3)</b></p> <ul style="list-style-type: none"> <li>Ag Water Use Efficiency</li> <li>Urban Water Use Efficiency</li> <li>Recycled Municipal Water</li> <li>Outreach and Engagement</li> <li>Economic Incentives</li> </ul>	<p>All 30+ RMSs can enhance regional self-reliance, depending on where they are implemented and how the benefits are allocated.</p>	<p>All 30+ RMSs have the potential to help meet Delta coequal goals, depending on where they are implemented and how the benefits are allocated.</p>	<ul style="list-style-type: none"> <li>Six RMSs pertaining to water quality</li> <li>Ag Lands Stewardship</li> <li>Ecosystem Restoration</li> <li>Forest Mgmt.</li> <li>Land Use Planning and Mgmt.</li> <li>Recharge Area Protection</li> <li>Sediment Mgmt.</li> <li>Watershed Mgmt.</li> </ul>	<p>(Partial list)</p> <ul style="list-style-type: none"> <li>Ag Water Use Efficiency</li> <li>Urban Water Use Efficiency</li> <li>Recycled Municipal Water</li> <li>Conjunctive Mgmt. of Surface and Groundwater</li> <li>CALFED/Local/Regional Surface Storage</li> </ul>	<ul style="list-style-type: none"> <li>Conjunctive Mgmt. of Surface and Groundwater</li> <li>CALFED Surface Storage</li> <li>Local/Regional Surface Storage</li> <li>System Reoperation</li> </ul>	<p>Nearly all water users can have water to all depend on them and here are all</p>	<p>Delta</p> <p>al</p> <p>ers</p>	<p>Delta</p> <p>al</p> <p>ers</p>
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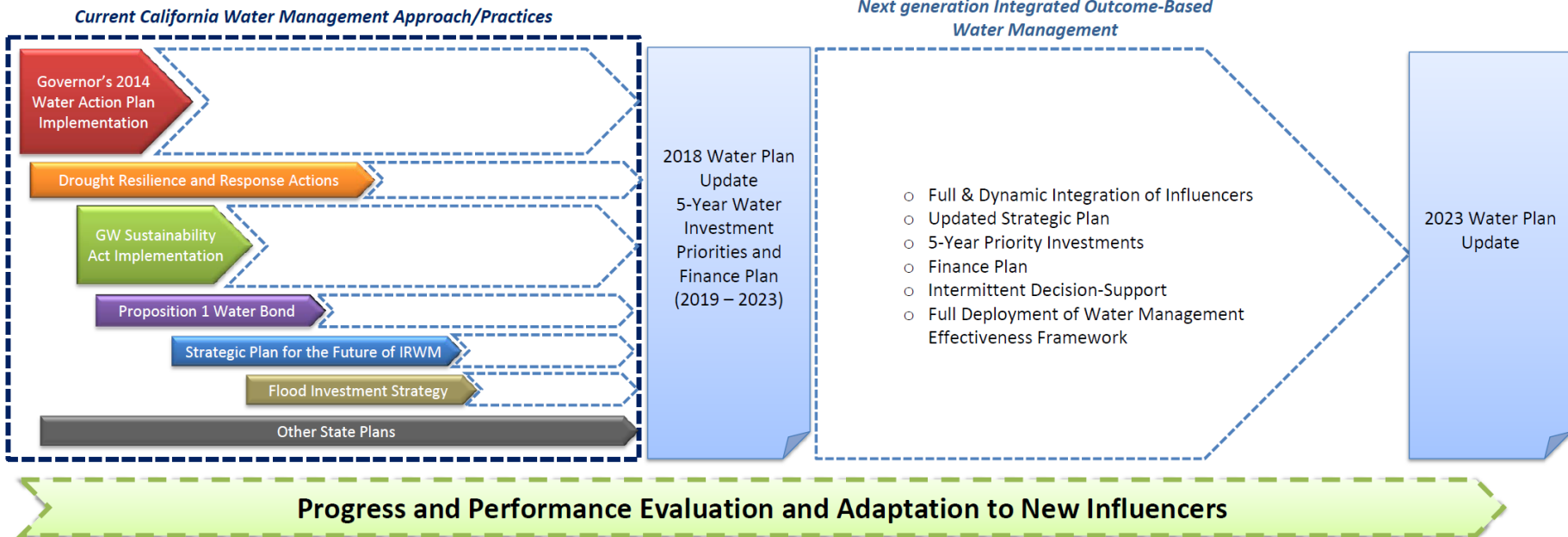
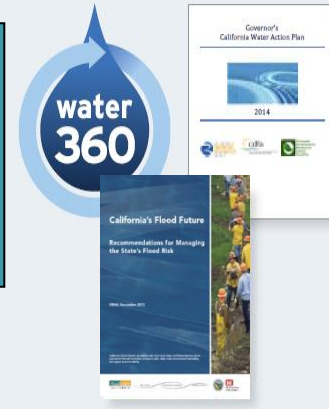


<p><b>Cross-Cutting Objectives (Volume 1, Chapter 8)</b></p> <ul style="list-style-type: none"> <li>#10 – Improve Data, Analysis, and Decision-Support Tools</li> <li>#11 – Invest in Water Technology and Science</li> <li>#12 – Strengthen Tribal/State Relations and Natural Resources Management</li> <li>#13 – Ensure Equitable Distribution of Benefits</li> </ul>	<ul style="list-style-type: none"> <li>#15 – Strengthen Alignment of Land Use Planning and Integrated Water Management</li> <li>#16 – Strengthen Alignment of Government Processes and Tools</li> <li>#17 – Improve Integrated Water Management Finance Strategy and Investments</li> </ul>
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# California Water Plan Update Process

## Integrating Water Management for Increased Effectiveness



# Key Features of Update 2018

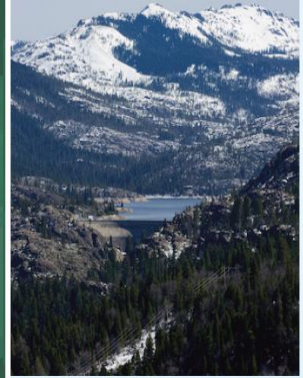
- 1) Vision of Water Sustainability
- 2) Managing for effectiveness
- 3) Water Sustainably Outlook
- 4) Challenges and Potential Disruptors
- 5) Water Management Effectiveness Assessment
- 6) Recommended State Policy and Investment Priorities
- 7) Finance Plan



# 4.

## Water Management Effectiveness Framework

*Dynamically Balancing Societal Values*



# Current Decisions Focused on Actions instead of Outcomes

Fractured, Implicit, and action focused

Crisis oriented with short-term focus

Advocacy

Outside of management process control

External Events

Reactive based on implicit assumptions about cause and effect

Intent  
Intent  
Intent  
Intent  
Intent

ACTIONS

Outcomes

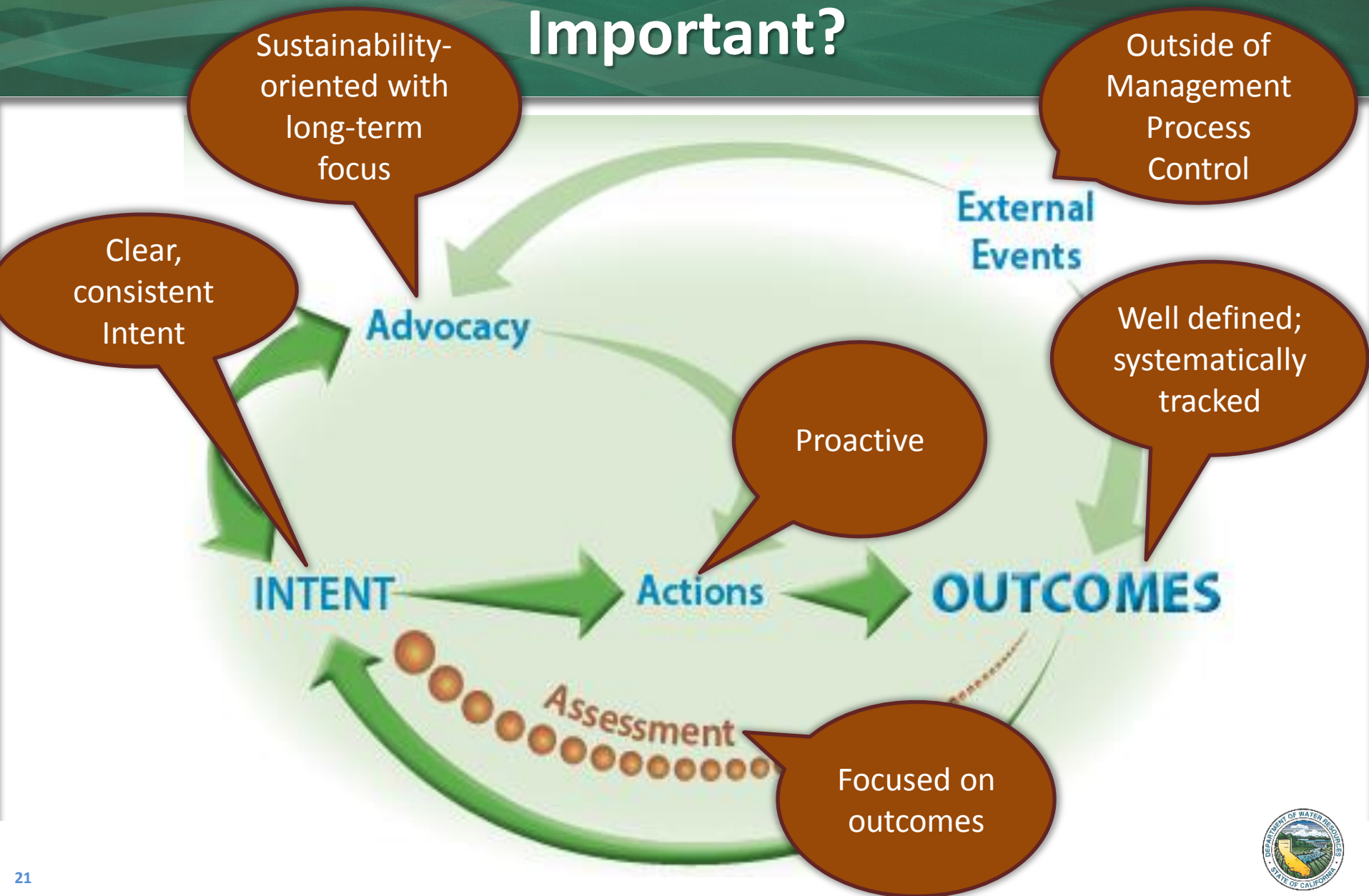
Assessment

Focused on actions taken

Loosely defined; rarely tracked



# Why Is An Outcome-Driven Approach Important?



# Water Management Effectiveness Framework

Elements within the Framework interact and build on each other:

Element 1: Set Societal Intent

Element 2: Appropriate Functional Geographic Delineation

Element 3: Scales of Action

Element 4: Levels of Outcome

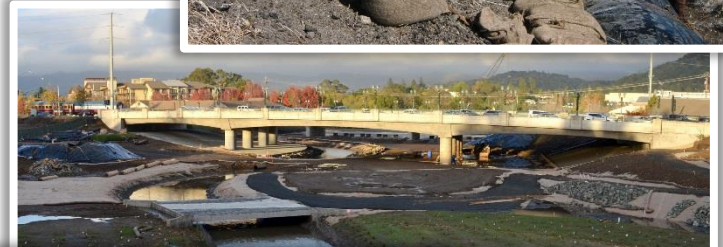
Element 5: Cyclical Learning and Adapting



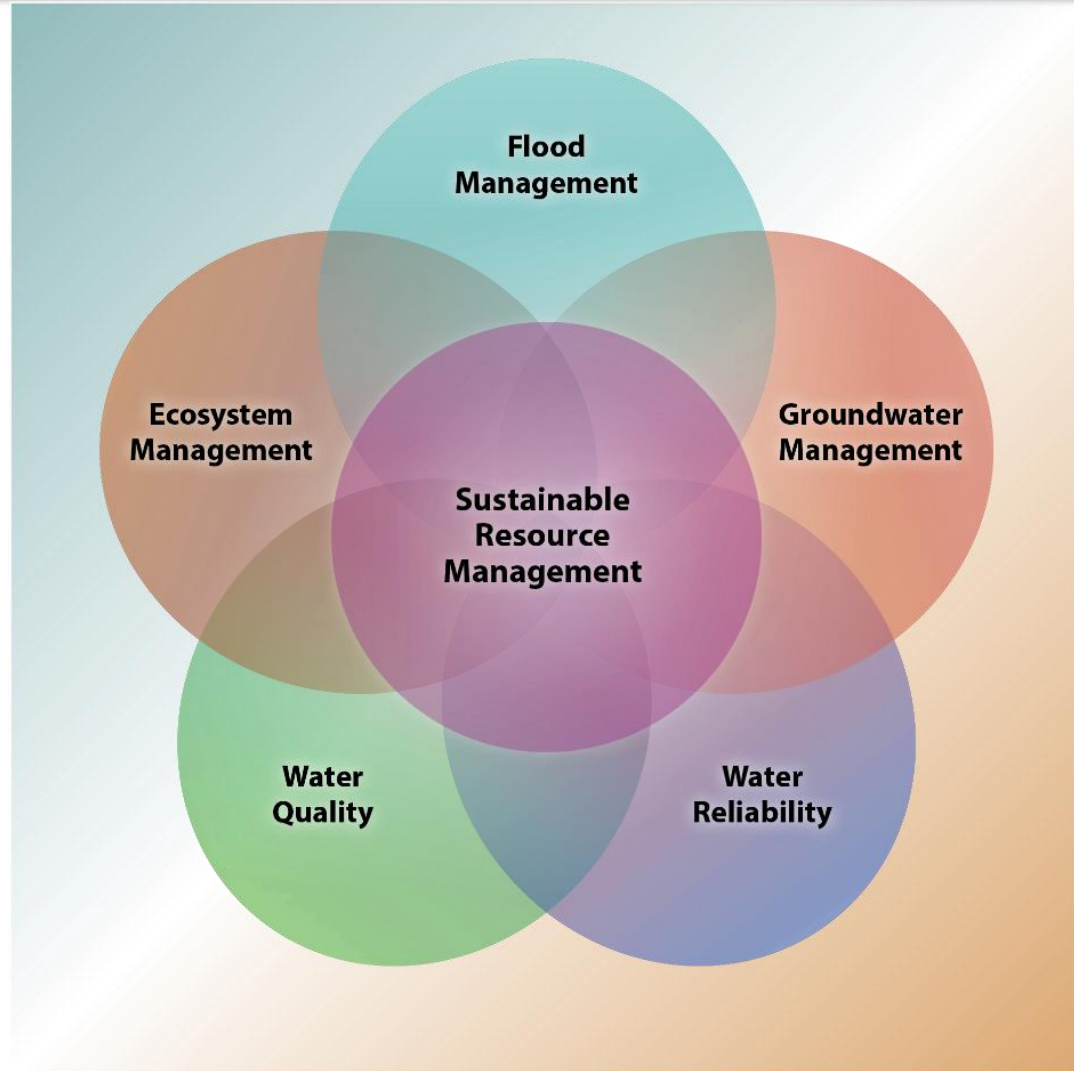
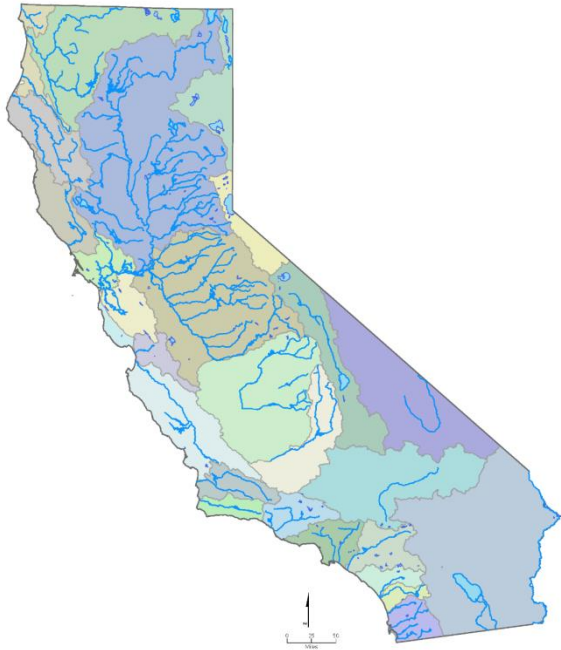
# Element 1: What Society Values

Societal values include:

- ⊕ Reasonable public health and safety
- 💰 Economic stability
- 🐟 Ecosystem vitality
- 🧑 Opportunities for other enriching experiences

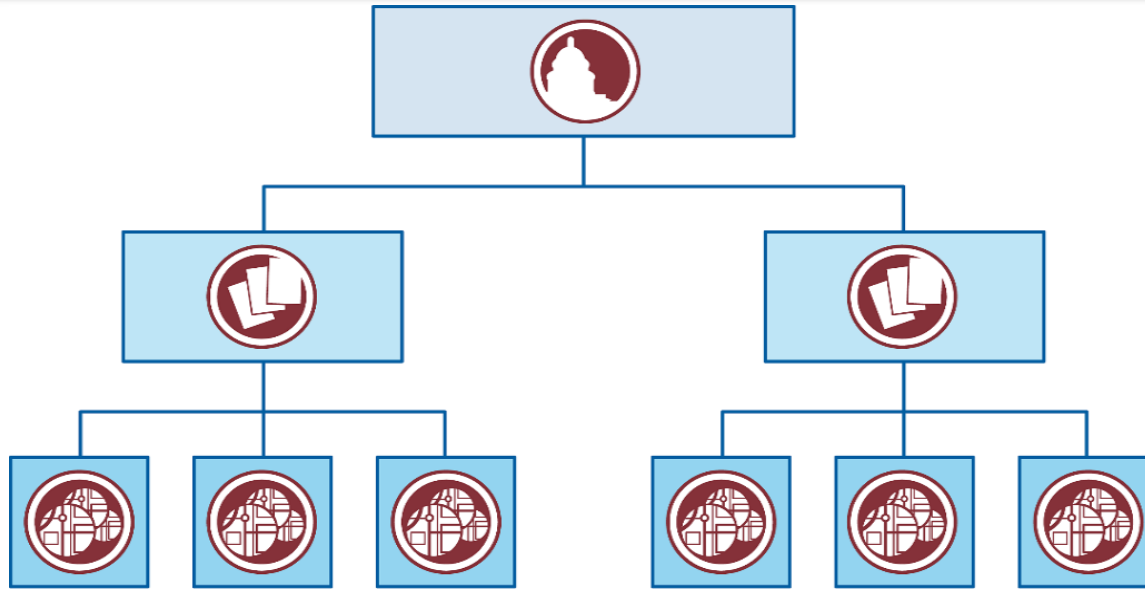


# Element 2: Apply An Appropriate Functional and Geographic Delineation





# Element 3: Scales of Action



**Policy Scale** – Applies societal values to set vision, create laws and institutional authorities, and direct and fund thematic-scale programs.



**Thematic Scale** – Translates policy into real resource management and/or infrastructure changes by identifying and funding plans and/or projects.



**Implementation Scale** – Implements tangible physical, social, or biological changes to land or water resources and infrastructure.



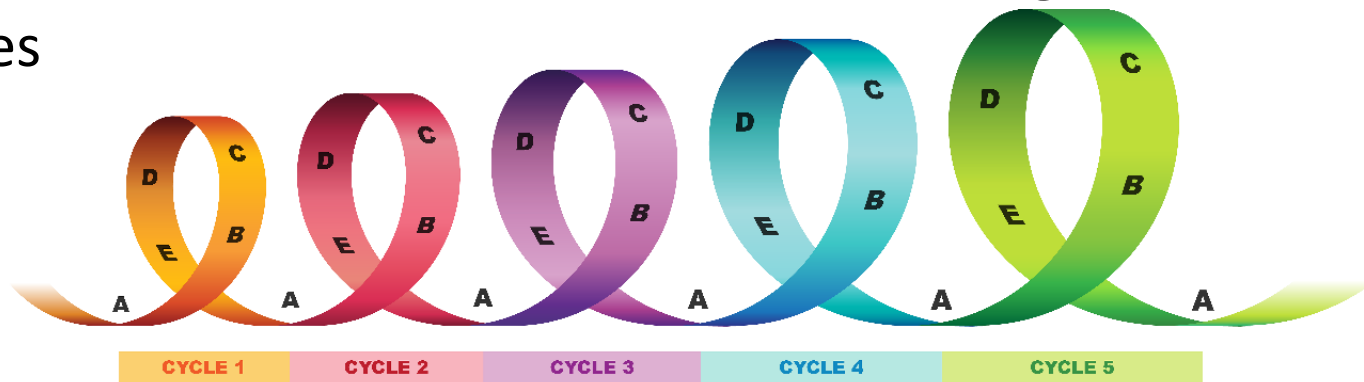
# Element 4: Levels of Outcome

- Degree of Sustainability
- Resource and Societal Benefits
- Physical Assets and Behaviors
- Enabling Conditions



# Element 5: Implementation Cycle

- Step A: Set intended Outcomes
- Step B: Assess effectiveness of previous action against intended outcomes
- Step C: Identify, select, and prioritize actions
- Step D: Organize implementation of intended actions
- Step E: Observe and evaluate actual outcomes against intended outcomes

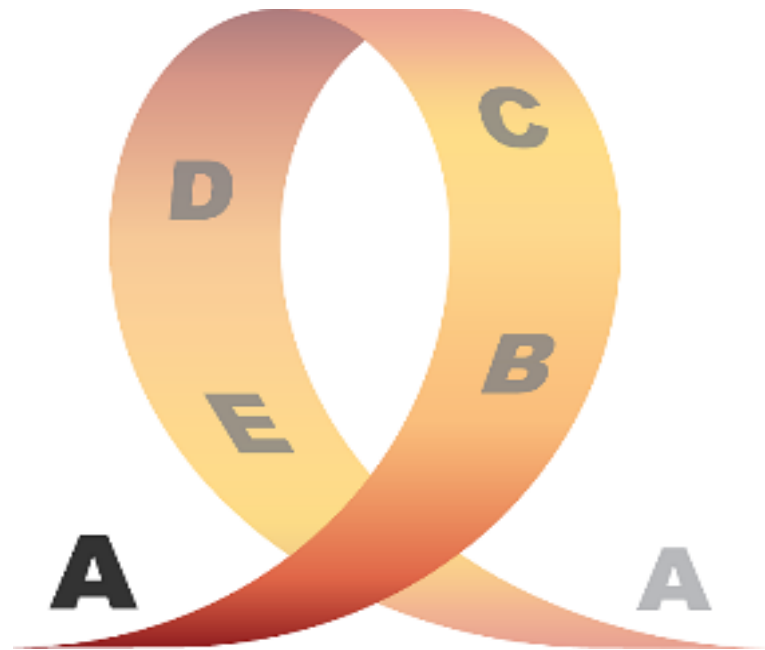


KEY: **A** – Set Intended Outcomes    **B** – Assess Effectiveness of Previous Action    **C** – Identify, Select, and Prioritize Actions    **D** – Organize and Implement Actions    **E** – Observe and Evaluate Actual Outcomes



# Using the Implementation Cycle: Step A – Set Intended Outcomes

- Define intended outcomes at each level
- Set intended outcomes first at Level 4 then move down to Level 3, then to Level 2, and finally to Level 1



# Setting Level 4 Intended Outcomes: Sustainability

**Sustainability** is defined as an ongoing, resilient, and dynamic balance between the 4 societal goals



# Setting Level 3 Intended Outcomes: Resource and Societal Benefits

Where benefits are defined and progress measured toward achieving Level 4 outcomes.

- **Natural Resources Examples:**

- Improved ability to recover from drought and flood
- Increased acres of habitat



- **Society Examples:**

- Fewer people and reduced property exposed to flooding
- Improved or stable water supply and water quality



# Setting Level 2 Intended Outcomes: Changed Physical Assets and Behaviors

- **Physical Assets:** Where structures, land, and other assets occur. Examples:
  - Construction of a specific length of levee to a specific standard
  - Purchase of a specific amount of land acreage for setbacks, easements, etc.
- **Behavior:** Where **people** change behaviors. Examples:
  - Consideration of flood risk in land use zoning decisions
  - Commitment to ongoing research and tracking of results
  - Appropriation of funding for tracking and reporting



# Setting Level 1 Intended Outcomes: Enabling Conditions

Enabling Conditions Are the Foundational  
Examples:

- Necessary legislation exists
- Necessary financing is authorized
- Funding and resources provided to monitor and track progress against outcomes
- Specific, measureable objectives are developed



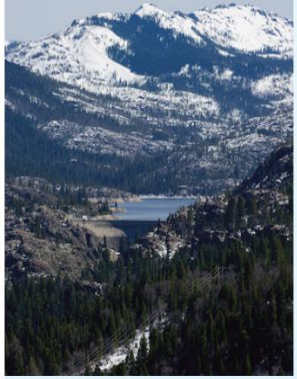


# Step B: Assessing Effectiveness of Previous Actions against Intended Outcomes

- Have clear and specific intended outcomes for effective water management been identified and defined?
- Have each of the intended outcomes been achieved?
- Was your action based upon a solid foundation of conditions that enable effective and adaptive management?



# 5. Path Forward



# Path Forward: What California Needs to Do

- Identify intent and adopt societal values
- Move from action-based to outcome-driven approach
- Focus on long-term measurable outcomes and adapt over time
- Identify stable and ongoing funding sources
- Track and measure actual results against intended outcomes
- Invest in policies, programs, and projects that support societal values



# Path Forward: Setting Expectations

## 2018 Water Plan

- Refine Water Management Effectiveness Framework
- Apply framework across key influencers/programs
- Conduct qualitative effectiveness assessment

## 2023 Water Plan

- Apply framework across all influencers/programs
- Conduct qualitative & quantitative effectiveness assessments



# Path Forward: Water Plan Update 2018

- Launch External Engagement Summer 2016
- Annual Plenary Meetings Fall 2016, '17, & '18
- Public Review Draft January 2018
- Governor's Review Draft Fall 2018
- Final Water Plan 2018 December 2018

*Note: DWR intends to intermittently release portions of the Water Plan when ready and/or when policy discussions are unfolding*

