Assembly
California Legislature

SELECT COMMITTEE ON REGIONAL APPROACHES TO ADDRESSING THE STATE'S WATER CRISIS

RUDY SALAS, Chair

Informational Hearing:
"Impacts and Status of Water Reliability in the Valley"

August 9, 2013, 9:30 A.M.
Kings County Government Center
Board of Supervisors Chambers
1400 W. Lacey Blvd.
Hanford, CA 93230

AGENDA

I. Opening Remarks
   Assemblymember Rudy Salas, Chair

II. Overview of current and projected water supply conditions
   Kasey Schimke, Assistant Director for Legislation for the Department of Water Resources

III. Panel 1: Local and Regional Water Needs
   a. Brent Walthall, Assistant General Manager, Kern County Water Agency
   b. Jason Peltier, Deputy Chief General Manager, Westlands Water District
   c. Dave Orth, General Manager, Kings River Conservation District
   d. Roger Patterson, Assistant General Manager, Metropolitan Water District of Southern California

IV. Panel 2: Environmental Justice Perspectives: Safe Drinking Water Needs
   a. Susana De Anda, Co-Executive Director, Community Water Center
   b. Ingrid Brostrom, Senior Attorney, Center on Race, Poverty & the Environment

V. Public Comments

VI. Closing Remarks
   Assemblymember Rudy Salas, Chair

Overview of California Water Conditions: Water Year 2013

Assembly Select Committee on Regional Approaches to Addressing the State's Water Crisis

August 9, 2013

Water Year 2013
Dry Conditions

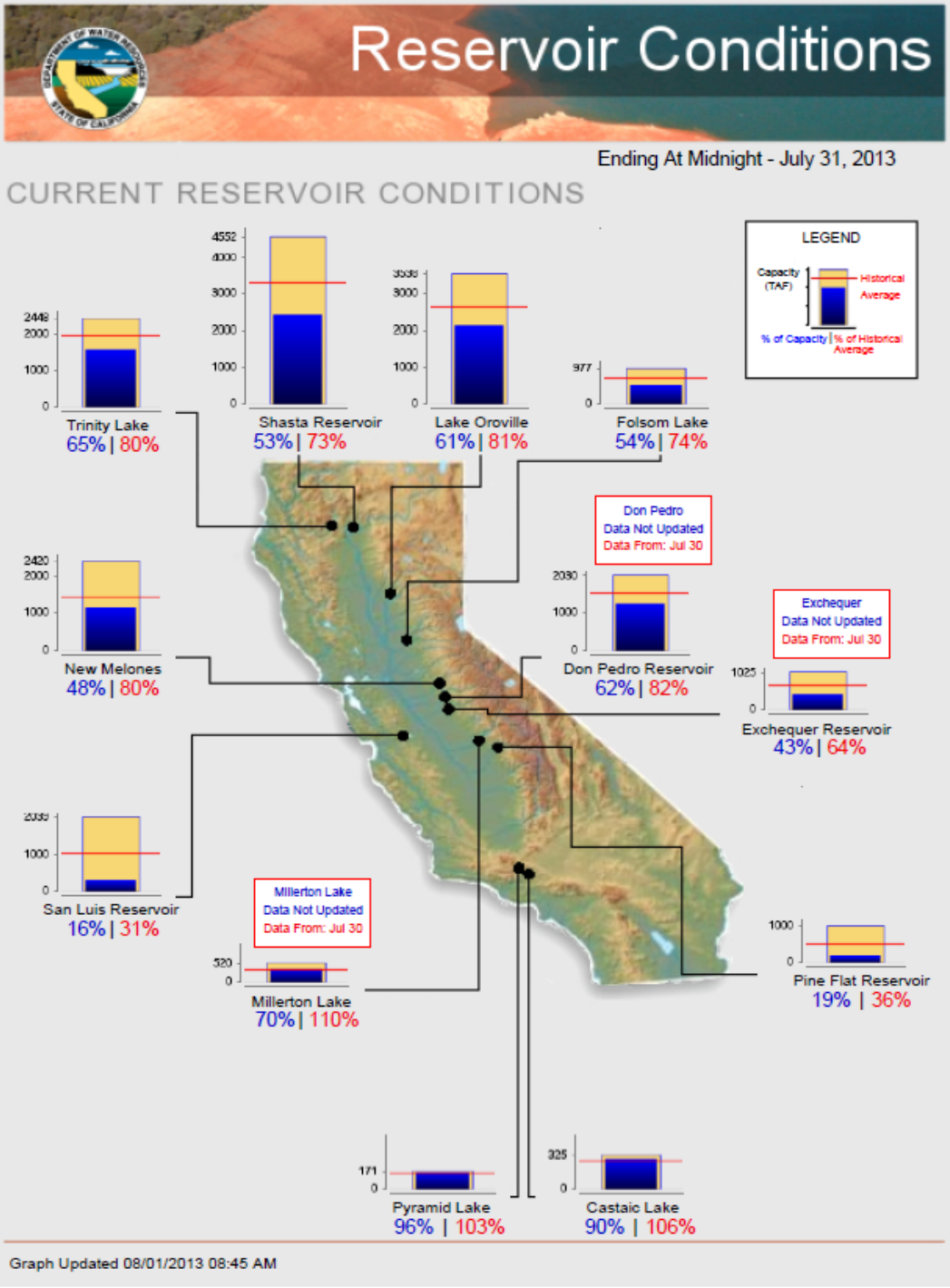
- 2013 is the second dry year in a row;
- Wet start to water year followed by record dry after January; most reservoirs benefitted from early precipitation;
- State Water Project allocation 35%, Federal Central Valley Project deliveries at 20%, Friant Class I at 62%;
- Colorado River Basin continues dry, however very low probability of California shortage in this decade.

Water Year 2012
Dry Conditions

- 2012 was California's first dry year since the 2007-09 drought;
- Followed a wet 2011;
- Generally, good statewide reservoir & groundwater basin storage;
- SWP allocation was 65%, federal Central Valley Project deliveries were 40%, Friant Class I were 50%;
- Colorado River Basin was dry.

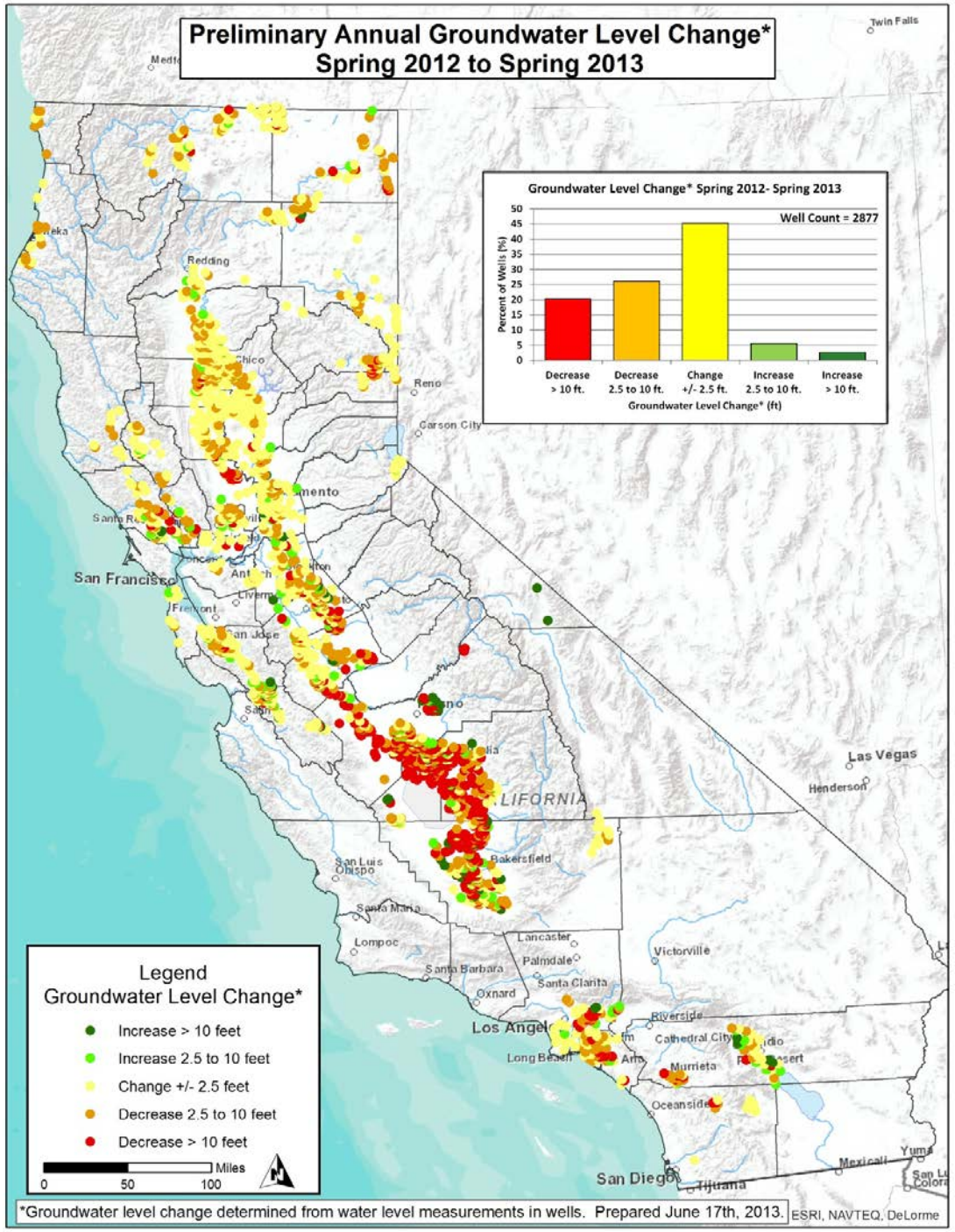
Storage: Water Year 2013

- Reservoirs
  - 20.7 MAF (79% Average) for July
  - End of September Storage Projected to be at 76% Average



Groundwater Level Change:

Dry Years: Spring 2012 to Spring 2013



Groundwater Level Change:

Wet Year:

Placeholder slide – graphic to be provided

DWR Actions in Preparation for a Possibly Dry 2014

- Planning fall outreach efforts to emphasize the need for planning for a dry 2014 and to be ready to implement conservation measures as necessary;
- Analyzing new statewide groundwater level information, and contracting with NASA's Jet Propulsion Laboratories for San Joaquin Valley monitoring to track recent subsidence;
- Facilitating water transfers;
- Tracking impacts of dry conditions.

Lessons Learned from Past Dry Years

- Impacts are highly site-specific, and vary depending on the ability of water users to invest in reliability
- Small water systems on fractured rock groundwater sources are most at risk of public health and safety impacts
- Larger urban water agencies using their Urban Water Management Plans can manage 3-4 years of drought with minimal impacts to their customers

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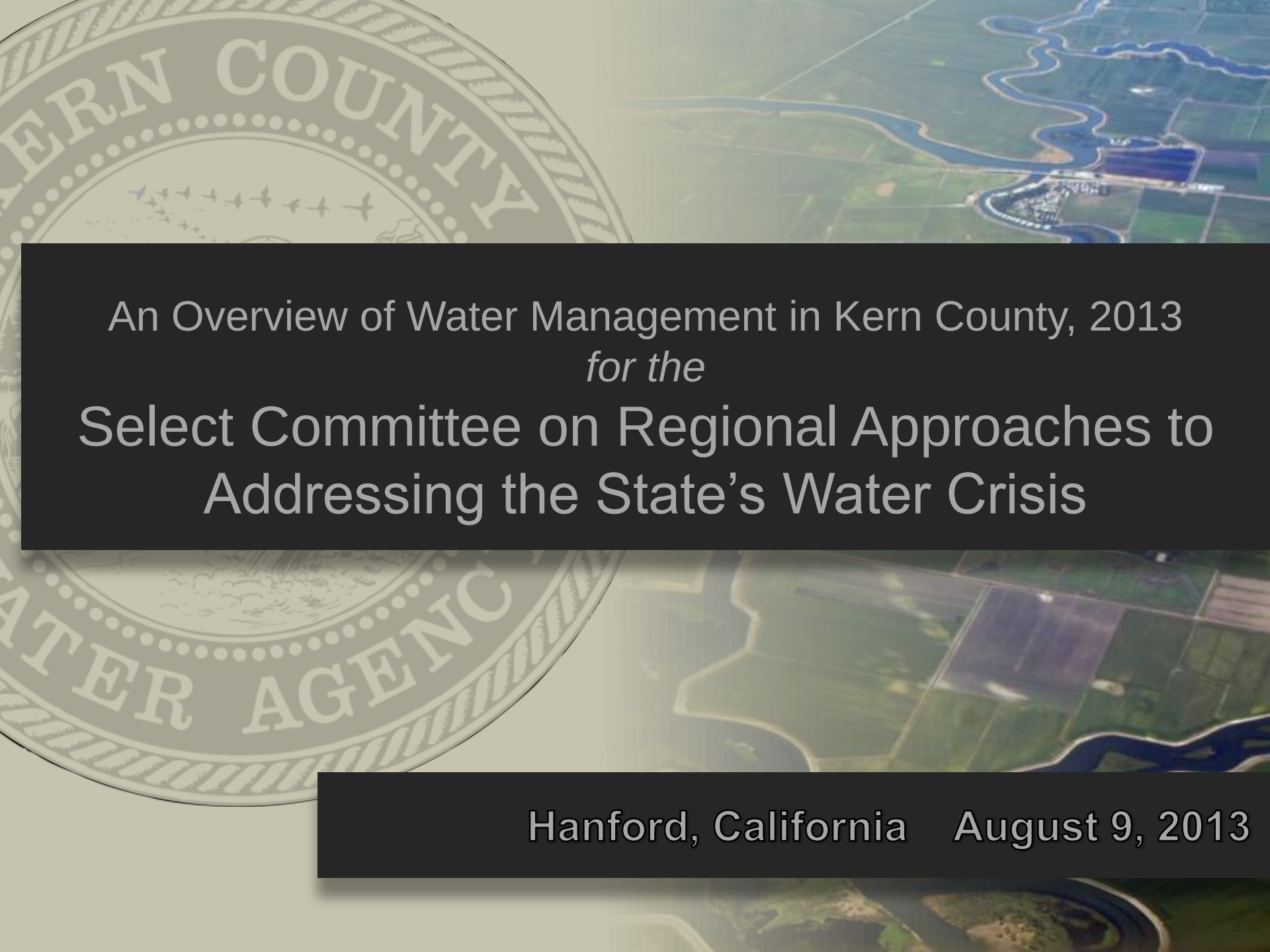


An Overview of Water Management in Kern County, 2013

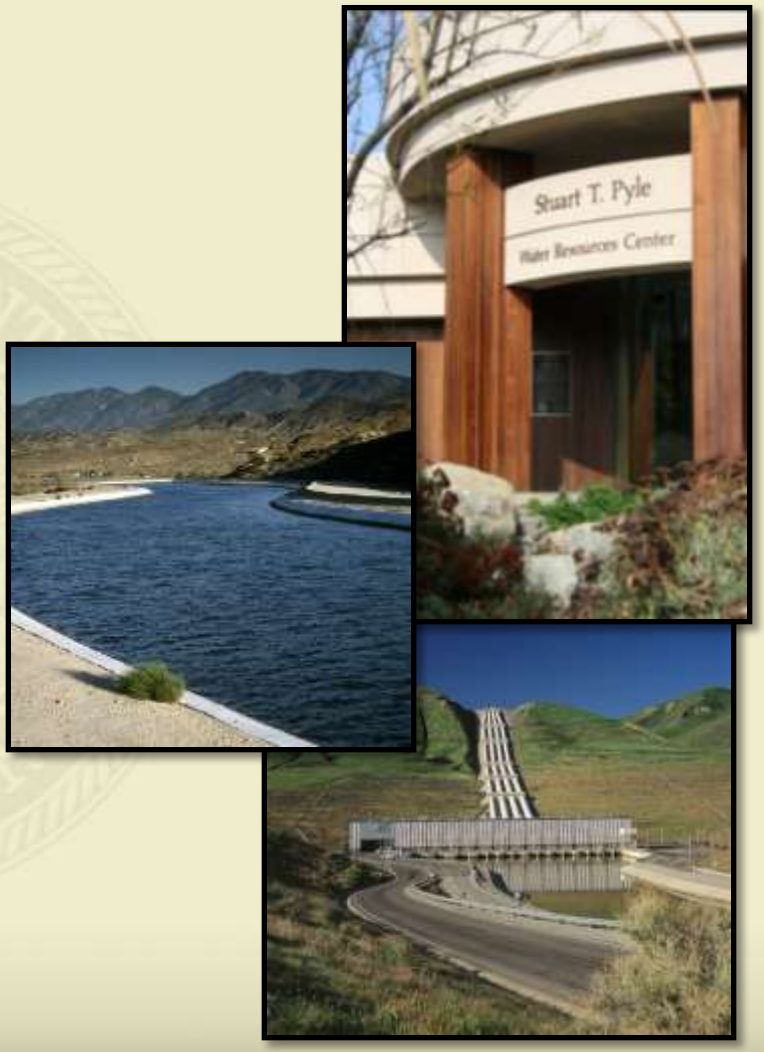
for the

Select Committee on Regional Approaches to Addressing the State's Water Crisis

Hanford, California August 9, 2013

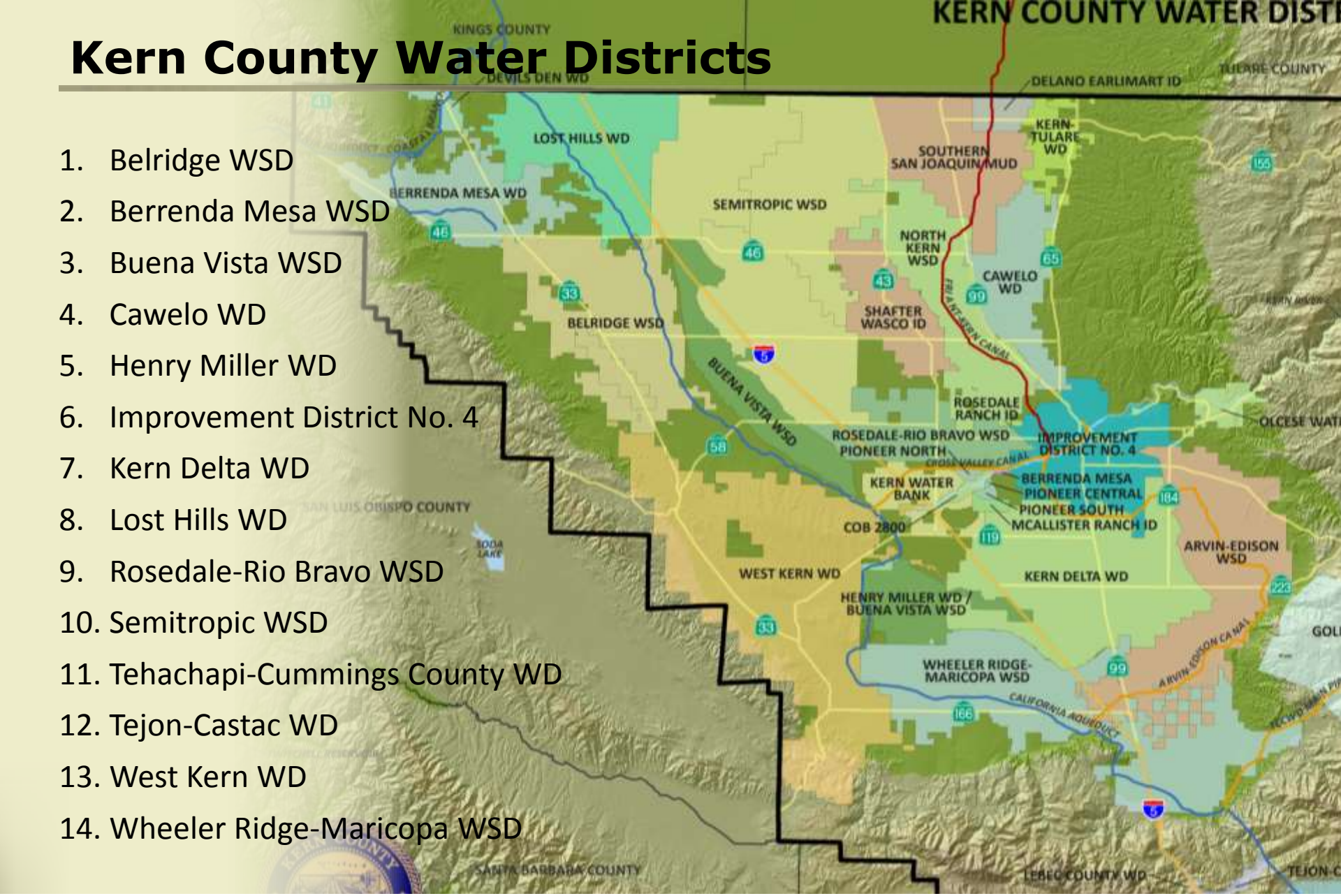
About the Kern County Water Agency

- Created by the Legislature and approved by Kern County voters in 1961.
- Governed by a 7-person voter-elected board of directors serving 4-year terms.
- Created primarily to serve as the local contracting entity for the State Water Project.
- Discretionary activities:
  - Groundwater
  - Flood control and dams
  - Hydroelectric power



Kern County Water Districts

1. Belridge WSD
2. Berrenda Mesa WSD
3. Buena Vista WSD
4. Cawelo WD
5. Henry Miller WD
6. Improvement District No. 4
7. Kern Delta WD
8. Lost Hills WD
9. Rosedale-Rio Bravo WSD
10. Semitropic WSD
11. Tehachapi-Cummings County WD
12. Tejon-Castac WD
13. West Kern WD
14. Wheeler Ridge-Maricopa WSD

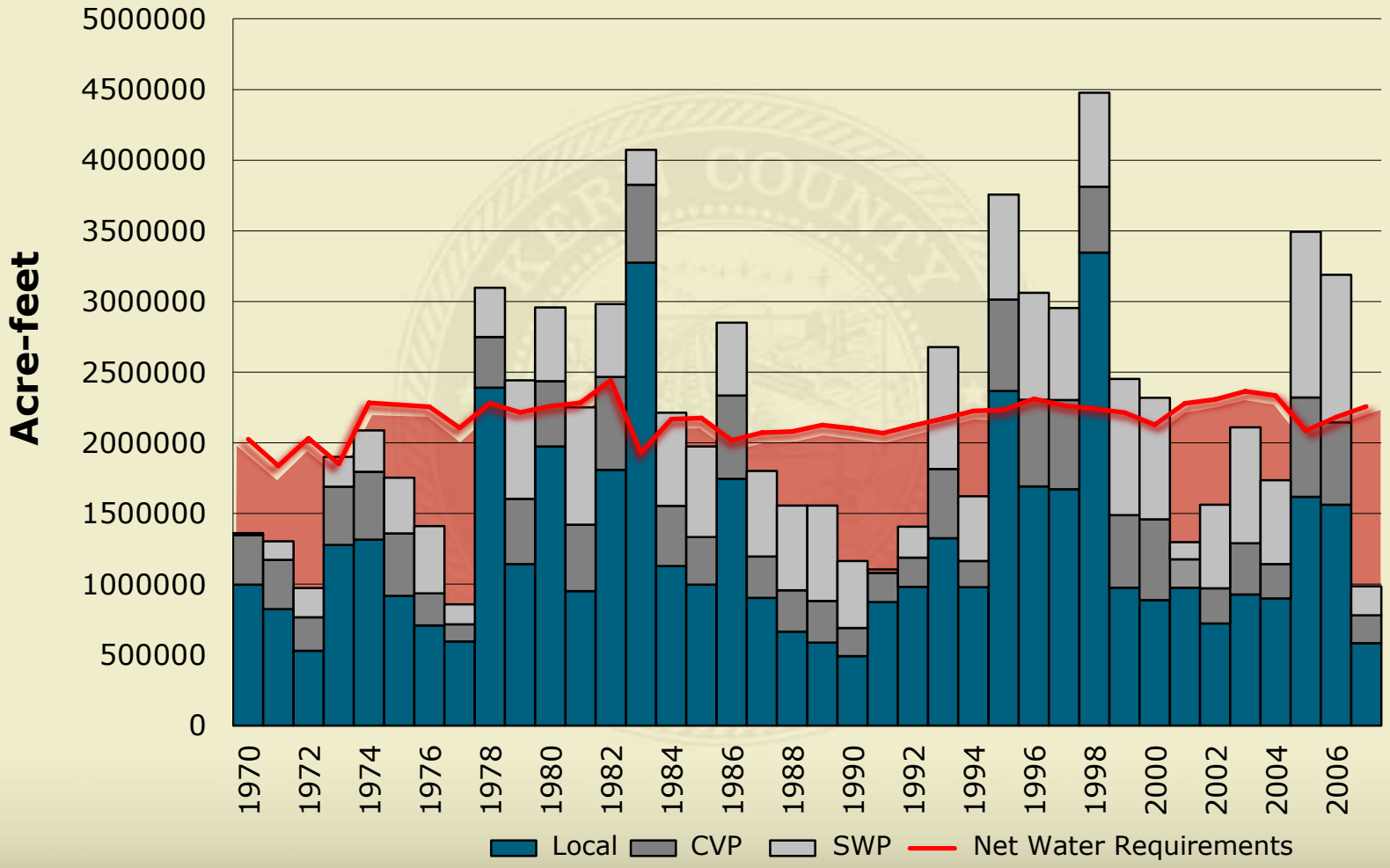


Select Committee on Regional Approaches to Addressing the State's Water Crisis: *Overview of Water Management in Kern County, 2013*

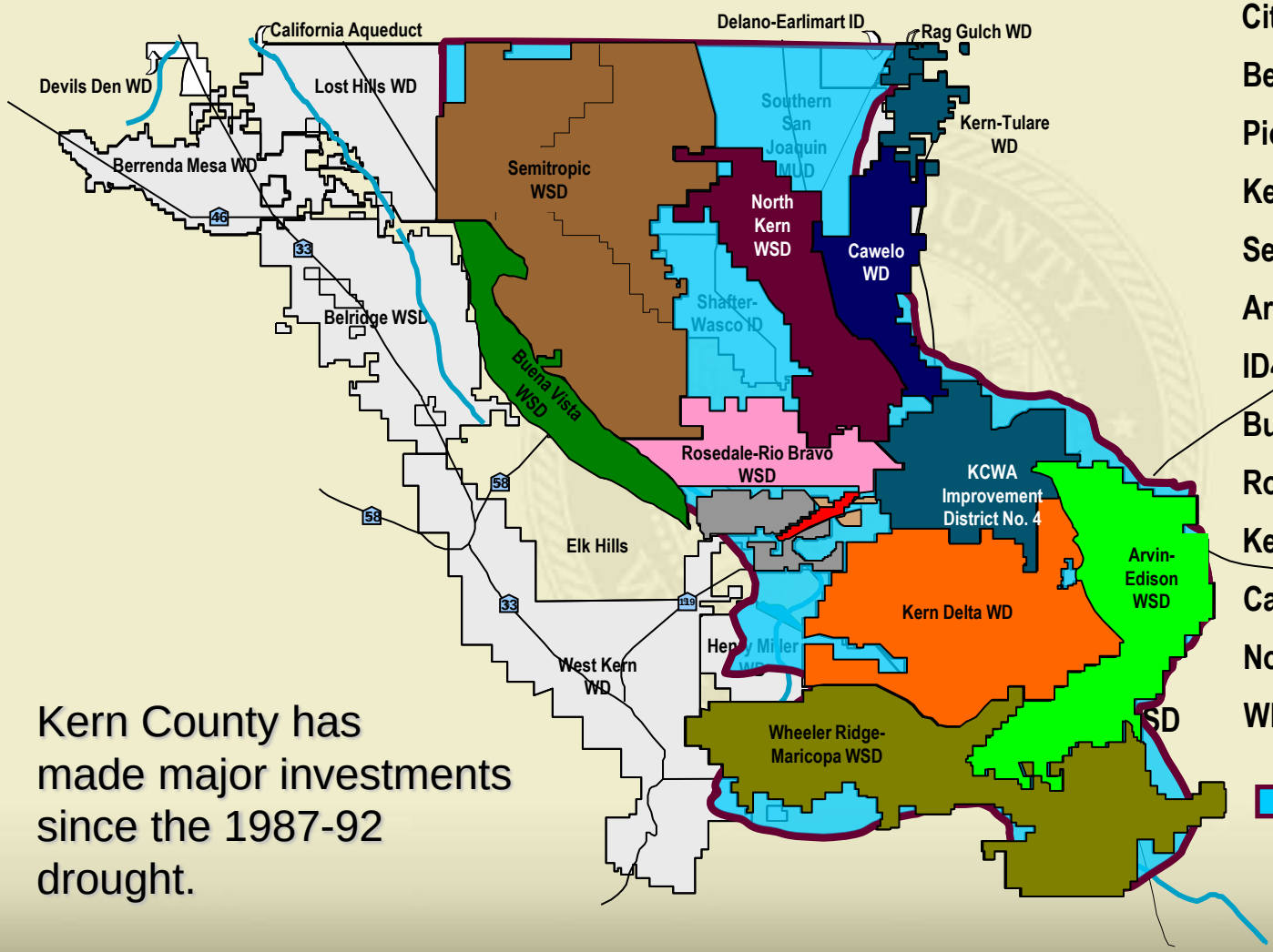
Kern County Water Sources – Applied Use

	Averages		2013	
Source	**Annual Acre-feet**	**Percent**	**Annual Acre-feet**	**Percent**
Kern River	764,000	**21%**	253,000	**7%**
State Water Project	838,000	**21%**	350,000	**10%**
Central Valley Project (Fed)	404,000	**12%**	194,000	**5%**
Local Streams and other sources	305,000	**15%**	123,000	**3%**
Groundwater	1,365,000	**31%**	2,756,000	**75%**
TOTAL	3,676,000	100%	3,676,000	100%

Water Supplies and Demands, SJV Portion of Kern



Kern County Groundwater Banking Programs



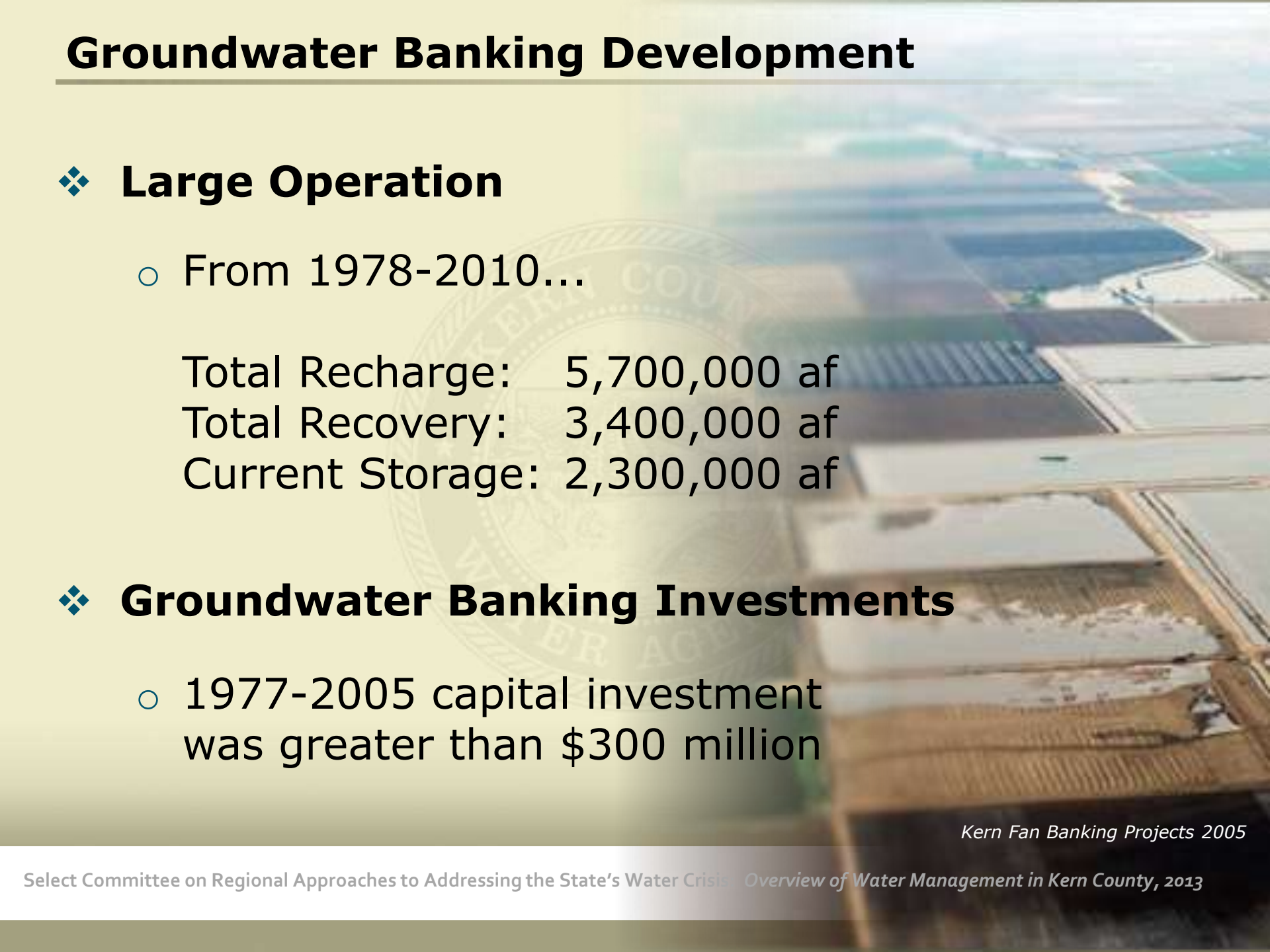
Kern County has made major investments since the 1987-92 drought.

Groundwater Banking Development

- **Large Operation**
  - From 1978-2010...

    Total Recharge: 5,700,000 af
    Total Recovery: 3,400,000 af
    Current Storage: 2,300,000 af

- **Groundwater Banking Investments**
  - 1977-2005 capital investment was greater than $300 million



Kern Fan Banking Projects 2005

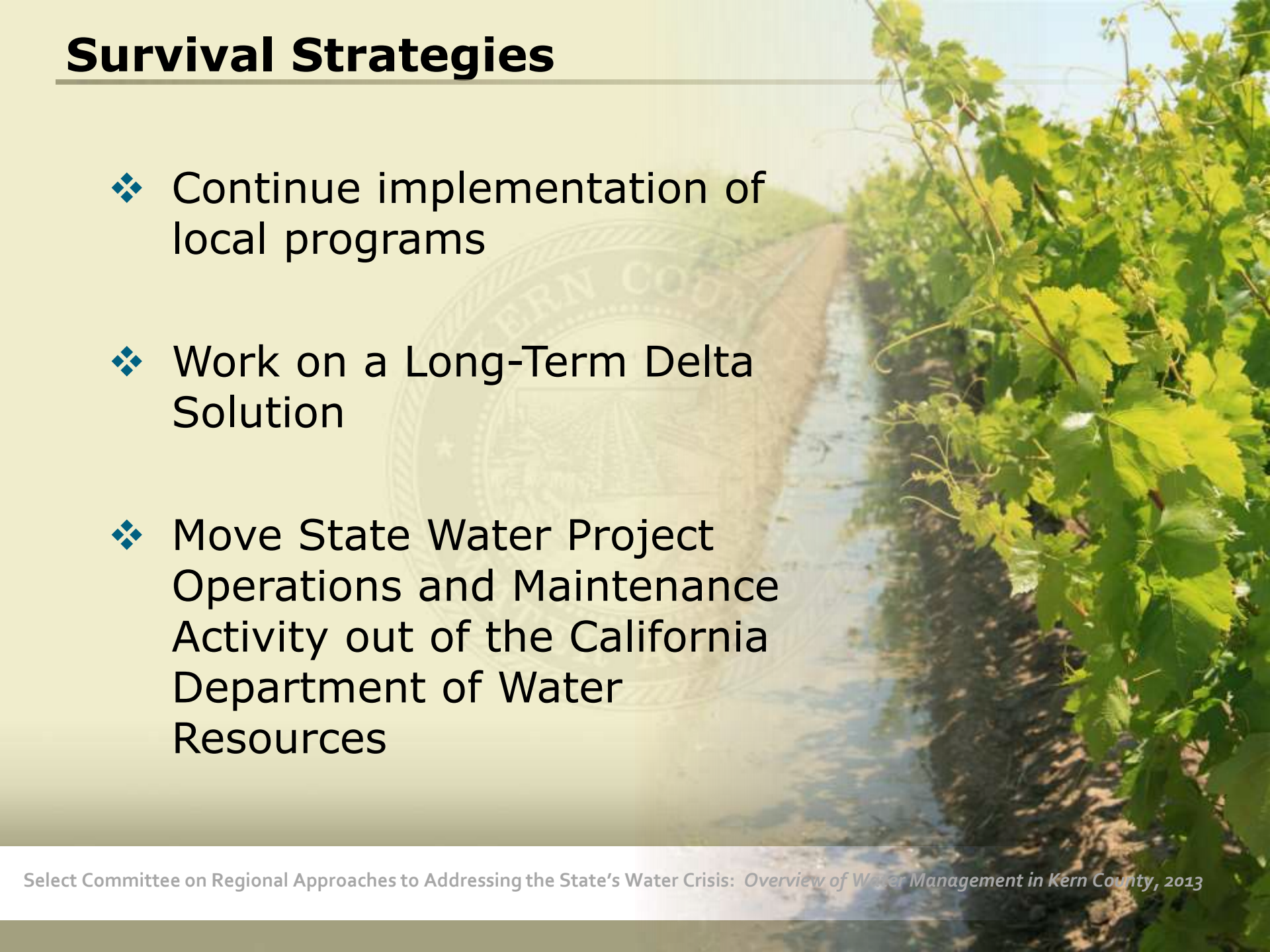
Kern Fan Groundwater Banking Projects

Facing East

Recovery Well Delivery

Survival Strategies

- Continue implementation of local programs
- Work on a Long-Term Delta Solution
- Move State Water Project Operations and Maintenance Activity out of the California Department of Water Resources



Kings Basin Water Management Overview

The Kings River is the source of life for a rapidly growing region in Central California that is also part of the world's most productive agricultural area. The Kings River's water development history has been one of steady and tenacious advancement against a backdrop of difficult physical and legal challenges that out of necessity had to be overcome for progress to occur.

One such important example of forward movement was establishment of the **Kings River Water Association** (KRWA). Consisting of 28 locally operated public districts and mutual water companies, the KRWA administers all of the water flowing in the Kings River. Since 1927, the Association has allocated and administered water distribution for beneficial irrigation use on nearly 20,000 San Joaquin Valley farms in portions of Fresno, Kings and Tulare counties.

Pine Flat Dam and the 1,000,000 acre-feet of storage it provides makes possible the use of the Kings River water for irrigation in a more beneficial and convenient manner than was possible prior to its construction. The dam has also proven to be a successful and effective flood management tool. The runoff from the Kings River fluctuates greatly, ranging from a high of almost 4.5 million acre-feet to a low of 390,000 acre-feet, with an average annual runoff of 1,745,000 acre-feet. Flood releases from Pine Flat Dam since it began operations in 1954 have ranged from 9,700 acre-feet to 2,302,110 acre-feet.

In 1951, the KRWA and other river stakeholders took steps to secure the natural resources in the San Joaquin Valley by obtaining special legislation to form the **Kings River Conservation District** (KRCD). Today, KRCD is a leading resource management agency for the Kings River region serving agriculture, business and residential communities within 1.2 million acres spanning portions of Fresno, Kings and Tulare counties, three of the top agricultural producing counties in the nation. The mission of KRCD is to provide flood protection, cooperate with other agencies to achieve a balanced and high quality water supply, provide on-farm support in efficient water conservation practices, and develop power resources for the public good. KRCD strives to protect one of our valley's most precious resources – water of the Kings River service area – through implementation of groundwater projects, on-farm water management, water quality monitoring and flood control maintenance.

Nearly three dozen cities, towns and communities depend upon groundwater conjunctively used and obtained from Kings River surface supplies to meet their municipal and industrial water needs. At the same time, the valley's population is rapidly growing and the demand for additional water is increasing. Meeting this demand is challenging, and must occur by increased efforts to efficiently and effectively manage our existing resources.

Even before KRCD was formed and Pine Flat Dam was built, water storage was part of resource planning in the Kings River service area. The earliest groundwater recharge basins began to be developed in the 1930s as a means of taking advantage of river flows well in excess of irrigation needs. From those early beginnings, the effort has expanded to numerous programs in groundwater storage, recharge and quality through the coordinated effort of the many agencies (more than thirty) that have a role in the Kings River's water resources.

The Kings Basin covers an area of 1,530 square miles and has an available storage capacity of 93,000,000 AF to a maximum depth of 1,000 feet. The region faces many water management challenges including groundwater overdraft, surface water shortages in dry years, and groundwater quality problems in certain areas. Groundwater overdraft is generally considered the largest regional problem with overdraft estimated to be 100,000 to 150,000 acre feet/year.

Conjunctive management, also referred to as conjunctive use, is the coordinated and planned management of both surface and groundwater resources in order to maximize their efficient use. Conjunctive management is used to improve water supply reliability and environmental conditions, reduce groundwater overdraft and land subsidence, and protect water quality. Conjunctive management has great potential to increase groundwater storage and water reserves. The Kings Basin has a long history of conjunctive use that has resulted in significant water supply benefits. Conjunctive use includes several components including recharge, followed by groundwater use during dry periods, and a robust monitoring program to help prevent negative impacts and verify the quantity of water in storage.

Within the Kings Basin, there are over 5,000 acres of recharge ponds and flood control basins with the capacity of recharging over 100,000 acre-feet of water annually, along with several thousands of miles of unlined canals that have direct recharge benefits.

Integrated Regional Water Management

The vision of the Kings Basin Water Authority is a sustainable supply of the Kings River Basin's finite surface water and groundwater resources through regional planning that is balanced and beneficial for environmental stewardship, overall quality of life, a sustainable economy, and adequate resources for future generations.

Who We Are

The Kings Basin Water Authority (KBWA) includes nearly 60 public, private and non-governmental organizations that have joined together to prepare an Integrated Regional Water Management Plan (IRWMP) to help protect and improve the water resources within the region. Sharing the same water resources and facing common water management problems have brought these entities together to establish and work to achieve common goals for the region.

The KBWA is a Joint Powers Authority comprised of representatives of each organization that serve on the Board of Directors, Advisory Committee and specific workgroups to implement the IRWMP. From large governmental agencies to grassroots non-profit organizations, the KBWA has involved and engaged stakeholders from varied interests to come together to develop and implement a plan to sustain the region's water resources. By working with varied interests and needs, the IRWMP planning process has opened the doors to partnerships, funding opportunities, operational connectivity, increased awareness of planning efforts and potential projects.

Where We Are

Covering portions of Fresno, Kings, and Tulare counties and located at the northern edge of the Tulare Lake Hydrologic Region, the KBWA's area includes 610,000 acres, stretching over nearly all of the Kings Groundwater Sub-basin and small portions of the Delta-Mendota, Kaweah and Tulare Lake Sub-basins. One of the world's most productive agricultural areas, the region also includes a large metropolitan area, as well as several small and rural communities.

Regional Water Challenges

The region faces many water management challenges including groundwater overdraft, surface water shortages in dry years, and groundwater quality problems in certain areas. Groundwater overdraft is generally considered the greatest overarching regional problem with the current plan area overdraft estimated to be nearly 150,000 acre feet per year. Correcting the overdraft through regional efforts will help lead to overall maintenance and improvement in the quantity, quality and cost of development of groundwater resources in the region. But within many distinct areas of the region, water quality and water reliability are higher priorities than overdraft correction, as communities reliant solely on groundwater experience difficulties in meeting drinking water standards. Improving and protecting water quality remains a significant challenge that can also benefit from regional, cooperative efforts.

A History of Working Together

The water management entities have worked together for decades to actively manage the region's water supply, but in 2001, working closely with the Department of Water Resources, several local agencies within the Kings Basin initiated a specific process focused on regional cooperation. Then in 2002**,** California Senate Bill 1672 created the Integrated Regional Water Management Act to encourage local agencies to work cooperatively to manage local and imported water supplies to improve quality, quantity, and reliability. The Kings Basin group expanded and the region prepared an IRWMP in 2007. Regional efforts continued to grow and evolved into the formation of the Upper Kings Basin Integrated Water Management Authority in 2009, which is now commonly known as the Kings Basin Water Authority.

What is the IRWMP?

The IRWMP establishes goals and measurable objectives to improve and protect the region's water supply. Established with a 20-year planning horizon, the IRWMP was updated and adopted in October 2012 to comply with new IRWMP standards established by the Department of Water Resources and to provide guidance in implementing future projects and programs sponsored by the KBWA. The five regional goals are to:

- Halt, and ultimately reverse, the current overdraft and provide for sustainable management of surface and groundwater
- Increase the water supply reliability, enhance operational flexibility, and reduce system constraints
- Improve and protect water quality
- Provide additional flood protection
- Protect and enhance aquatic ecosystems and wildlife habitat

Regional Successes

Through the regional approach provided by the IRWMP, the Kings region has been very successful in securing project funding through various grants from the State of California. California voters passed Propositions 50, 84 and 1E which allocated money specifically for IRWM related planning and projects. The KBWA and its stakeholders have successfully leveraged millions of dollars in grant funds secured for the region towards planning and construction of water supply and reliability improvement, conjunctive use, groundwater recharge, water quality protection, water conservation, flood water protection, and disadvantaged community related projects. These successes are helping the KBWA implement its objectives, and the KBWA continues to work to position itself to secure further funding for the region.

The KBWA is not a static organization and continues to grow every year. Agencies and organizations participating in the IRWMP as of early 2013 are:

Members

- Alta Irrigation District
- City of Clovis
- City of Dinuba
- City of Fresno
- City of Kerman
- City of Parlier
- City of Reedley
- City of Sanger
- City of Selma
- County of Fresno
- County of Tulare
- Consolidated Irrigation District
- Fresno Irrigation District
- Fresno Metropolitan Flood Control District
- Kings County Water District
- Kings River Conservation District

Interested Parties

- Bakman Water Company
- Biola Community Services District
- California Native Plant Society, Sequoia Chapter
- California State University, Fresno
- City of Kingsburg
- City of San Joaquin
- Community Water Center
- County of Kings
- Crescent Canal Company
- Cutler Public Utility District
- East Orosi Community Services District
- Easton Community Services District
- El Rio Reyes Conservation Trust
- Fresno County Farm Bureau
- Hardwick Water Company
- James Irrigation District
- Kings River Conservancy
- Kings River Water Association
- Laguna Irrigation District
- Laton Community Services District
- Liberty Canal Company
- Liberty Water District
- London Community Services District
- Malaga County Water District
- Mid-Valley Water District
- Orange Cove Irrigation District
- Orosi Public Utilities District
- Raisin City Water District
- Reed Ditch Company
- Riverdale Irrigation District
- Riverdale Public Utilities District
- Sanger Environmental Fund
- Self-Help Enterprises
- Sierra Club, Tehipite Chapter
- Sierra Resource Conservation District
- Sultana Community Services District
- Terranova Ranch, Inc.
- Tulare Basin Wildlife Partners
- University of California Cooperative Extension – Fresno County

Kings Basin

Integrated Regional Water Management Plan

KINGS BASIN
Water Authority

Adopted October 17, 2012

EXECUTIVE SUMMARY

Introduction

The Kings Basin Integrated Regional Water Management Plan (IRWMP) is a collaborative effort between 54 public, private and non-governmental agencies to manage water resources in the Kings Groundwater region (Kings Basin). The Kings Basin is a sub-basin of the San Joaquin Valley groundwater basin, within the Tulare Lake Hydrologic Region. The IRWMP region includes nearly all of the Kings Sub-basin and small portions of the Delta-Mendota, Kaweah and Tulare Lake Sub-basins.

Historically, water management in the Kings Basin was limited to independent operations by local water agencies and individual water users. Local agencies initiated a process of regional cooperation in 2001 and prepared an IRWMP in 2007. This regional effort continued to grow and evolved into the formation of the Upper Kings Basin Integrated Water Management Authority (Kings Basin Water Authority or Authority) in 2009. In 2012, the Authority included 17 official members and 37 interested parties. The 2007 IRWMP was updated to comply with new IRWMP standards established by the Department of Water Resources (DWR), describe the new governance structure, document changes in policies and procedure, and include information on new stakeholders and their input on water management issues. The region and its IRWMP were accepted by DWR during the IRWMP Regional Acceptance Process of 2009.

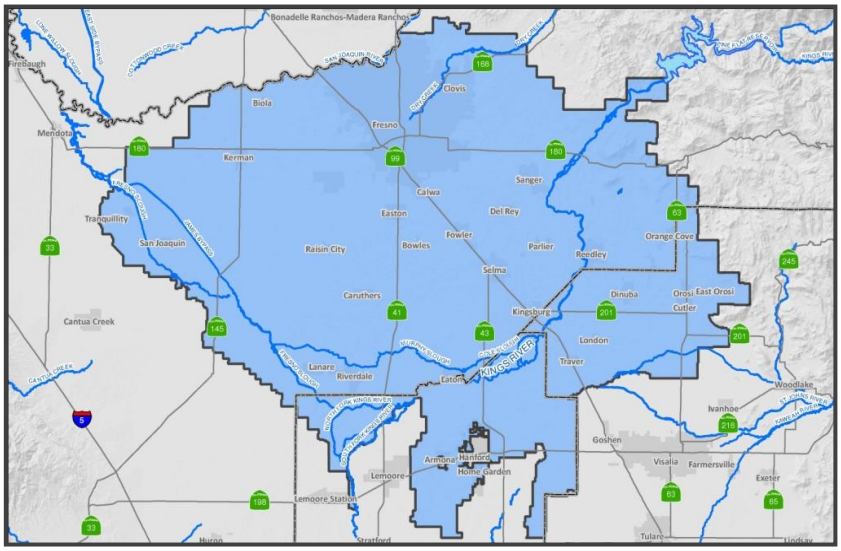
> The vision of the Kings Basin Water Authority is a sustainable supply of the Kings River Basin's finite surface water and groundwater resources through regional planning that is balanced and beneficial for environmental stewardship, overall quality of life, a sustainable economy, and adequate resources for future generations."

This updated IRWMP Planning horizon extends 20 years to the year 2032. By working with varied interests and needs, the IRWMP planning process has opened the doors to partnerships, funding opportunities, operational connectivity, and increased awareness of planning efforts and potential projects.

Region Description

The Kings Basin IRWMP covers 610,000 acres (953 square miles) and includes parts of Fresno, Kings and Tulare Counties. The IRWMP area also includes numerous cities, communities, water districts, irrigation districts, and special districts.

The region uses both surface and groundwater to meet water needs. The Kings River is the major source of surface water. Operation of Pine Flat Reservoir provides a facility to regulate the Kings River flows and provides storage, flood control, hydropower and recreational benefits. The San Joaquin River defines the northern boundary of the IRWMP region, and provides surface water to some areas in the northern portion of the Kings Basin.



Map of Kings Basin IRWMP Area

Much of the Kings Basin is developed for agriculture and wide varieties of crops are grown. Most crops require irrigation water during the dry season, and irrigated lands cover about 480,000 acres. An extensive network of canals is used to deliver water to agricultural lands and groundwater recharge facilities. The region is comprised of several major urban areas, including the Fresno- Clovis metropolitan area. The majority of the IRWMP area has been ecologically modified through urbanization and agriculture. The Kings River supplies the most prominent riparian and wetland habitat in the area, and provides the main corridor for fish and wildlife movements.

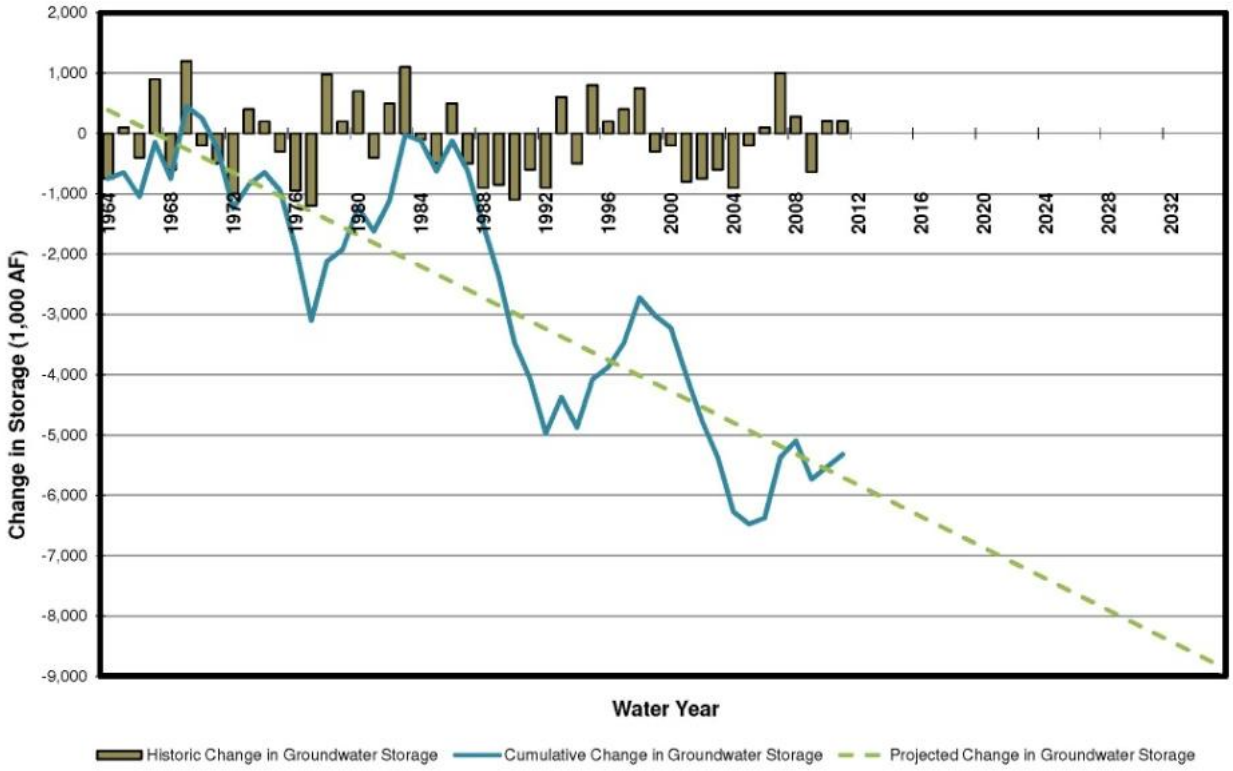
Kings River

The IRWMP boundary is logical for regional management since the local agencies share the same groundwater basin, use the same surface water sources and the stakeholders face similar water management issues and concerns (Chapter 3).

Water Management Challenges

The region faces many water management challenges including groundwater overdraft, surface water shortages in dry years, and groundwater quality problems in certain areas. Groundwater overdraft is generally considered the largest regional problem with the current plan area overdraft estimated to be 100,000 to 150,000 AF/year. The long-term decline in groundwater storage will be significant if current water management strategies are maintained. Correcting the overdraft through regional efforts will help lead to overall maintenance and improvement in the quantity, quality and cost of development of groundwater resources in the region.

Within certain areas of the region and for certain stakeholders, water quality and water



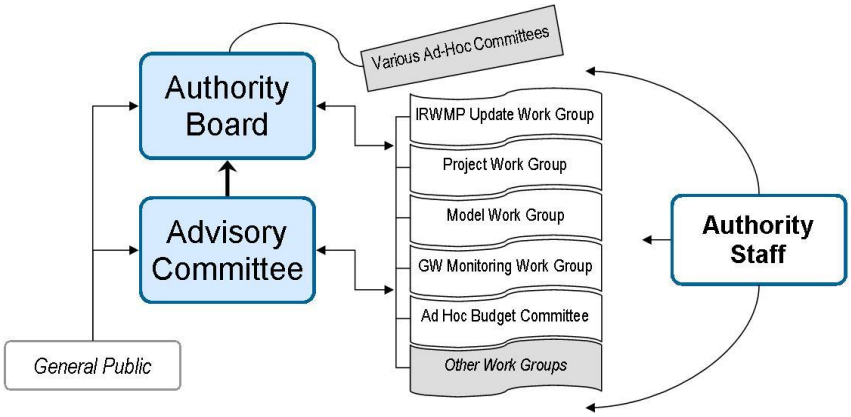
Historical and Projected Groundwater Level Decline

reliability are higher priorities than overdraft correction. Communities completely reliant on groundwater for drinking water purposes are experiencing an increasingly difficult time meeting drinking water standards. Improving and protecting water quality remains a significant challenge that can also benefit from regional and cooperative efforts.

The DWR established 16 IRWM Plan Standards (August 2010) that must be addressed in updated IRWMPs. These are addressed in separate chapters of the IRWMP and are summarized below:

Governance

The Authority is governed by a Joint Powers Agreement (JPA) made effective on March 1, 2009. The JPA formed a legal Authority that satisfies the definition of a Regional Water Management Group according to the California Water Code. Members must execute the JPA and pay an annual assessment. Interested parties can participate free of cost. The Authority is governed by a Board of Directors comprised of one representative from each Member agency. An Advisory Committee and numerous Work Groups provide advice to the Board of Directors and assist with IRWMP plan development, technical studies, project evaluation, and administrative efforts. The organizational structure provides balanced opportunities for stakeholder participation. (Chapter 2)



Joint Power Authority Organization Chart

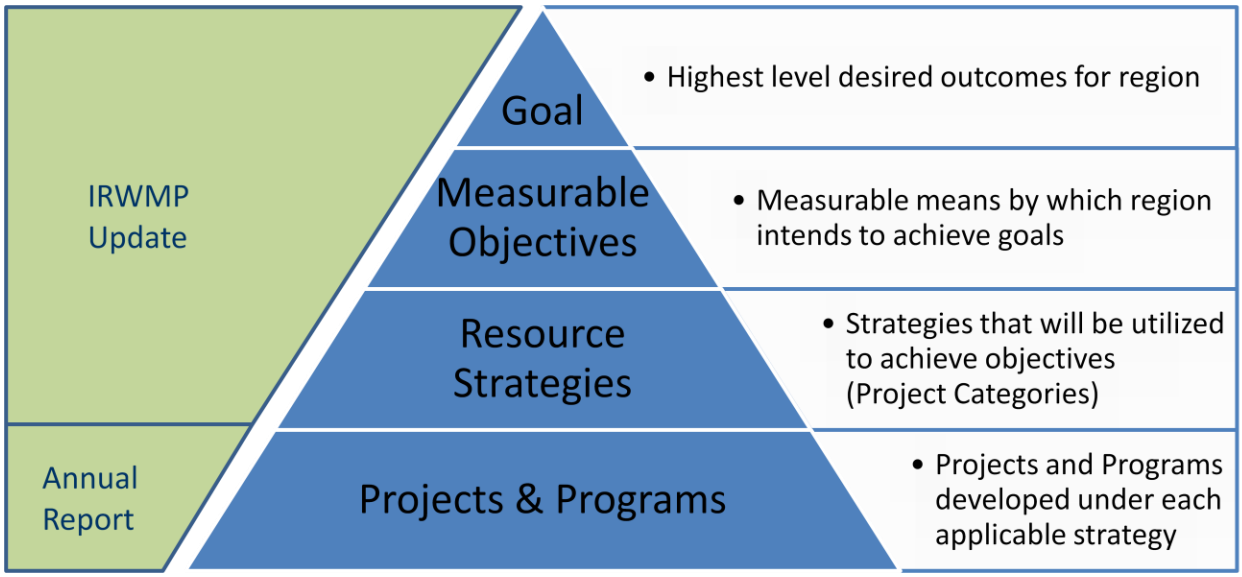
Disadvantaged Communities

A Disadvantaged Community (DAC) is a community with mean annual household income less than 80% of the statewide average. The Kings Basin includes approximately 90 unique DACs. Many of the DACs have critical water supply and water quality needs. Agriculture is a large sector of the economy in many DACs, and maintaining this economic base requires a reliable water supply. Water supplies are also needed to accommodate urban, commercial and industrial growth in DACs. A regional study on DAC water issues, to be completed in 2013, will engage DACs, identify water, sewer, and storm drain issues, and develop potential projects to address their water supply problems. (Chapter 4)

Goals and Objectives

The Authority developed regional Goals and Objectives to provide focus to their planning efforts. These Goals and Objectives consolidate urban, agricultural and environmental concerns. Goals are the highest level priorities, and objectives are more specific actions to meet the goals. The objectives can be accomplished through resource management strategies, projects and programs. The process to identify Goals and Objectives considered those developed in the 2007 IRWMP, the 2010 IRWMP Guideline requirements, and changed conditions within the basin since the 2007 IRWMP was adopted. The regional goals include: 1) reduce groundwater overdraft; 2)

increase water supply reliability; 3) improve water quality and drinking water reliability; 4) enhance flood protection; and 5) enhance ecosystems and the services they provide. Mitigating groundwater overdraft is generally considered the highest regional priority, but water quality and water reliability are higher priorities in some areas. Fifteen measureable objectives were identified to help meet the five goals. Each objective was assigned a metric so its progress can be measured. (Chapter 5)



Hierarchy of Goals, Objectives, Strategies and Programs

Resource Management Strategies

A resource management strategy is a category for a type of project, program, or policy that helps local agencies manage their water and related resources. This IRWMP evaluates 33 strategies listed in the 2009 California Water Plan Update, and 'Drought Planning', a strategy added by the Authority. The evaluations include a description of each strategy, current use and applicability in the Kings Basin, and constraints to development. The Kings Basin actively uses 27 Resource Management Strategies and therefore maintains a diverse and comprehensive water management portfolio. High priority strategies include urban and agricultural water use efficiency, conjunctive use, recycled municipal water, and urban runoff management. (Chapter 6)

Project Review Process

The Authority has a project review process to identify and rank potential projects for funding or inclusion in grant applications. The Authority calls for project submittals once a year to include in a regional list, but stakeholders can submit project descriptions at any time. The project description is reviewed for completeness and conformance to IRWMP objectives and goals. If a project meets those requirements, it is added to the list and then documented in an annual report. The list is prepared to help prevent

duplication, foster project integration, and encourage stakeholders to be prepared for grant solicitations. When funding opportunities arise the Authority notifies stakeholders. A Project Selection Panel (Panel) is formed to review potential projects. Stakeholders are invited to submit more detailed project information, and the projects are prioritized by the Panel. The Panel identifies the most promising projects for inclusion in grant applications. The recommended list then requires approval from the Advisory Committee and Board of Directors. (Chapter 7)

Impacts and Benefits of Plan Implementation

Historically, local water management, especially groundwater, was limited to independent operations by each overlying water agency. Regional water management planning enhances the local, fragmented approach with a more comprehensive and cooperative methodology. Some problems, such as groundwater overdraft, can only be solved with regional cooperation. A comprehensive list of benefits and impacts from implementing the IRWMP were identified for the Kings Basin and surrounding IRWMP regions. The impact/benefit analysis can be used to prioritize goals, prioritize resource management strategies, set benchmarks for evaluating IRWMP performance, and identify potentially adverse impacts from implementation projects that are often overlooked. A benefit of the Plan's implementation is in measuring against a baseline for water supply and water quality to reconcile and measure regional project benefits with such baseline criteria over time. (Chapter 8)

Groundwater Recharge Basin in City of Clovis

Plan Performance and Monitoring

Stakeholders in the Kings Basin participate in various independent but related regional efforts to monitor surface water quality, groundwater levels, surface water flows, Kings River levees, and Kings River Fisheries. The Authority will prepare an Annual Report to document monitoring data and serve as a status report for the stakeholders, Board of Directors and the State. The report will summarize regional monitoring efforts, and document success in meeting IRWMP objectives, success in implementing projects, an

updated project list, proposed amendments to the IRWMP, and changes in governance, policies, and membership. (Chapter 9)

Data Management

The Authority has developed data management procedures to ensure the efficient use of existing data and accessibility to stakeholders. Existing data management includes groundwater levels by the Kings River Conservation District (KRCD), surface water flows by the Kings River Water Association (KRWA) and Friant Water Authority (FWA), and water quality by the Southern San Joaquin Water Quality Coalition. The Authority also maintains data on proposed projects in a database. The Authority previously developed a Data Management System (DMS) that it is not currently utilizing in anticipation of employing DWR's DMS once available. (Chapter 10)

Financing

The Authority requires funding for operations, IRWMP updates, regional technical studies, grant applications, and project implementation. The Authority's administrative and governance operations are funded by an annual dues payment by each member, thus ensuring on-going funds to keep the Authority operating. Numerous stakeholders also contribute by offering the use of facilities and volunteering time to operations and committees. Infrastructure projects are typically funded with project proponent funds and augmented with State or Federal grants and loans. The Authority tracks funding opportunities and shares the information with stakeholders. (Chapter 11)

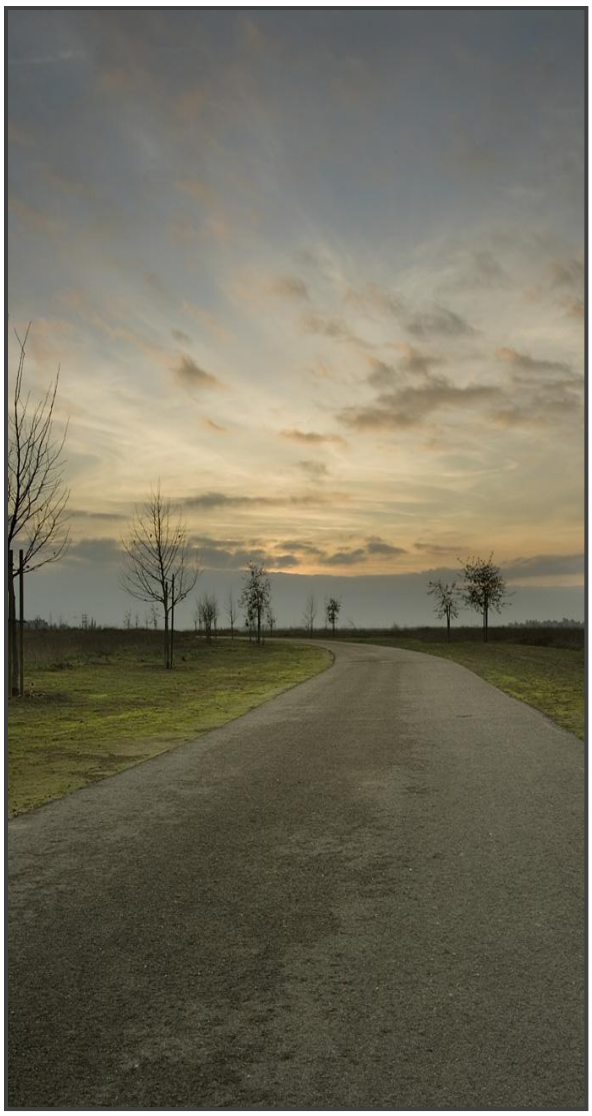
Technical Analysis

The Authority prepared numerous studies to support the 2007 IRWMP. Topics covered include regional water supplies, water demands, hydrogeologic conditions, land use, and water quality. As a result, only a limited amount of new analysis was needed to update this IRWMP. The Kings Basin Integrated Groundwater and Surface Water Model (Kings IGSM or Model) is a regional model that simulates surface water and groundwater systems in the entire Kings Basin. The model was developed in 2007 and remains the primary analytical tool available to the Kings Basin. Prior model runs concluded that under current water management conditions groundwater levels will continue to decline. A simpler technique using a trendline was used to estimate future overdraft. Each year the Authority will compare the projected versus actual change in groundwater storage to monitor progress and refine long-term goals. (Chapter 12)

Relation to Local Water Planning

Local agencies have their own water planning documents that reflect their policies and goals. Local water plans include Urban Water Management Plans, Groundwater Management Plans, Water, Wastewater and Stormwater Master Plans, Water

Conservation Plans, Agricultural Water Management Plans, and General Plans. Water plans from the Member and Interested Party agencies were reviewed and sections of the IRWMP were updated based on information, issues, and potential solutions provided in the plans. The local planning documents are often a reflection of the goals, objectives, and strategies of the IRWMP. The Authority is comprised of many local leaders, city council members, county supervisors and water agency directors, which serve as a link between the IRWMP and local water planning efforts. The Authority believes that regional efforts lead to more effective and better informed local efforts. Regional planning can serve as a basemap or guideline for the entire region to follow in local water resources planning. (Chapter 13)



Local Recreational Area

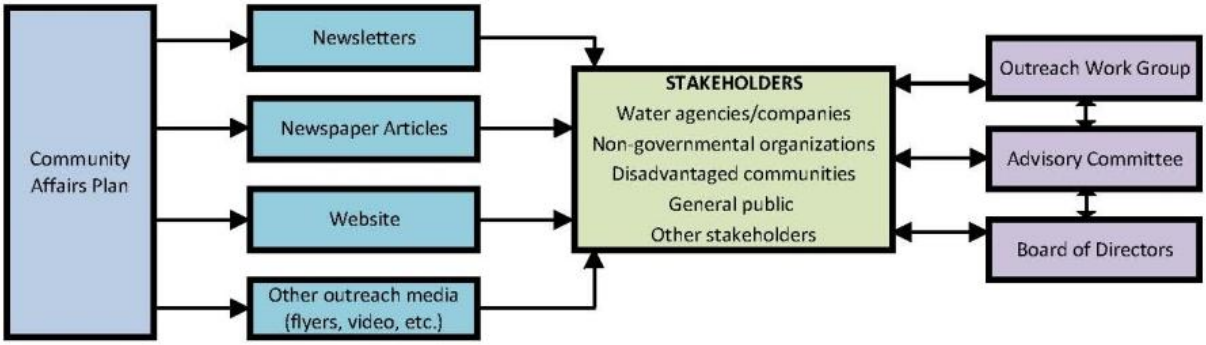
Relation to Local Land-use Planning

Local cities and counties manage land use according to General Plans and Municipal Service reviews. These documents were reviewed for consistency with the IRWMP and to incorporate local planning elements. The IRWM process provides many opportunities to collaborate and integrate with local land planners both at the city and county levels. Many general plans discuss integrated land use and water supply planning. However, many land use documents provide few, if any, details on regional overdraft, groundwater management, new water supply development, and impact on irrigation facilities. The land-use planning documents also have few details on how they plan to reach their water management goals. Several key approaches were identified to strengthen cooperation and communication with land-use planners. (Chapter 14)

Stakeholder Involvement

The Authority includes a diverse group of members and interested parties, which is the result of on-going public outreach efforts since 2004. Outreach efforts are led by an Outreach Work Group and follow a Community Affairs Plan, which is a living document and remains the backbone of the public outreach effort. Outreach methods include the

Authority website, newspaper articles, newsletters, e-mails, printed materials, speaker's bureau, Advisory Committee, Work Groups, and Board of Directors meetings. Stakeholder involvement is considered fundamental to the success of the IRWMP, and outreach efforts will continue to educate current participants and seek new members and interested parties. (Chapter 15)



Stakeholder Involvement Process

Coordination and Integration

Coordination involves public outreach and facilitation efforts to bring stakeholders together and working as a unified group. Integration is defined as combining separate pieces into an efficient unified effort. These two IRWMP standards are closely related. The Authority's governance structure fosters integration and coordination through the organizational structure, opportunities for participation, and a public outreach program. The Authority has an integrated process to solicit and review projects and promotes multi-agency efforts. Data management is integrated through regional monitoring efforts, an annual Kings Basin report, and a regional hydrologic model. The Kings Basin also communicates regularly with neighboring IRWMP groups and State DWR staff. (Chapter 16)

Pine Flat Reservoir during Low Water Levels

Climate Change

Climate change in the Kings Basin could impact precipitation patterns, and cause higher temperatures and earlier snowmelt. The area is especially vulnerable due to its dependence on mountain snow as a water supply. The IRWMP includes a climate change vulnerability assessment for water supplies, water demands, water quality, flooding, ecosystems, and hydropower. Climate change adaptation will be accomplished through 'no-regret' strategies, which are actions that have benefits with or without climate change. The main strategies will include water conservation,

recycled water use, groundwater recharge, and increasing water storage capacity. (Chapter 17)

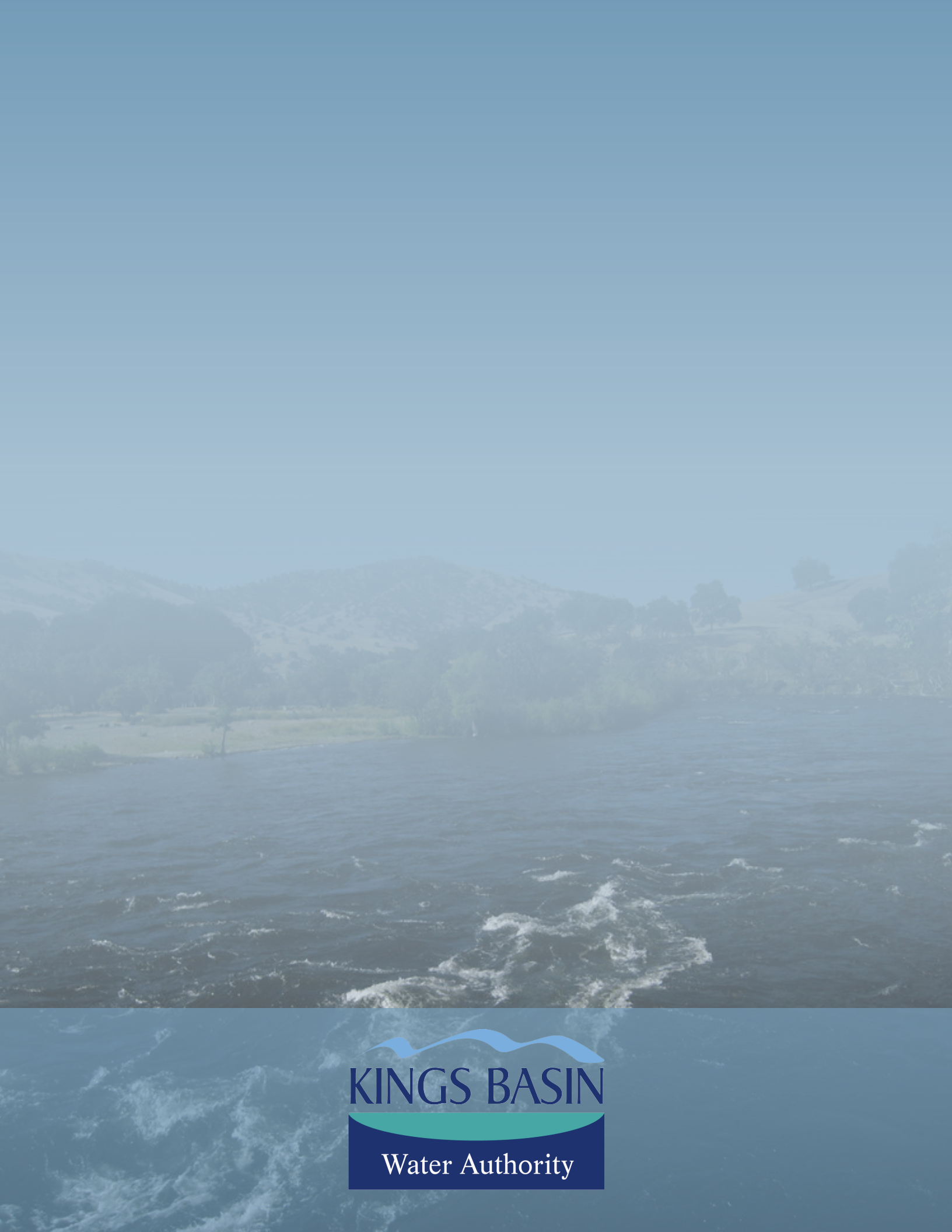
Kings Basin Water Authority

The Authority is an open organization and encourages participation from local water agencies, land-use agencies, industry organizations, non-governmental organizations, and individuals in the Kings Basin. The Authority's Advisory Committee meets every three months at the office of the Fresno County Farm Bureau.

Please contact Eric Osterling or Cristel Tufenkjian (KRCD) at 559-237-5567 or visit their website at www.kingsbasinauthority.org if you have any questions about the IRWMP or Authority, or would like to become a member or interested party.

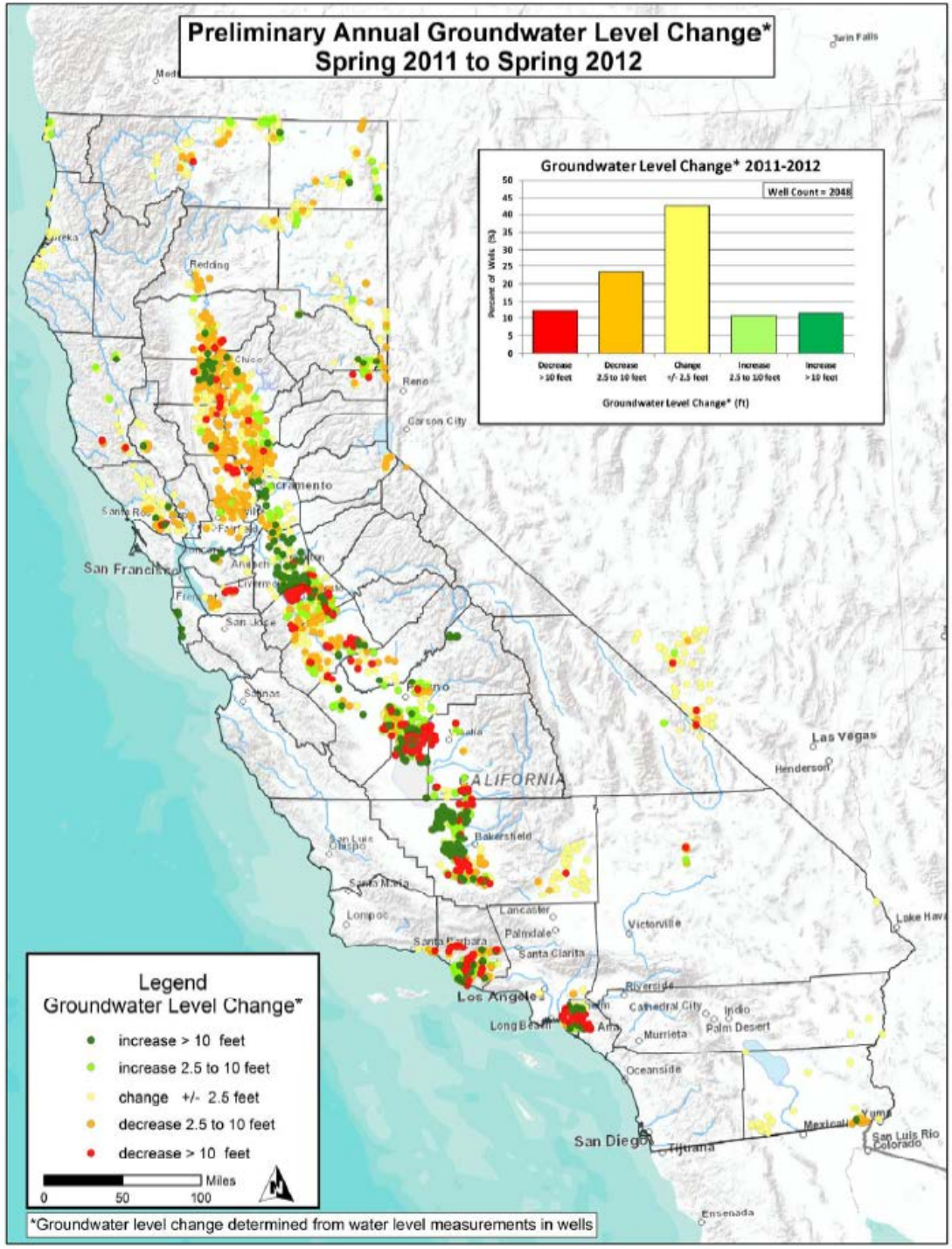
Funding for updating the Kings Basin Water Authority IRWMP was in part provided by the California Department of Water Resources through a Proposition 84 IRWM Planning Grant.

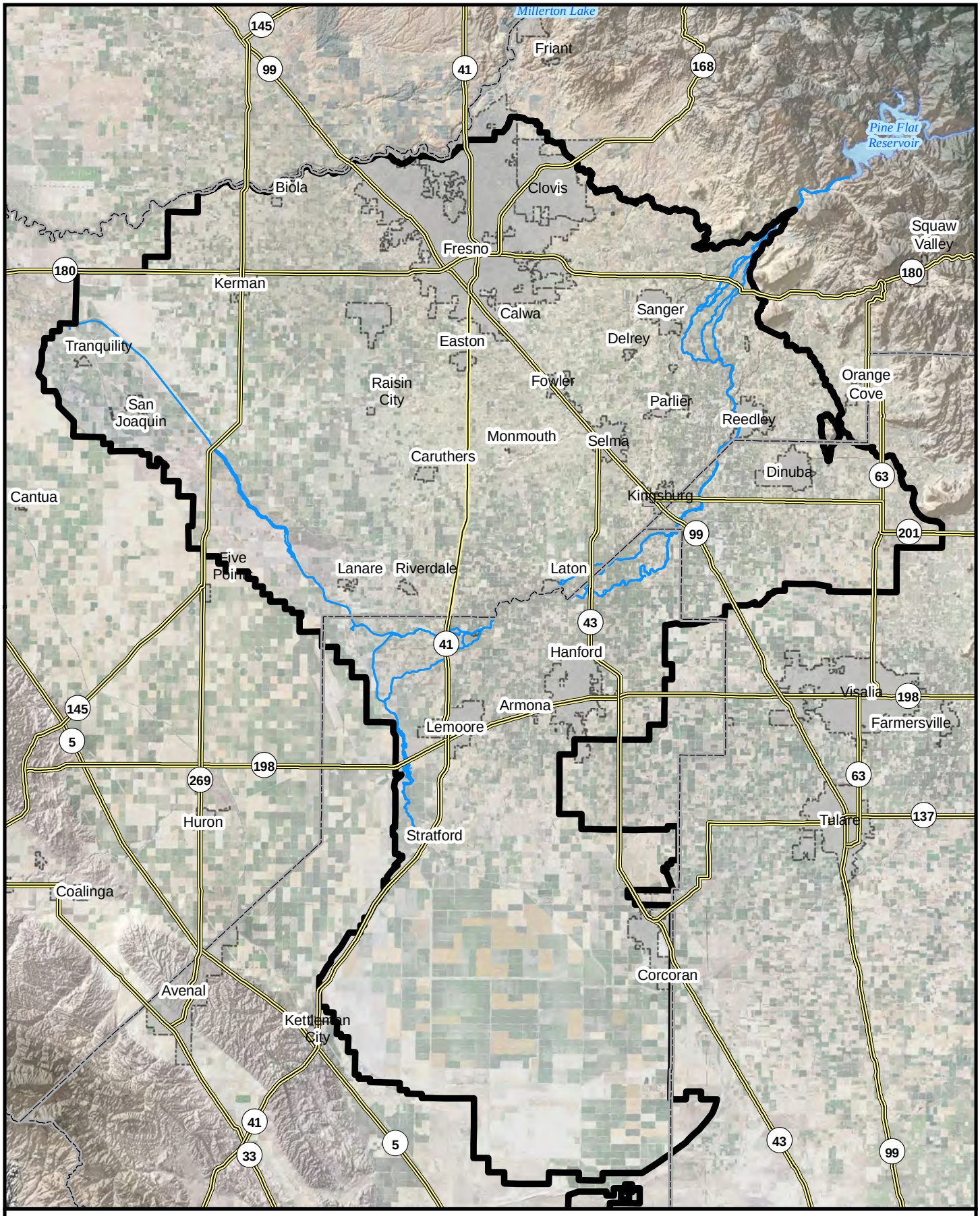
Prepared by:


KINGS BASIN
Water Authority

Groundwater Level Change:

Wet Year: Spring 2011 to Spring 2012





Cities and Communities Near
Kings River Conservation District

8/5/2013

KRCD
Kings River Conservation District

Pine Flat Reservoir
Clovis
Biola
Fresno
Fresno I.D.
Kerman
Fresno Slough W.D.
Mid-Valley W.D.
Sanger
Squaw Valley
Kings River W.D.
Malaga
Easton
Del Rey
Tranquillity
Tranquillity I.D.
San Joaquin
James I.D.
Raisin City
Raisin City W.D.
Bowles
Fowler
Parlier
Reedley
Orange Cove
Selma
Consolidated I.D.
Burrel Ditch Co.
Stinson W.D.
Stinson Canal & Irrigation Co.
Caruthers
Dinuba
East Orosi
Orosi
Cutler
Kingsburg
Cantua Creek
Liberty W.D.
Alta I.D.
London
Liberty Canal Company
Reed Ditch Company
Liberty Millrace Company
Riverdale I.D.
Lanare
Riverdale
Laguna I.D.
Laton
Traver
Crescent Canal Company
Peoples Ditch Co
Kings County W.D.
Ivanhoe
Goshen
Visalia
Farmersville
Upper San Jose Water Co.
Clark's Fork Reclamation District
Lemoore Naval Air Station
Hanford
Lemoore
Lemoore Canal & Irrigation Co.
Last Chance Water Ditch Co.
Lakeside Irrigation W.D.
John Heinlen Mutual Water Co.
Santa Rosa Rancheria
Empire West Side I.D.
Huron
Stratford I.D.
Tulare
Salyer W.D.
Tulare Lake Reclamation District No. 761
LoveLace Water Corp.
Coalinga
Tulare Lake Canal Co.
Corcoran I.D.
Corcoran
Corcoran Irrigation Co.
Woodville
Tipton
Avenal
Melga W.D.
Tulare Lake Basin W.S.D.
Southeast Lake Water Co.
Pixley
Angiola W.D.
Melga W.D.
Alpaugh
Alpaugh I.D.
Earlimart

STATE HWY 99
STATE HWY 41
STATE HWY 168
STATE HWY 180
STATE HWY 145
US HWY 99
STATE HWY 63
STATE HWY 269
STATE HWY 25
STATE HWY 201
STATE HWY 245
STATE HWY 216
STATE HWY 43
STATE HWY 198
STATE HWY 137
STATE HWY 190
STATE HWY 33
STATE HWY 41
CORCORAN
J2

N
W
E
S

0 2.5 5 10 Miles

Districts and Agencies within Kings River Conservation District

April 18, 2007

BDCP
Bay Delta Conservation Plan

BDCP Statewide Economic Impacts

August 2013

The draft Statewide Economic Impact Study evaluated the economic impacts of the Bay Delta Conservation Plan (BDCP) on various interest groups. While other economic studies completed for the BDCP evaluate benefits and costs to water users, this study by The Brattle Group and ICF International looks at whether the project is a worthwhile investment for the state as a whole. The study indicates that **the BDCP would result in a significant net economic benefit to the State of California**. Adding together impacts to which dollar values could be assigned, the BDCP would result in a net improvement in the economic welfare of California residents of $4.8 billion to $5.4 billion. BDCP also will generate over $84 billion in additional business output in California and almost 1.1 million jobs* over the 50-year life of the plan. These figures take into account the induced economic impacts of increased water rates and taxes associated with the cost of BDCP, and the impact of construction activity and targeted land retirement in the Delta.

Among the study's major findings:

Water Supply Reliability

The largest economic impacts of the BDCP are those associated with improved water supply reliability in California. Without the BDCP, state and federal water project deliveries from the Delta, which provides water for 25 million Californians, can be expected to decline by as much as 40 percent as a result of current and future environmental regulations designed to protect listed species.

The BDCP will stabilize project deliveries at close to levels of the recent past. This improvement in water supply reliability alone would increase California business output by over $73 billion over the permit term and create or preserve up to 1.1 million jobs in the Bay Area, Southern California, the San Joaquin Valley, and the Central Coast. These benefits are evaluated relative to a scenario in which the environmental protections that are part of the BDCP are applied to the existing conveyance and habitat in the Delta.

The BDCP reduces the vulnerability of the state and federal projects to large earthquakes. The new conveyance facilities envisioned as part of the BDCP are capable of delivering up to 80 percent of pre-earthquake water supplies, as compared to roughly 20 percent under the existing infrastructure. This improved level of reliability is valued at nearly half a billion dollars.

Construction of New Conveyance Facilities and Habitat Restoration

The in-Delta construction, restoration and operations carried out under the Plan are expected to create over 177,000 jobs and $11 billion in employee compensation in California over the 50-year permit term. These projects will increase the revenues of California businesses by $29 billion. All of these impacts take into account the effects of land retirement in the Delta to conserve listed species.

1.1 million

Number of California jobs associated with improved water supply reliability, construction of new conveyance facilities, and habitat restoration over the 50-year life of the permit

$84 billion

Net increase in statewide economic activity over the 50-year permit term

$29 billion

Increased state business sales as a result of construction and operations of new conveyance facilities and habitat restoration

$11 billion

Total employee compensation expected to be created by in-Delta construction, habitat restoration, and operations

**A job is defined as a position equivalent to one full-time worker for a year.*

Construction of the new water conveyance facilities alone will create more than 110,000 jobs in California over the 10-year construction period. It will generate nearly $8 billion in employee compensation to California workers. Construction spending for just this portion of the BDCP will increase California business sales by over $21 billion.

Adding together the costs to water users and taxpayers, the BDCP is expected to cost Californians roughly $15 billion. These expenditures increase water rates and taxes, redirecting dollars that could have been spent on other goods and services, and decreasing business activity in California by $19 billion and reducing 102,885 jobs over the 50-year life of the permit.

110,000

Number of jobs created as a result of construction of the new water conveyance facilities.

BDCP Construction Impacts in the Delta

Construction of the new conveyance facilities will cause transportation delays and disruptions on Delta roadways, resulting in additional costs to travelers and local businesses. The total impacts of transportation delays over a 9-year construction period are up to about $80 million in 2012 dollars, including the impact of planned traffic mitigation measures.

Construction and operation of new conveyance facilities, and the restoration of habitat, will increase emissions of pollutants that have been linked to adverse health outcomes. The total economic costs of these air quality impacts in the Delta are estimated to be less than $16 million through the purchase of offset credits that reduce pollution in the same air basin. However, the BDCP will reduce the amount of greenhouse gases emitted in the Delta region, providing a net benefit to the state of as much as half a billion dollars.

Changes in the Delta Environment

Overall, the BDCP will enhance recreational activity in the Delta. Those participating in fishing, hunting, boating, birdwatching, and other recreational activities are expected to gain an additional $200 million to $400 million as a result of habitat restoration and other enhancements. These estimated benefits are a measure of what people are willing to pay for their experiences, minus what they actually do pay.

The impact of BDCP on certain properties in the Delta is expected to be negative for properties located near surface structures of the new conveyance facilities, and positive for properties located near areas being protected or restored by the conservation measures. Impacts from construction will be realized primarily during the 9-year construction period, while the benefits on property values of open space created by conservation measures is expected to be permanent.

The BDCP will affect populations of Chinook salmon (the only major commercial fish species in the Delta) by restoring and enhancing floodplains, tidal wetlands, and channel margin habitat in the Delta and Suisun Marsh. Due to the high degree of uncertainty involved in forecasting salmon populations under scenarios with and without the BDCP, these economic impacts are not quantified in dollars. But because BDCP predicts a net positive effect on Chinook populations, the economic effects of BDCP on this fishery are expected to be positive.

Delta Property Values:

\+ Properties located near areas protected and restored by conservation measures

– Properties located near the surface structures of the new conveyance facilities

Salinity

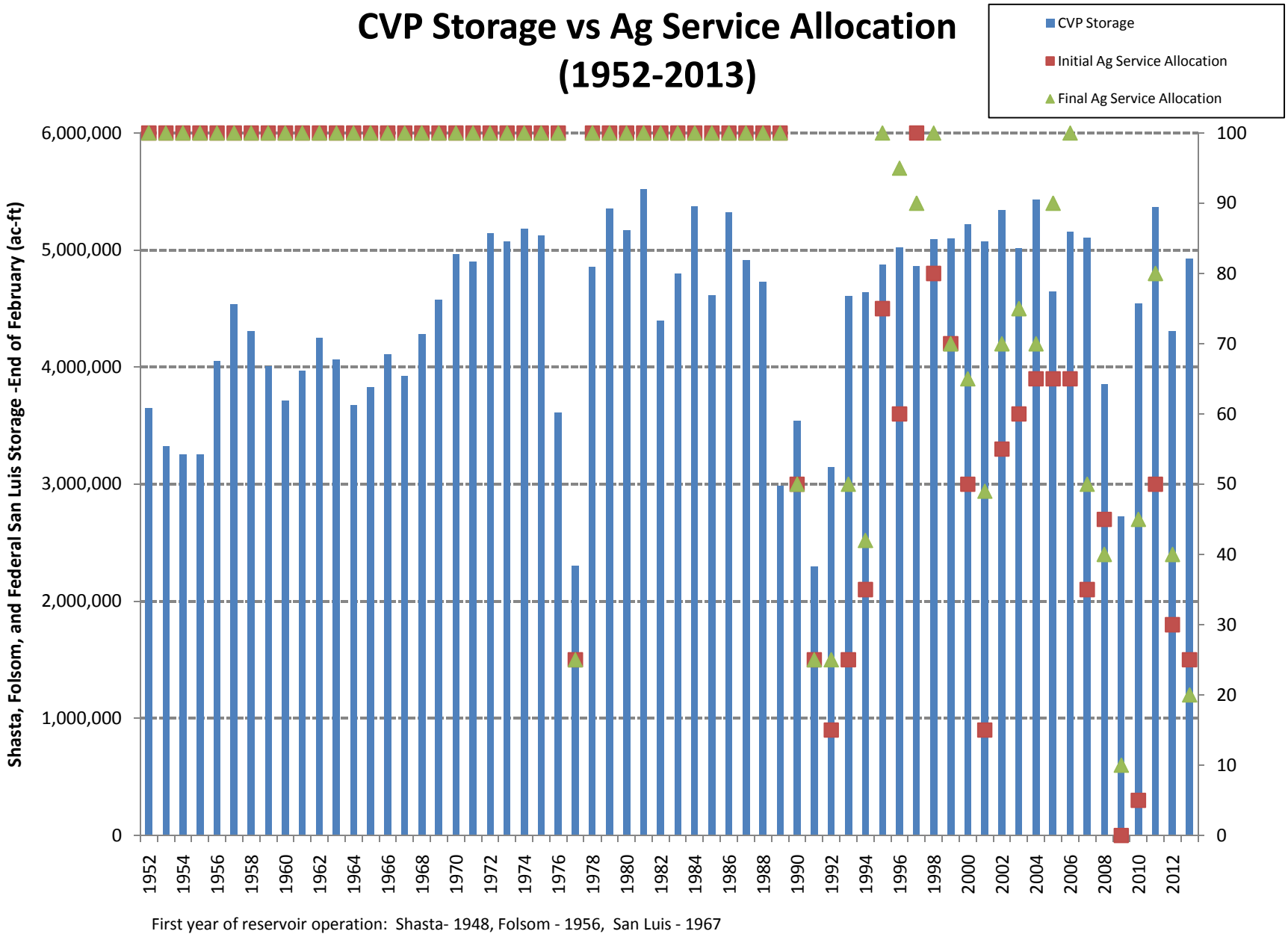
The BDCP is expected to minimally alter the levels of salinity and bromides in Delta waterways. State and federal water contractors benefit by roughly $2 billion as a result of reduced salinity of project deliveries.

The BDCP will also affect the salinity of irrigation water used by some Delta farmers. Using a model developed by the Delta Protection Commission, the income losses from increased salinity are projected to be $34 million over 40 years of new water operations, an average annual impact of $850,000.

Implementing the BDCP would substantially increase economic welfare, business activity, and employment in California.

The draft Statewide Economic Impacts Study is available online at **www.BayDeltaConservationPlan.com**.

CVP Storage vs Ag Service Allocation (1952-2013)



T. Boardman, SLDMWA
8/1/2013

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Securing So. California's Water Future

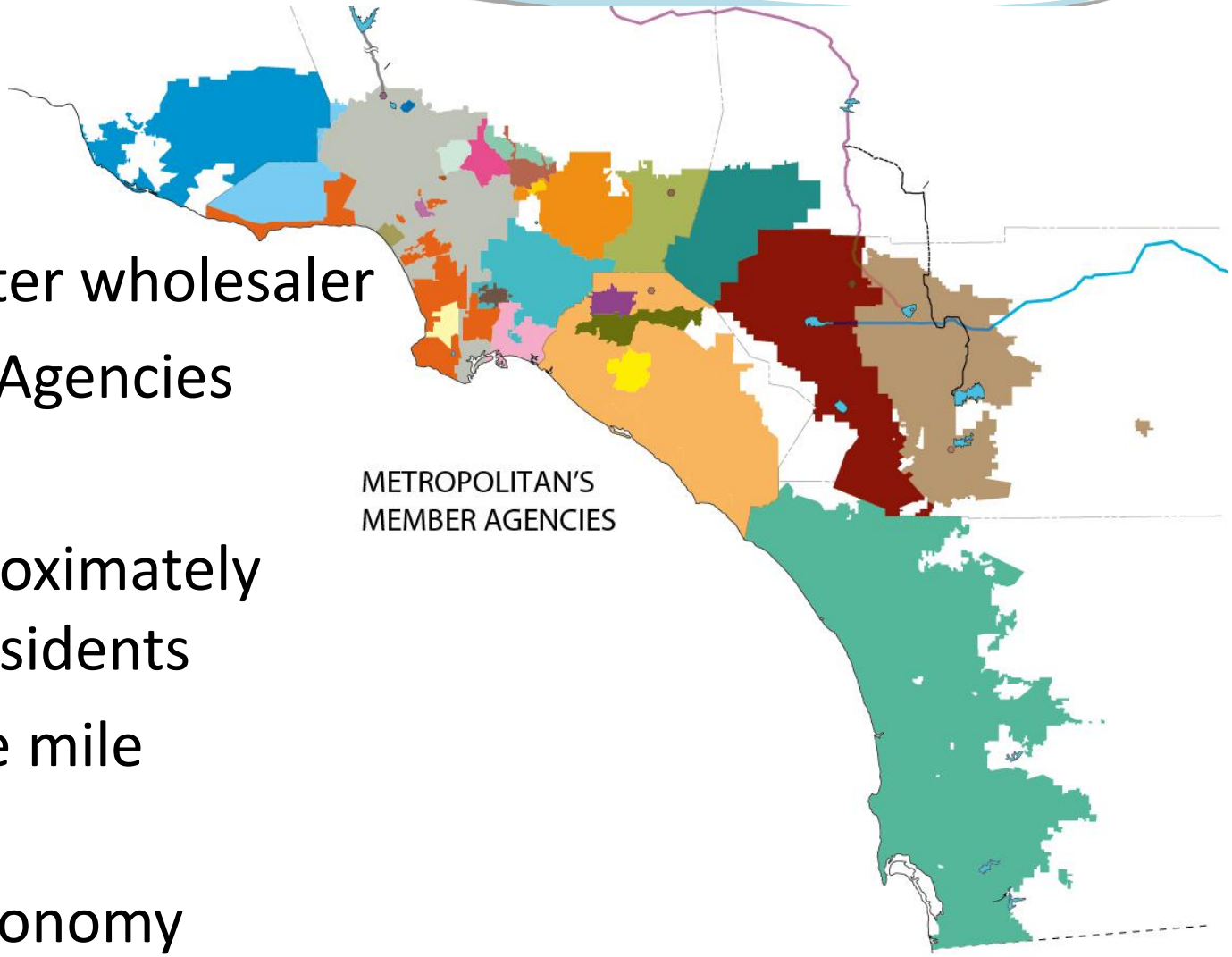
Roger K. Patterson, Asst. General Manager
Strategic Water Initiatives

Assembly Select Committee on Regional
Approaches to Addressing the State's Water Crisis

August 9, 2013

Metropolitan Water District of So. California

- Regional water wholesaler
- 26 Member Agencies
- 6 counties
- Serving approximately 19 million residents
- 5,200 square mile service area
- $1 trillion economy

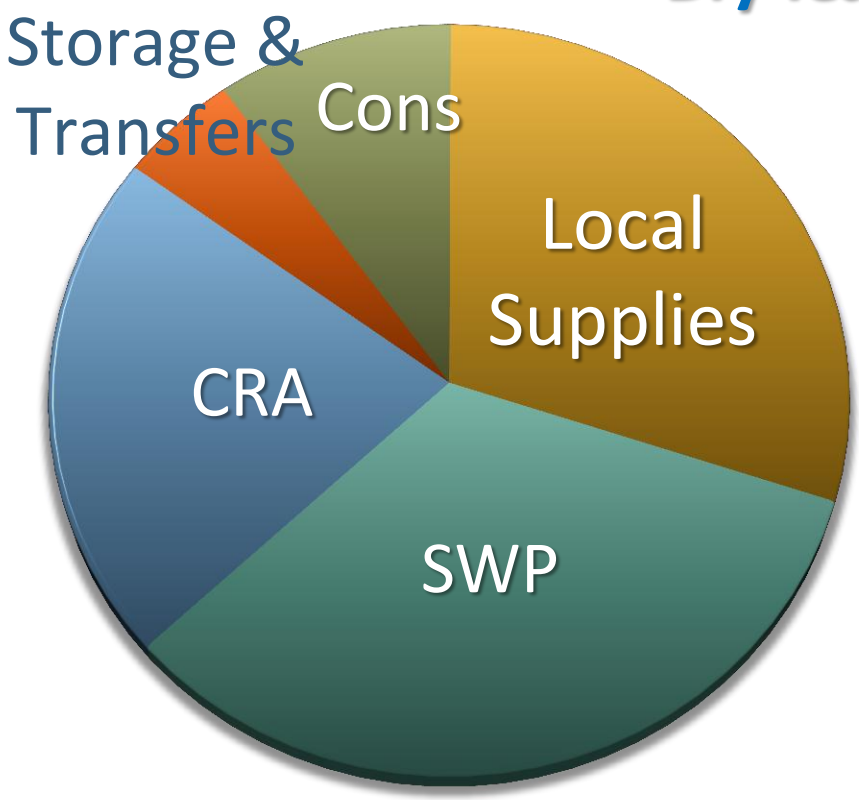


Metropolitan's Diverse Water Supplies

- Southern California Water Portfolio
  - 25% Colorado River
  - 30% State Water Project (through the Delta)
  - 45% Local Supplies
    - Los Angeles Aqueduct
    - Conservation
    - Groundwater
    - Recycling
    - Desalination

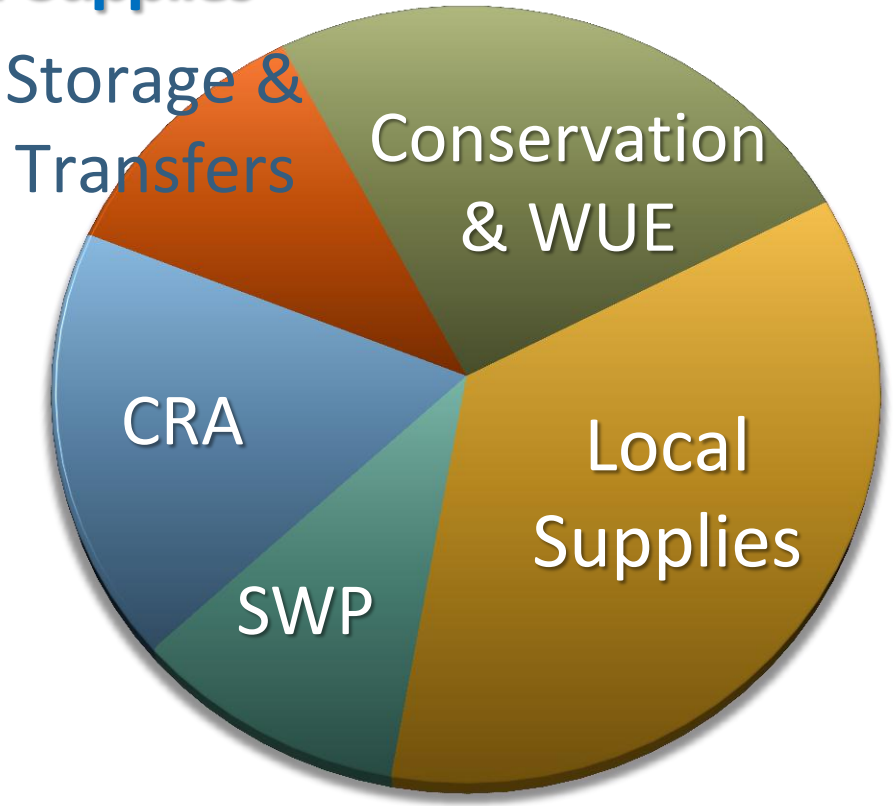
Diversification of Water Portfolio

Dry Year Supplies



Early 1990's

Heavy dependence on imported supply and SWP Diversions



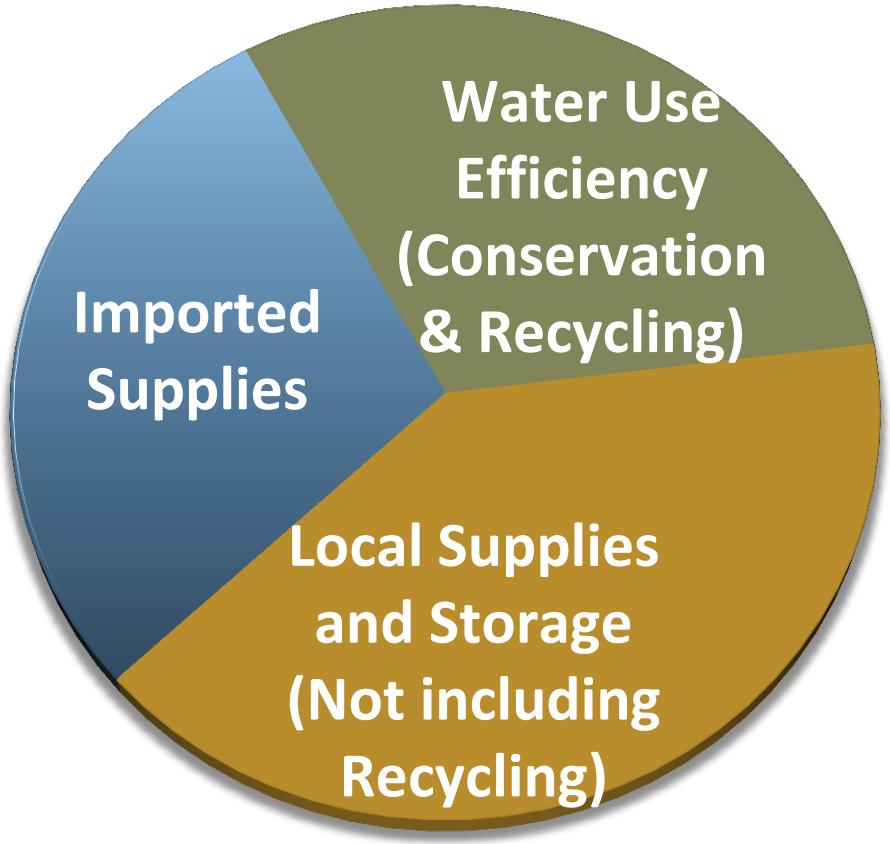
2010

Integrated Resource Plan Strategy

Emphasis on Conservation, Local Supplies, Storage and Transfers

Reducing Reliance on Imported Water

Metropolitan's Long-Term Water Plan



2035 Dry-Year Target

Projected Dry-Year Supply Ratio in 2035 (Source: 2010 Integrated Regional Plan)

State Water Project: Essential Baseline

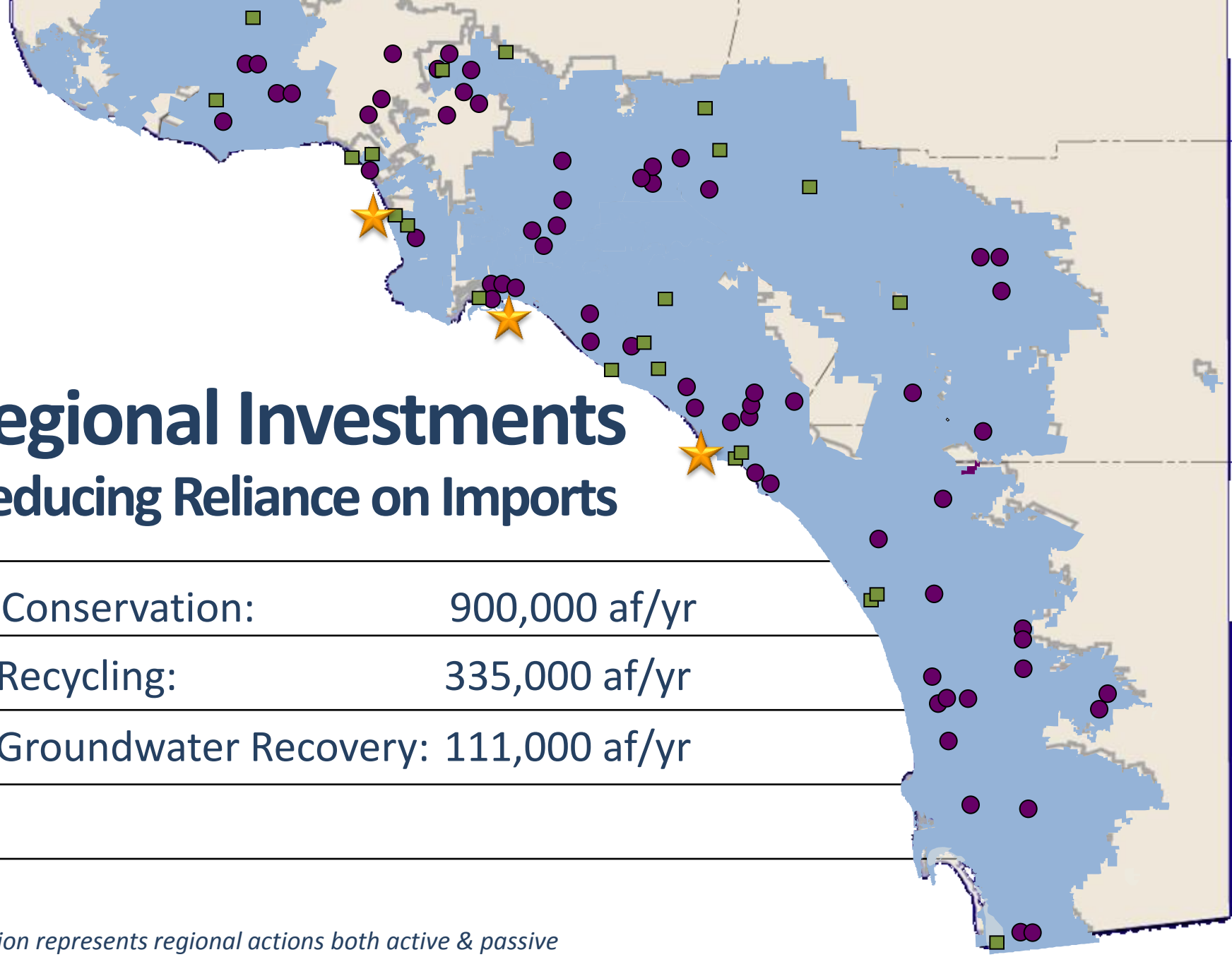
- Southern California depends on a reliable baseline supply of water flowing through the Delta for:
  - Recycled water
  - Groundwater replenishment and recovery
  - Blending/stretching other supplies
    - Water quality and salinity management
    - Conservation

Delta Infrastructure Improvements are Critical to Water Quality

- Conveyance improvements critical to more recycling, groundwater storage and cost-effective brackish desalting
- Salinity reduction benefits from SWP are essential

Supply	Salt (TDS – mg/l)	Lbs. of salt / acre foot
State Water Project (Current)	~ 250 mg/l	680 lbs/af
State Water Project (New Conveyance)	~ 100 mg/l	272 lbs/af

Supply	Salt (TDS – mg/l)	Lbs. of salt / acre foot
Colorado River	~ 500 to 700 mg/l	1,360 to 1,900 lbs/af



Regional Investments

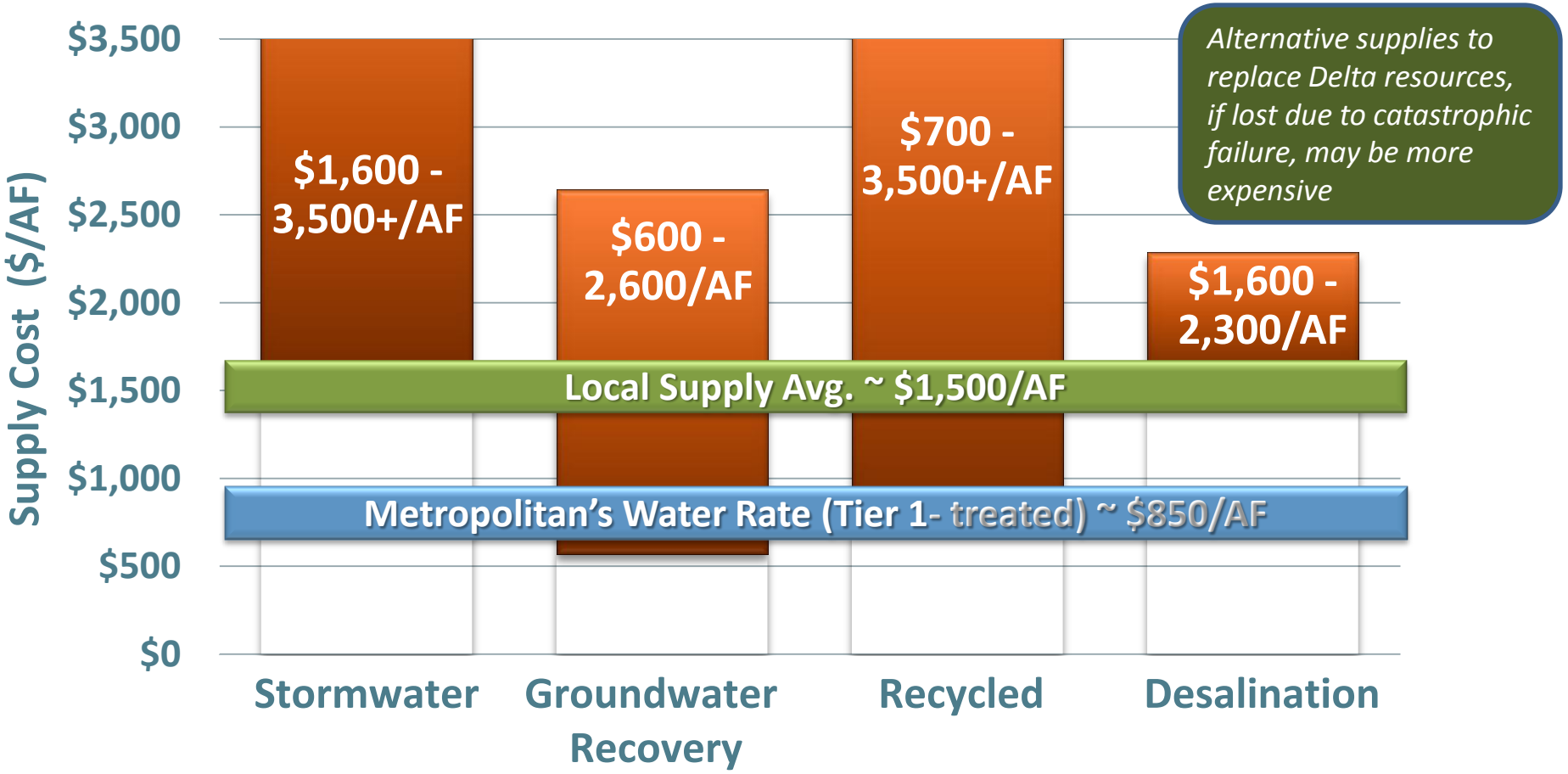
Reducing Reliance on Imports

Conservation:	900,000 af/yr
Recycling:	335,000 af/yr
Groundwater Recovery:	111,000 af/yr

Conservation represents regional actions both active & passive
Recycling & groundwater represents total regional production 2012 (Metropolitan & member agency)

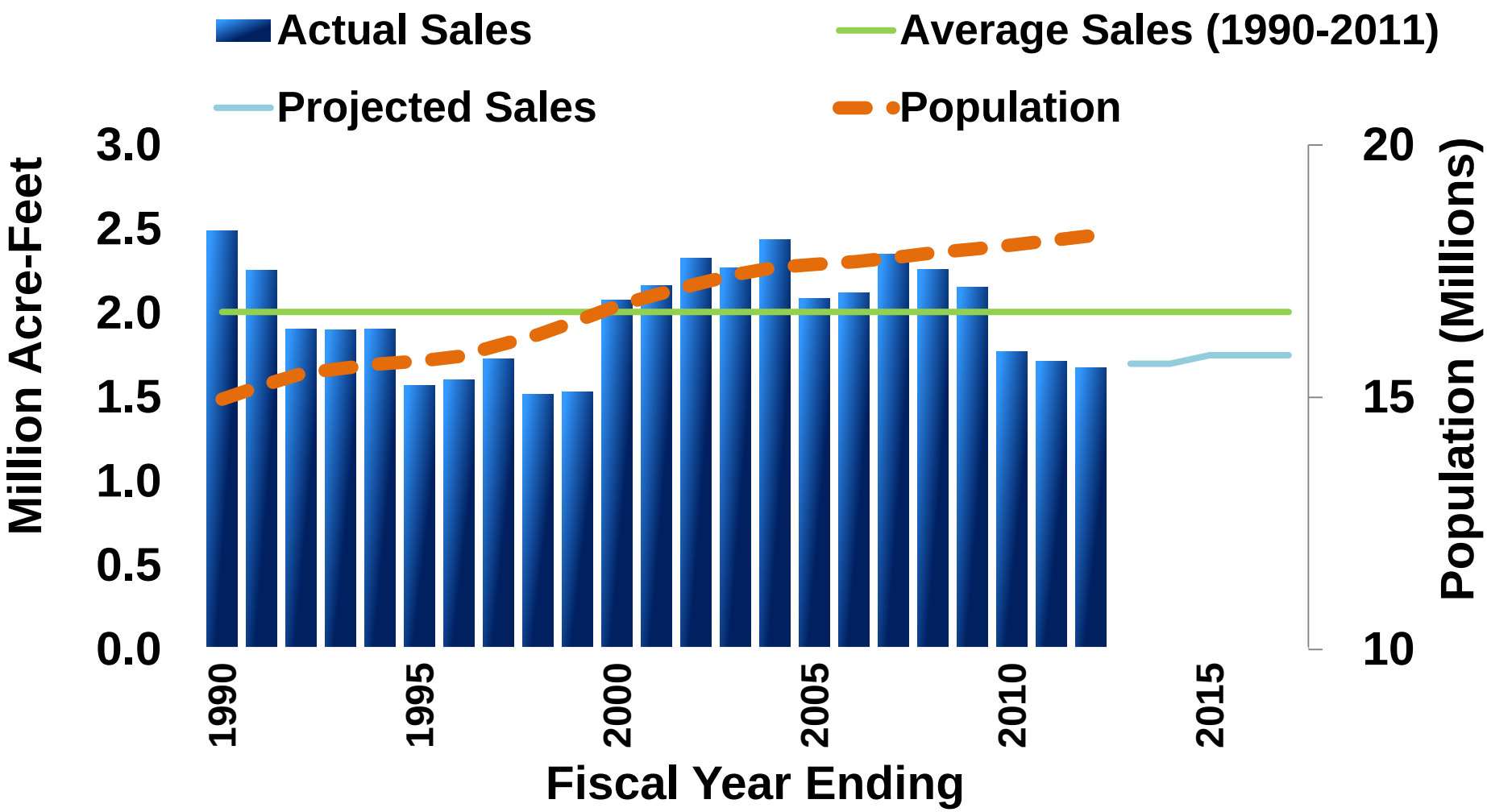
Cost Comparison (per acre-foot)

Metropolitan is committed to meeting future additional water supply needs through local resources and conservation



Ranges based on representative sample of existing and future projects within Metropolitan's service area. Costs may vary for end-users due to a wide variety of factors, including local capital and O&M costs required to deliver water to end-users.

Reduced Imports Since 1990 with Increasing Population



For further information, please contact:

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(916) 650-2642
kcole@mwdh2o.com