

California Water Plan Update 2009

South Coast Regional Report Overview & Outline

2009 Regional Workshops

California **Water Plan** Update **2009**

INTEGRATED WATER MANAGEMENT



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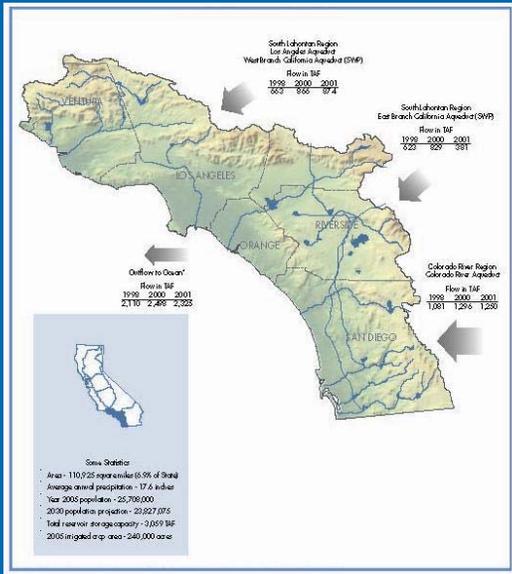
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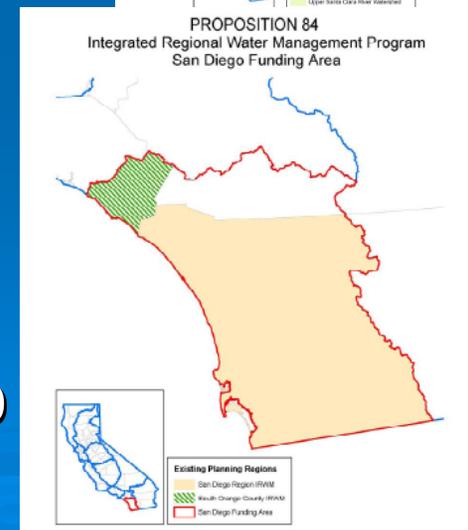
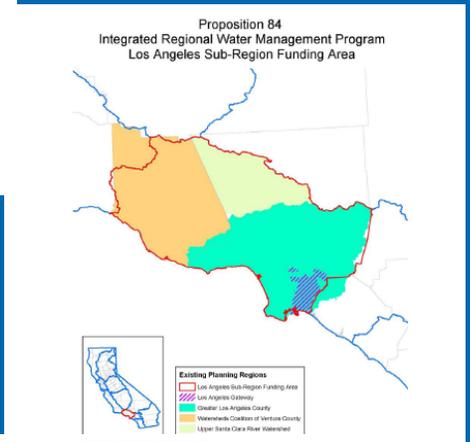
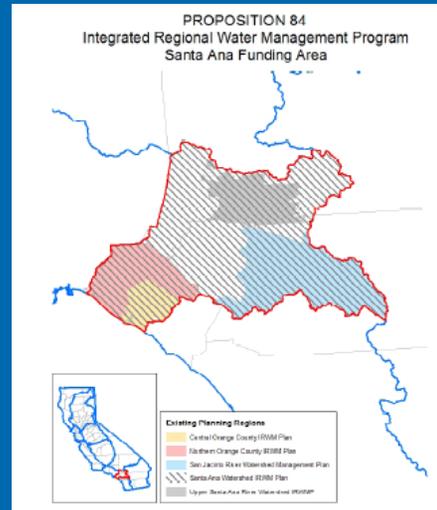
January 2009

Regional Report Outline

Setting



Relationship with other Regions



Current Water Conditions



Regional Planning & Management

Water Portfolios

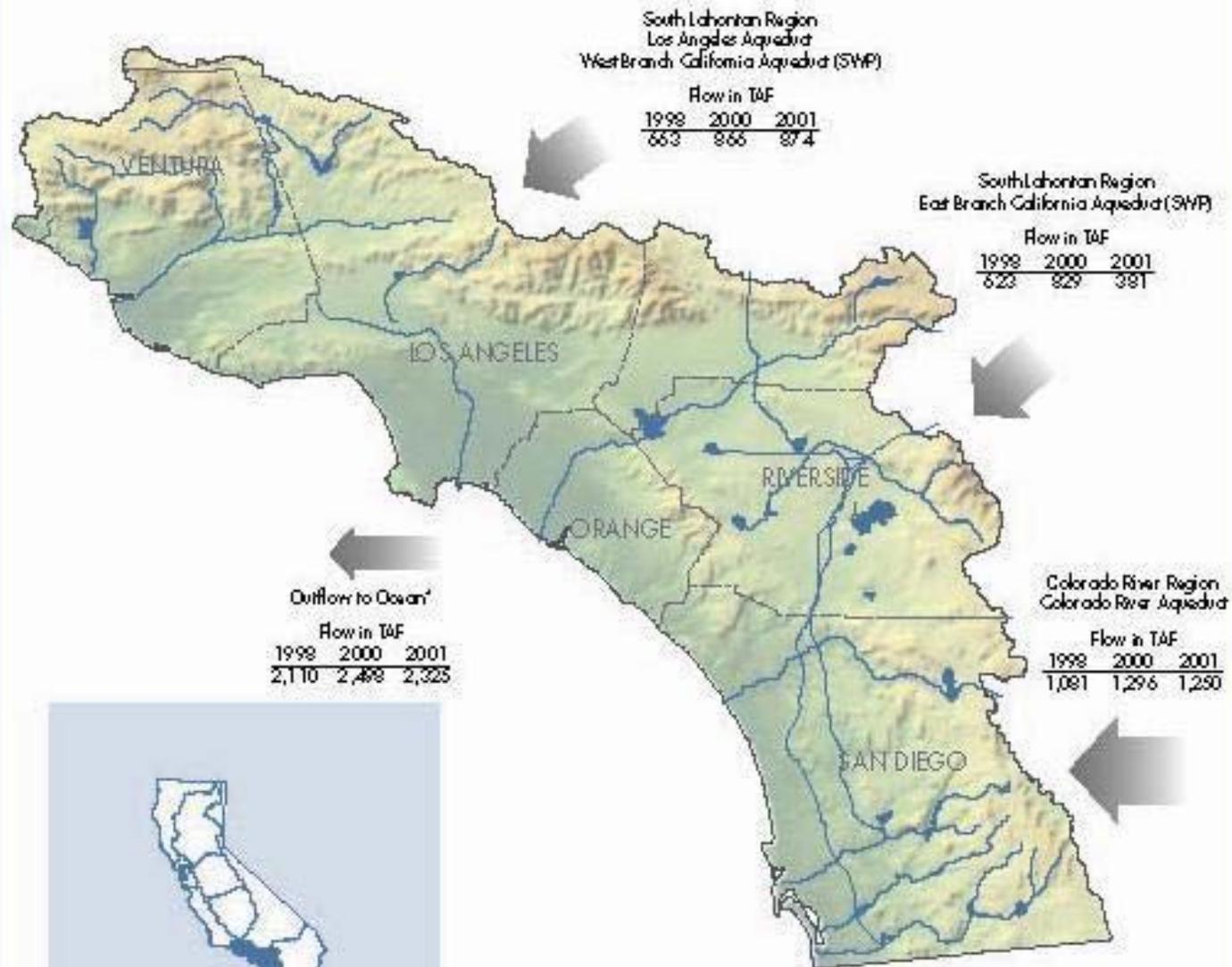
Selected References

Looking to the Future

South Coast Hydrologic Region Regional Report Highlights

- Flow Diagrams
- Water Balances
- Supplemental Data Tables
- Narratives
- Water Quality
- Flood Management
- Watersheds and Ecosystems

South Coast Hydrologic Region Setting



Some Statistics

- Area - 110,925 square miles (6.9% of State)
- Average annual precipitation - 17.6 inches
- Year 2005 population - 19,600,000
- 2030 population projection - 27,092,000
- Total reservoir storage capacity - 3,059 TAF
- 2005 irrigated crop area - 240,000 acres

South Coast Hydrologic Region Setting Cont'd.

➤ Watersheds

- 19 major watersheds in 4 Planning Areas (PA)
 - Santa Clara/Ventura PA – 3 major watersheds
 - Ventura River, Santa Clara River, Calleguas Creek
 - Los Angeles PA – 4 major watersheds
 - North Santa Monica Bay, Los Angeles River, Dominguez Channel, San Gabriel River
 - Santa Ana PA – 3 major watersheds
 - Santa Ana River, San Diego Creek, San Jacinto River
 - San Diego PA – 9 major watersheds
 - San Juan, Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, San Diego River, Sweetwater, Otay, and Tijuana.

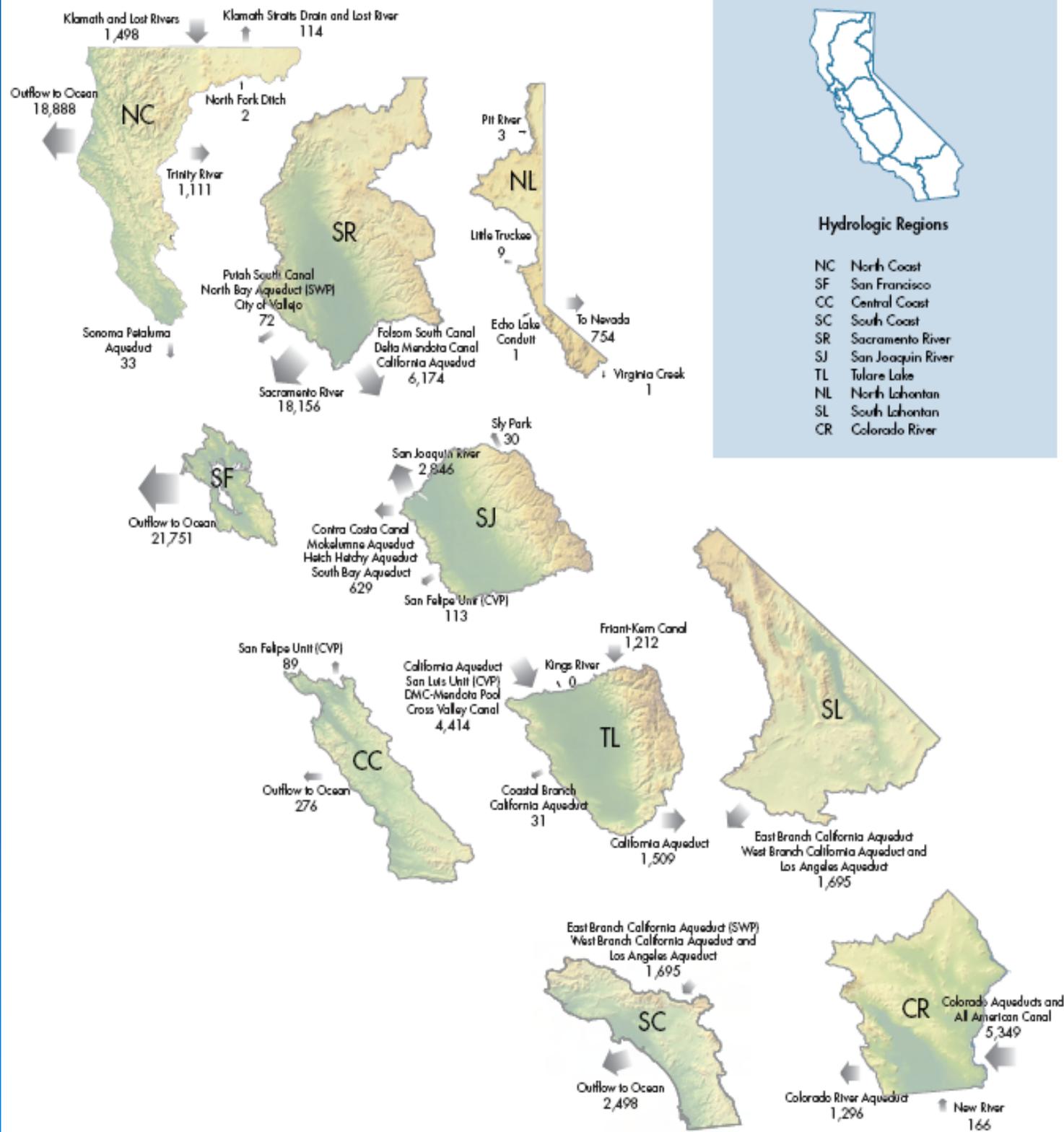
South Coast Hydrologic Region Setting Cont'd.

➤ Major Ecosystems

- **Santa Clara/Ventura Planning Area**– Aquatic and riparian habitats along Ventura and Santa Clara rivers and their tributaries and estuaries
- **Los Angeles Planning Area**– Intermittent canyons in the inland San Gabriel Mountains and coastal Santa Monica Mountains
- **Santa Ana Planning Area** – Upper Newport Bay and the constructed wetlands behind Prado Dam, Seven Oaks Dam, and Hemet/San Jacinto
- **San Diego Planning Area** – Coastal lagoons and wetlands, protected reservoir lands, and the San Dieguito River Park area

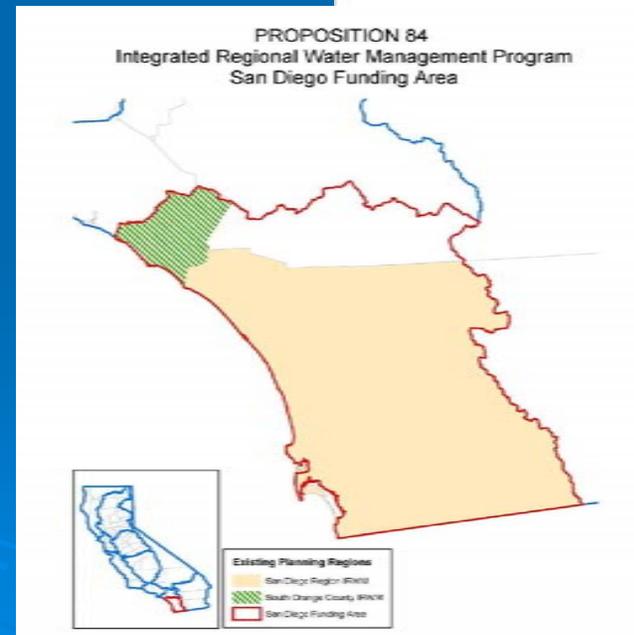
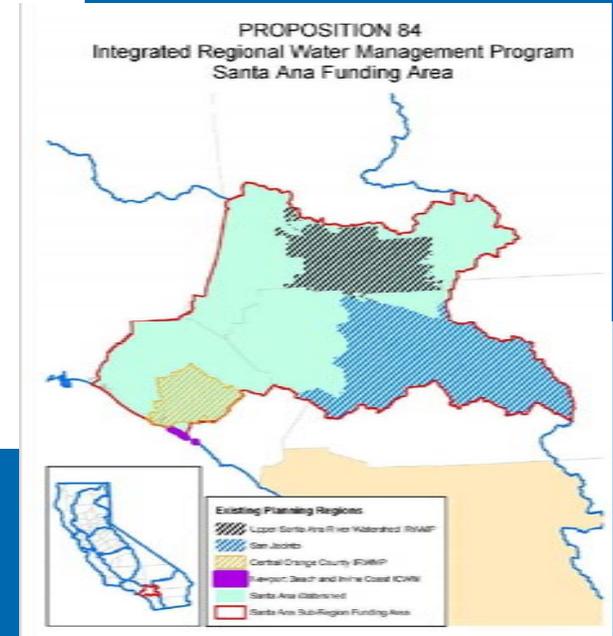
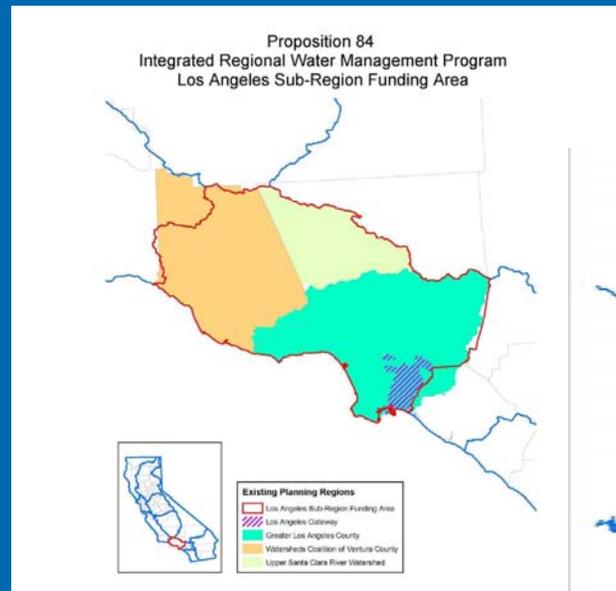
Relation with other Regions

- Sacramento-San Joaquin Delta
- Colorado River System
- Owens Valley/Mono Basin
- Other Water Storage and Transfers



South Coast Regional Water Planning & Management

- Currently engaged in 11 IRWM planning efforts
- Collaboration has resulted in development of multi-agencies projects



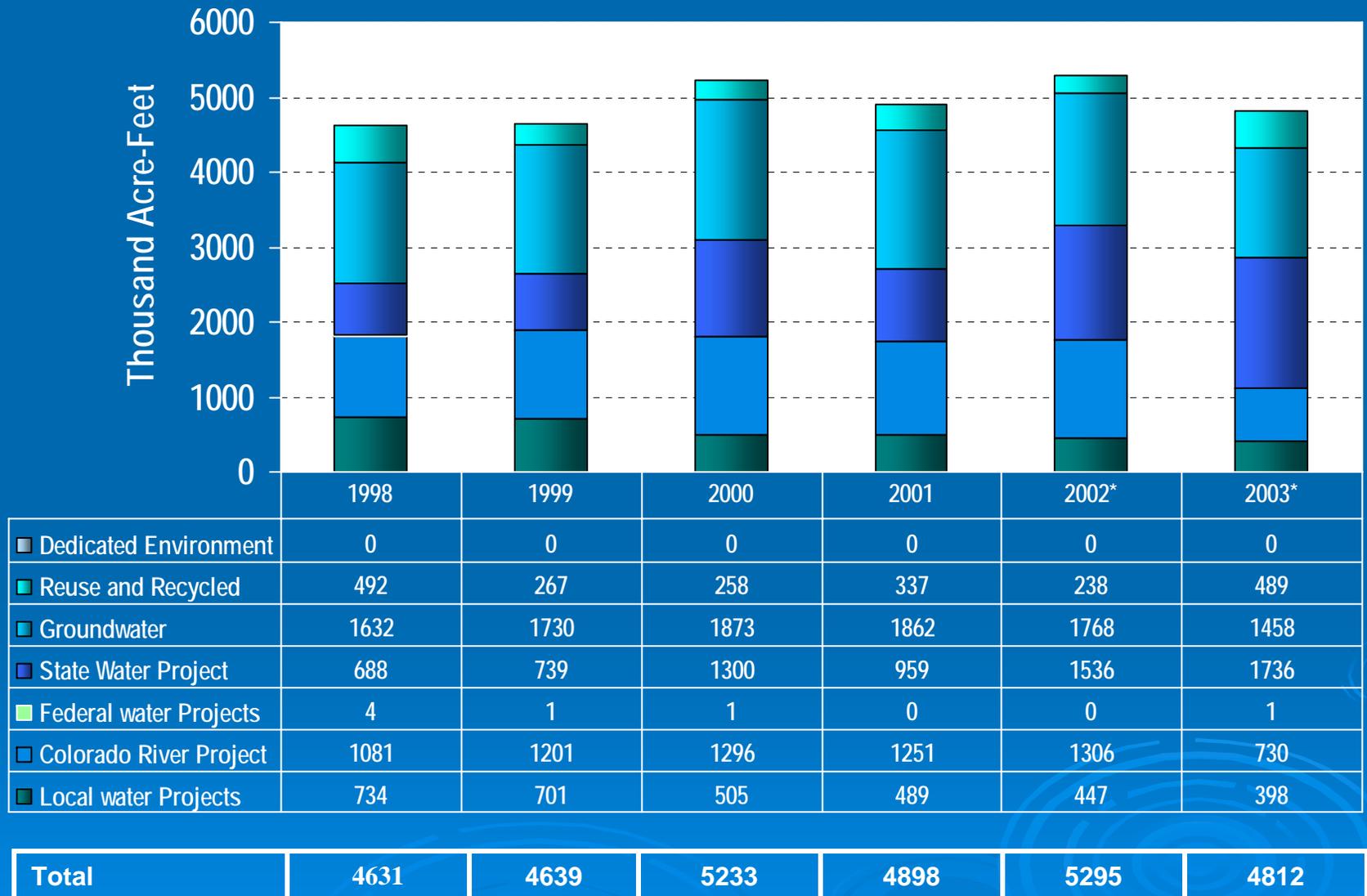
South Coast Regional Water Planning & Management - IRWM Plans

- SAWPA (One Water One Watershed) IRWMP (2005) - \$25M
- Western MWD IRWMP (2006) - \$495,000 Planning
- Greater LA County IRWMP (2006) - \$25M, Plus \$1.5M in planning in 2006
- Watersheds Coalition of Ventura County IRWMP (2006) - \$25M; plus \$220,000, 2006 Planning
- South Orange County IRWMP (2006) - \$25M
- Upper Santa Ana River IRWMP (2007)
- Central Orange County IRWMP (2007)
- San Jacinto River Watershed IRWMP (2007) - \$500,000 Planning
- Upper Santa Margarita IRWMP (2007)
- San Diego IRWMP (2007) - \$25M
- Upper Santa Clara River IRWMP (2008)

Currently involved in developing IRWM Plans:

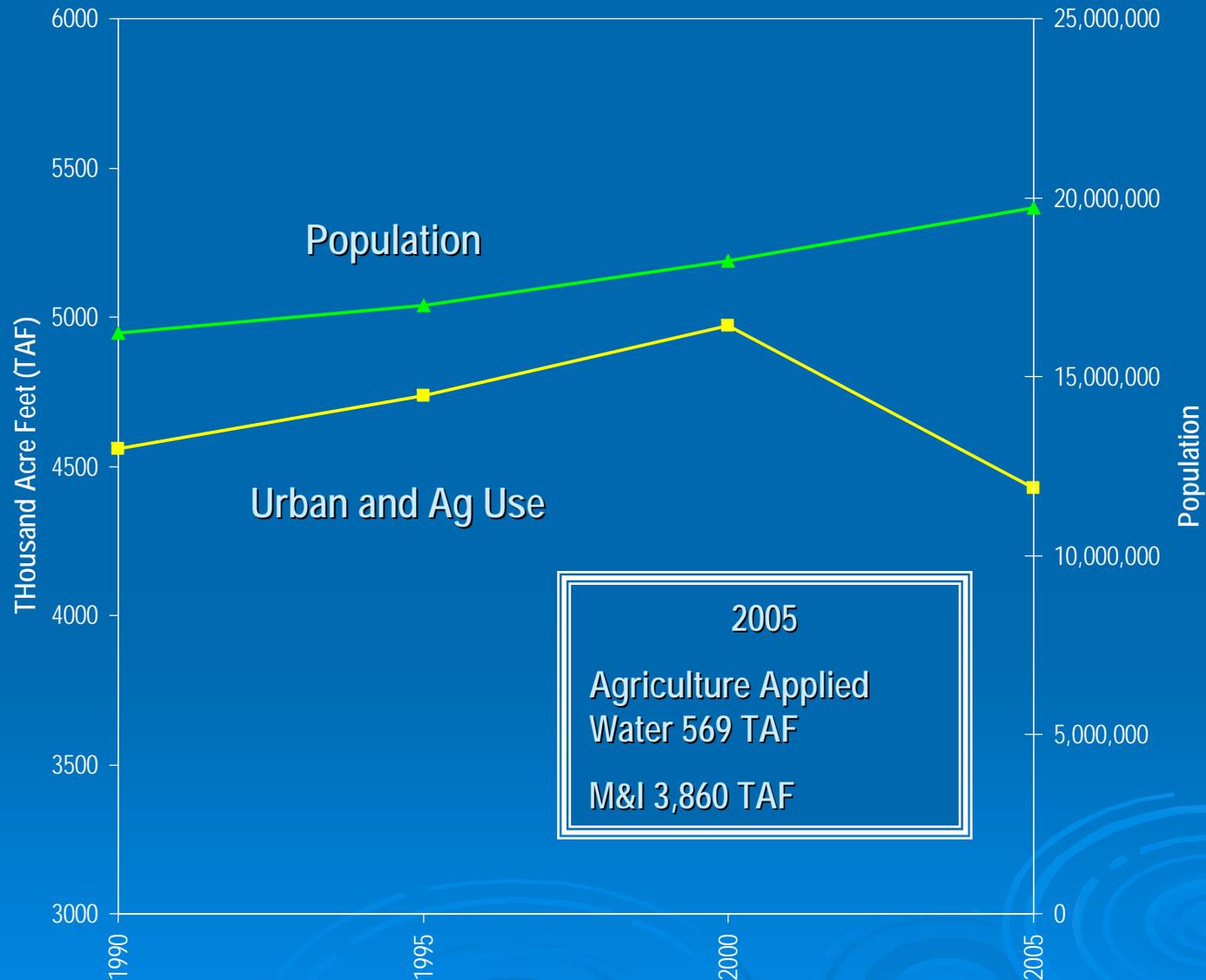
- Gateway Cities IRWM
- Northern Orange County IRWM

South Coast Hydrologic Region Portfolio Data – Water Supply



* Preliminary, subject to revision

South Coast Hydrologic Region Water Use & Population Comparison



South Coast Region Water Conditions: Portfolio Data – Water Uses



* Preliminary, subject to revision

Flood Management is Incorporated in the CWP Update 2009

SOUTHERN CALIFORNIA FLASH FLOODS



Historic
Floods

Flood
Hazards

BURBANK DEBRIS FLOW BELOW HARVARD BURN AREA



LOS ANGELES COUNTY COURTHOUSE



Governance

Risk
Management

PRADO DAM SPILLWAY



Flood Management Report Content

Historic Floods

- January 9-12, 1862, Orange County Flood,
- February 1937, Santa Ana, 450 year event

Flood Governance

- Major agencies involved in the planning and response to flood disasters include the Federal Emergency Management Agency, U. S. Army Corps of Engineers, Department of Water Resources, Office of Emergency Services, and select County Departments

Flood Management

➤ Flood Risk Management

- Structural Approaches—

- Santa Ana Mainstem Project is designed to protect communities in Orange, Riverside, and San Bernardino Counties.
- Los Angeles County Drainage Area (LACDA) Project prevents an estimated \$2.3 billion in flood damages resulting from a 100-year overflow event affecting 14 communities and over 500,000 people living within the 100-year floodplain.

- Land Use Management—

- Most streams with flood control infrastructure have been designated floodways, and development, within floodways, is regulated through ordinances
- Collaboration among federal, state, and communities through the National Flood Insurance Program

- Disaster Preparedness, Response, and Recovery

- State, federal, and local agencies are responsible for the preparation, response, and recovery from natural disasters
- Local agencies are the first responders to flood events. When their resources are exhausted, the State (DWR, OES) can provide assistance, followed by federal agencies (USACE, FEMA)

Flood-Related Challenges

➤ Facilities and maintenance

- Southern California has many flood control dams, debris basins, and miles of concrete-encased stream channels
- Most flood waters are typically shunted to the sea, but we're improving these flood waters to recharge some aquifers.

➤ Coordination and regulation

- Conflicting demands for flood control and groundwater management

➤ Environmental considerations

- Urban sprawl growth pressure in floodplains
- Recent California Fires has increased potential for flood or debris flow hazards

South Coast Hydrological Region Accomplishments

- Integrating Water Management Efforts
- Diversifying Supplies
- Reducing Water Demands
- Increasing Local Surface Storage
- Replenishing Groundwater
- Desalting Brackish Supplies
- Recycling Water
- Controlling NPS Pollution
- Managing Flood and Emergency Hazards
- Central/West Basin Judgment (in Process)
- Alluvial Fan Task Force (in process)
 - Developing guidance for local governments

Key Issues/Challenges

➤ Resource Development

- Development and expansion of other supplies (e.g. ocean desalination and recycled water) require analysis of costs and tradeoffs between options

➤ Drought

- A constant concern for water districts throughout the region
- Uncertainty of future water imports have led to aggressive development of local alternatives and transfer agreements

➤ Climate Change

- Changes in statewide precipitation and runoff volume
- Sea level rise may impact local aquifers and Delta water quality via sea water intrusion

➤ Sustainability

- Integrated water resources management is key to sustainable development
- Energy and GHG emission impact must be considered in water supply development

Key Issues/Challenges Cont'd.

➤ Environmental Concerns in Delta

- Uncertainties about availability of SWP water resulting from court ordered restrictions

➤ Groundwater Overdraft

- Increased pumping due to urban, industrial and agricultural developments
- Natural recharge insufficient to maintain current pumping levels
- Over-extraction impacts include seawater intrusion, subsidence and water rights disputes

➤ Runoff Management

- Storm water and urban runoff contribute contaminants to local creeks and rivers, lagoons, beaches, and bays

➤ Salinity

- High salinity levels and perchlorate contamination from imported water sources and ag tailwater and seawater intrusions require higher levels of treatment
- Long-term salt balance of region's groundwater is critical management issue

Key Issues/Challenges Cont'd.

➤ Water Recycling

- TDS levels and presence of pharmaceuticals and other emerging chemicals in treated wastewater have led to public health and environmental concerns
- Inland water districts have salt accumulation problems in their groundwater basins due to lack ocean outfall or stream discharge

➤ Flood Control Infrastructure

- Major challenge include maintenance of 100-year flood protection
- Flood control projects threatened as urbanization in upper watersheds adds to storm volumes

Agenda Item 10

Part 2

Resource Strategies

27 Resource Management Strategies

A Range of Choices

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 & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Flood Management

- Flood Risk Management

Improve Water Quality

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

Practice Resource Stewardship

- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Forest Management
- Land Use Planning & Management
- Recharge Areas Protection
- Water-Dependent Recreation
- Watershed Management

South Coast Hydrologic Region Water Management Responses

- The region implements virtually all of the 31 state resource management strategies
- Some examples of strategies being used today:
 - Water conservation
 - Local agencies engaged in aggressive urban and agricultural conservation programs
 - Water Transfers
 - Seen as a key tool for future water management
 - Conjunctive Management and Groundwater Storage
 - Protection of recharge and spreading grounds
 - Recycled Water
 - Desalination – Brackish and Seawater
 - Urban Runoff Management

South Coast Hydrologic Region Planning for the Future

Focus on three important areas:

- Protection of Imported Supplies
- Development of Local Supplies
- Creation of Integrated Flood Control Projects

Regional Report Contact Information

DEPARTMENT OF WATER RESOURCES SOUTHERN REGION

Mark Stuart

marks@water.ca.gov

Vern Knoop

vernk@water.ca.gov

Dave Inouye

davidi@water.ca.gov