

California Water Plan Update 2009

Colorado River Regional Report Overview & Outline

2009 Regional Workshops

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

INTEGRATED WATER MANAGEMENT



Bulletin 160-09 • Department of Water Resources

Volume
REGIONAL REPORTS

3

Public Review Draft

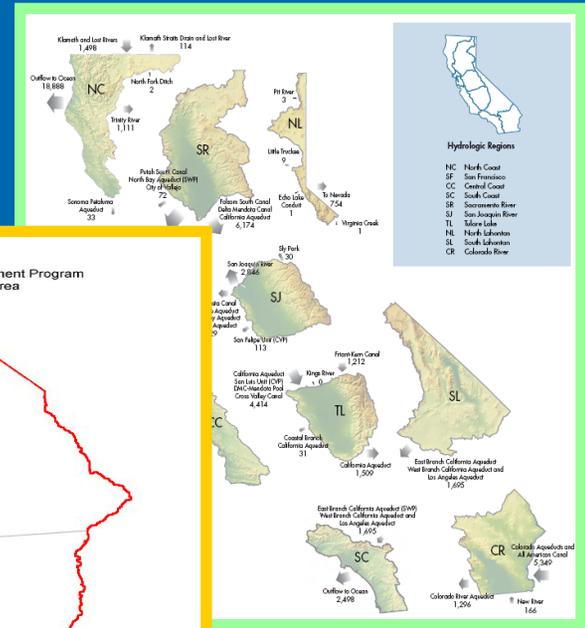
January 2009

Regional Report Outline

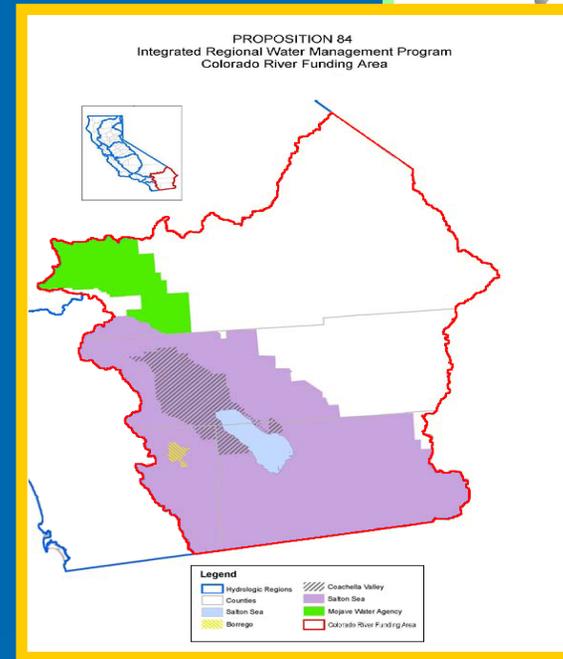
Setting



Relationship with other Regions

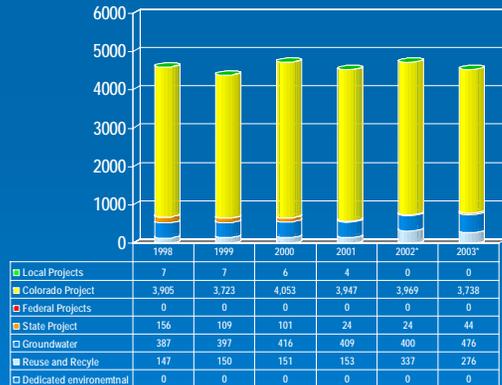


Regional Planning & Management

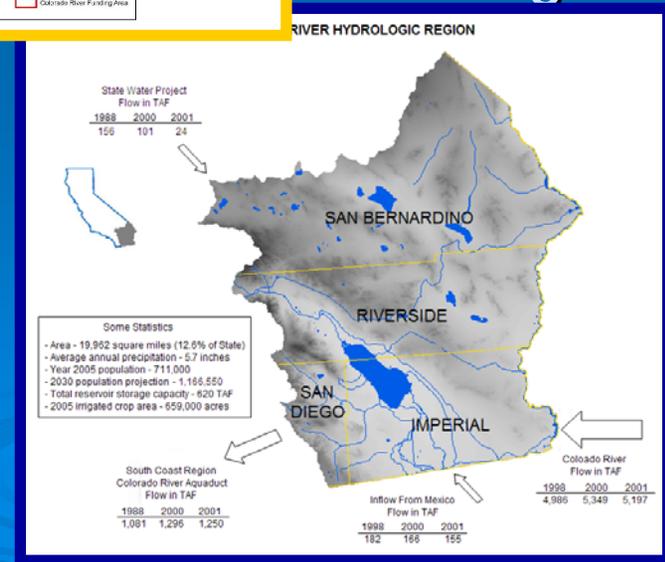


Regional Setting

Current Water Conditions



Flood Management



Water Portfolios

Selected References

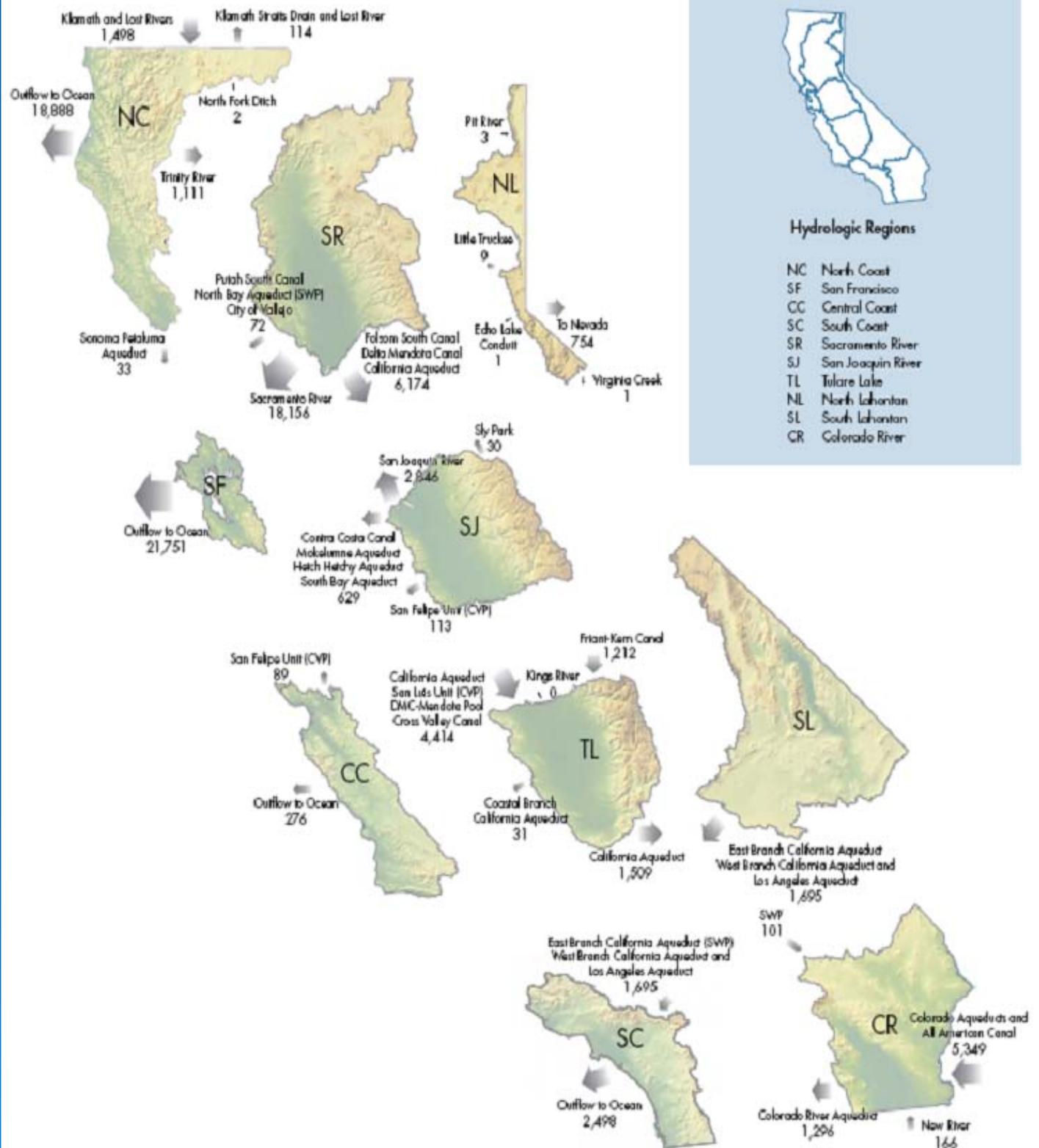
Colorado River Hydrologic Region Regional Water Conditions

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

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-8 to 11-15)

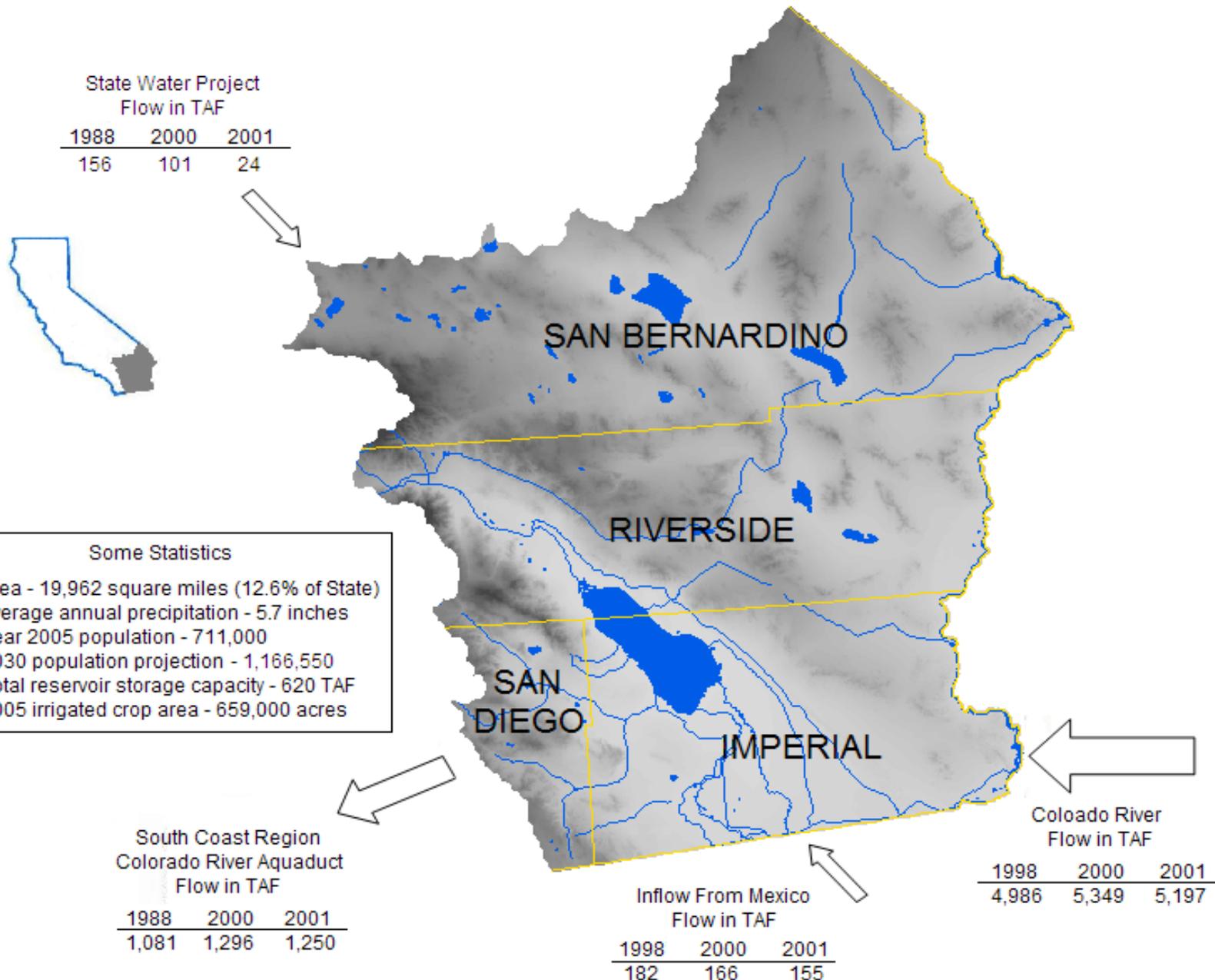
Relationship with other Regions

- All-American Canal
- Colorado River Aqueduct
- State Water Project



Colorado River Region Setting

COLORADO RIVER HYDROLOGIC REGION



State Water Project
Flow in TAF

1988	2000	2001
156	101	24

- Some Statistics
- Area - 19,962 square miles (12.6% of State)
 - Average annual precipitation - 5.7 inches
 - Year 2005 population - 711,000
 - 2030 population projection - 1,166,550
 - Total reservoir storage capacity - 620 TAF
 - 2005 irrigated crop area - 659,000 acres

South Coast Region
Colorado River Aquaduct
Flow in TAF

1988	2000	2001
1,081	1,296	1,250

Inflow From Mexico
Flow in TAF

1998	2000	2001
182	166	155

Colorado River
Flow in TAF

1998	2000	2001
4,986	5,349	5,197

Colorado River Hydrologic Region Setting

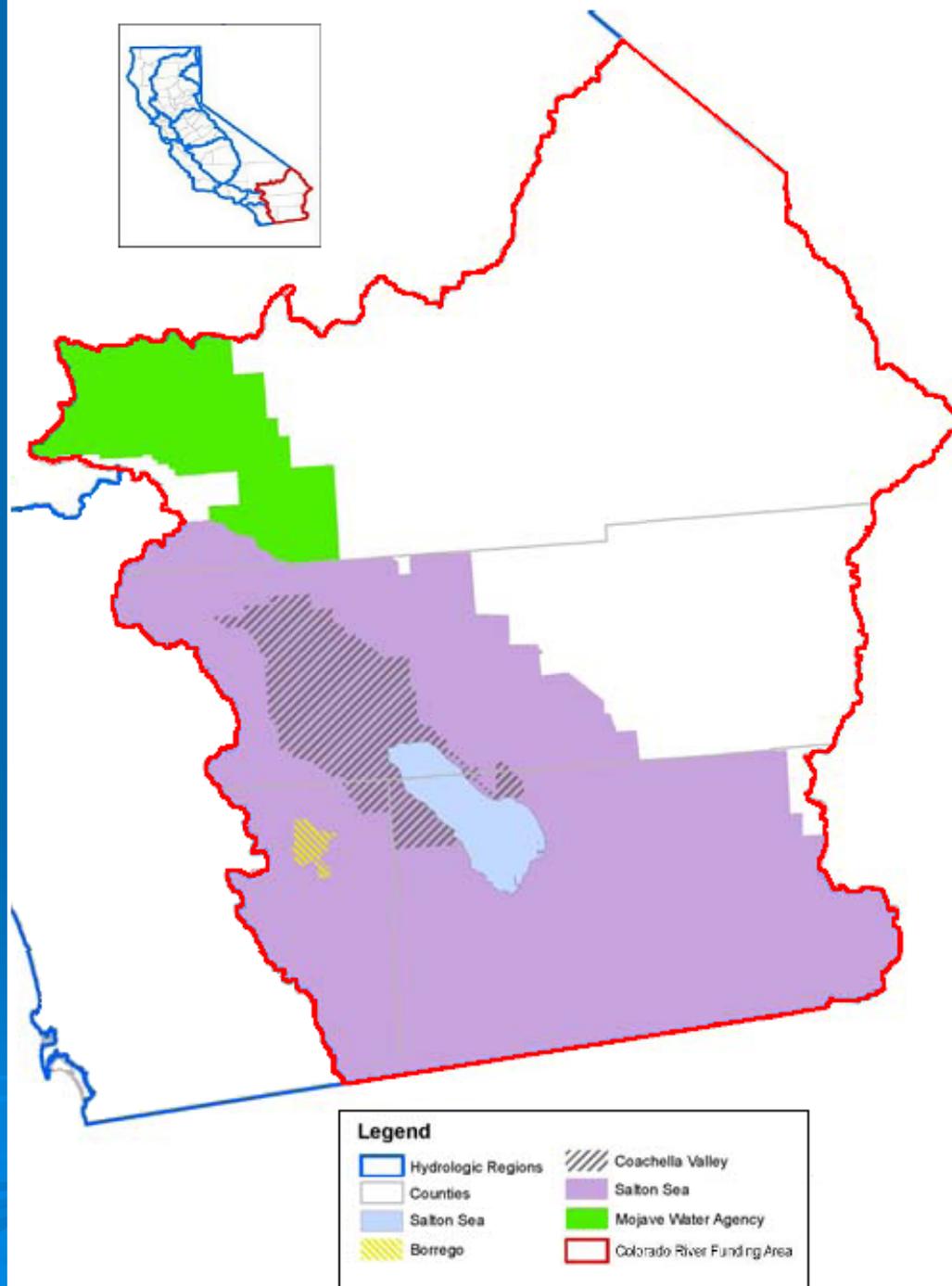
- Home to over 711,000 people
- 4 Counties
- 12.6 percent of the states land area
- Imports water from the Colorado River
- Contains the Salton Sea, a critical link on the international Pacific Flyway
- Agriculture accounts for a majority of land use at 659,000 acres
- Year-round agriculture
- Home to 48 Native American Indian Tribes

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-1 to 11-8)

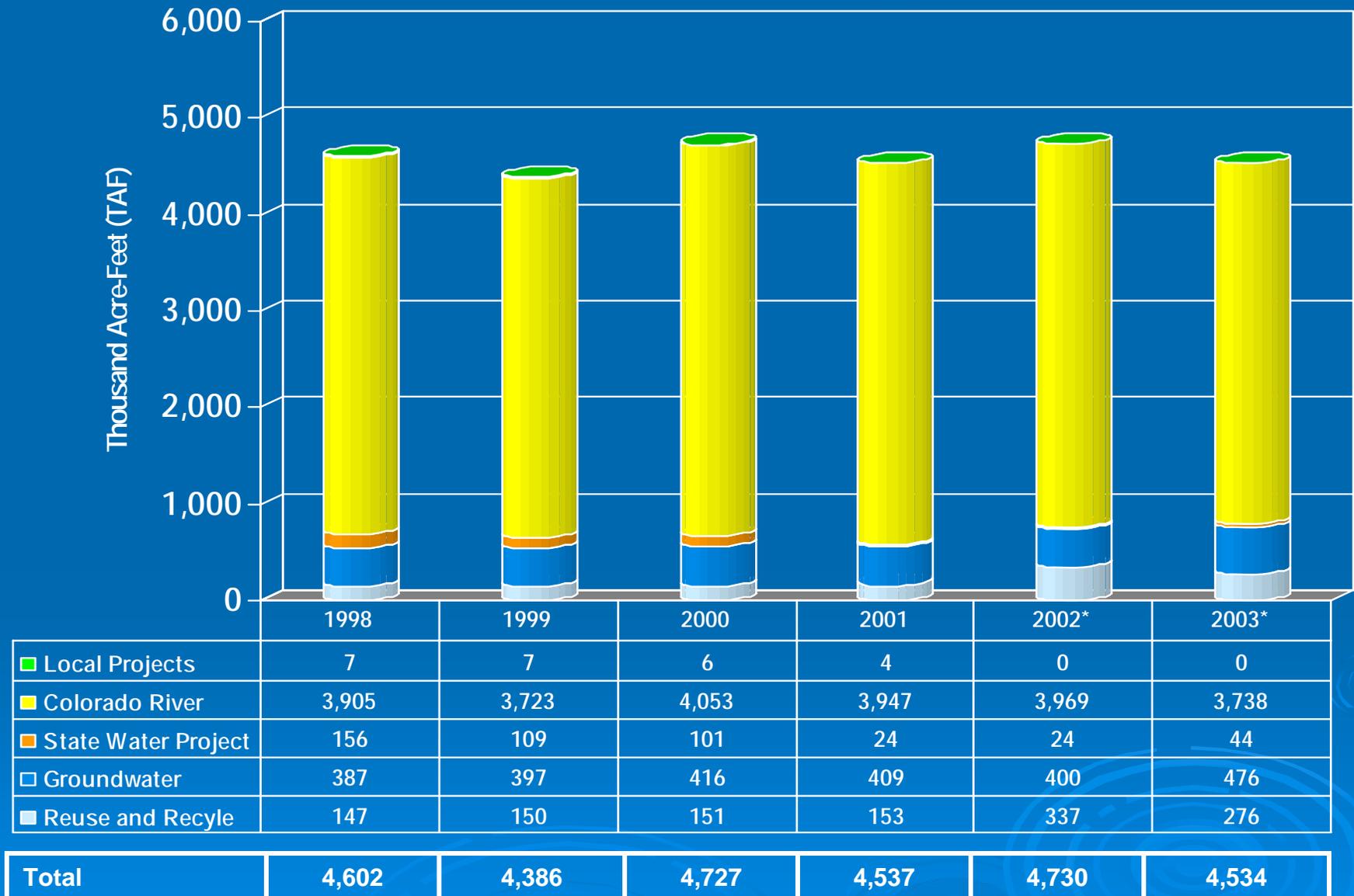
Colorado River Regional Water Planning & Management

- Presently represented by 4 planning efforts
 - Mojave Water Agency
 - Coachella Valley Regional Water Management Group
 - Salton Sea (underway)
 - Borrego WD (underway)

PROPOSITION 84 Integrated Regional Water Management Program Colorado River Funding Area

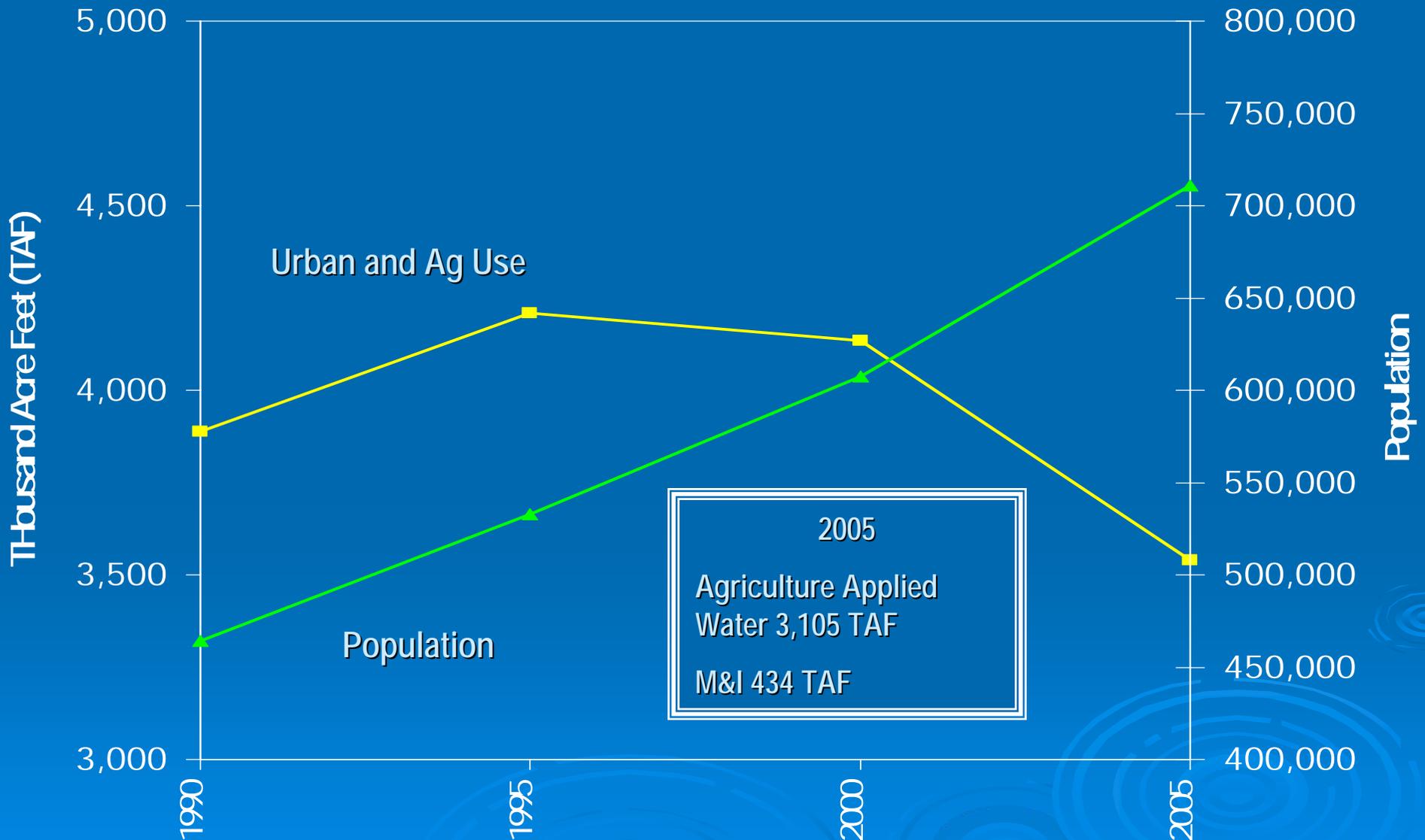


Colorado River Hydrologic Region Portfolio Data - Supply



* Preliminary, subject to revision

Colorado River Hydrologic Region Water Use & Population Comparison



Colorado River Hydrologic Region Portfolio Data – Water Use



* Preliminary, subject to revision

Colorado River Hydrologic Region Water Supply

- Colorado River
 - Agriculture demand met through Colorado River water
 - Meets most of the urban demand in the Imperial Valley
- Groundwater
 - Used primarily for urban demands in the region
- Recycled Water
 - Used in Coachella Valley for non-potable uses
- State Water Project
 - Resources are obtained through exchange agreements
 - Morongo Basin Pipeline

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-8 to 11-12)

Flood Management is Incorporated in the CWP Update 2009

1969 RIVERSIDE COUNTY FLOOD



Historic
Floods

BRAWLEY RESIDENTIAL DEVELOPMENT



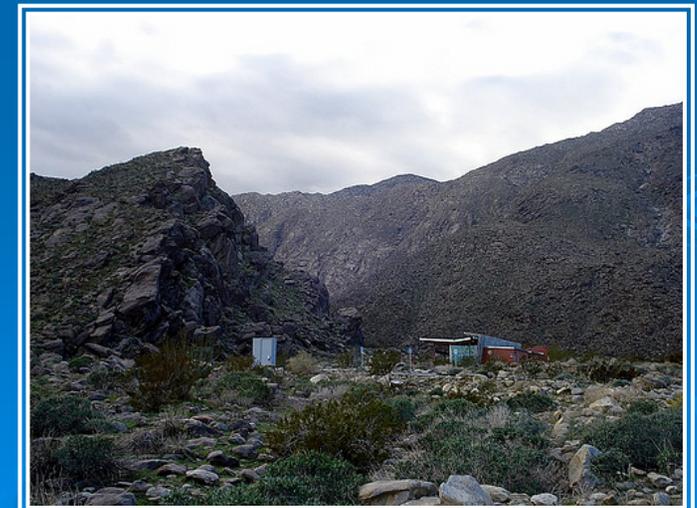
Flood
Hazards

IMPERIAL COUNTY COURTHOUSE



Governance

TAHQUITZ CANYON



Risk
Management

Colorado River Hydrologic Region Flood Management Report Content

➤ Setting

- Colorado River Hydrologic Region has the lowest annual precipitation in California
- With the exception of the Colorado, New, and Alamo rivers, all natural streams are ephemeral
- Flash floods and debris flows result from short-duration, high intensity rainfall from summer monsoonal thunderstorms or winter storms
- Many streams have steep channel slopes and little vegetation

➤ Historic Floods

- Significant events occurred in 1916, 1927, 1938, 1965, 1969, 1976, and 1995

Colorado River Hydrologic Region Flood Management

➤ 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

Colorado River Hydrologic Region

Flood Management

➤ Flood Risk Management

- Structural Approaches—Construction of Wide Canyon Dam, Deep Canyon and Palm Valley stormwater channels, Whitewater River channelization, and debris detention basins
- 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)

Colorado River Hydrologic Region Flood-Related Challenges

- Facilities and maintenance
 - Lack of ability to carry 1% probability flow in Whitewater River
 - Some localized flooding adjacent to the Salton Sea
- Coordination and regulation
 - Alluvial fan flooding issues in Riverside, Imperial and San Bernardino Counties
- Floodway mapping
 - Additional floodplain mapping needed in Imperial and Riverside Counties

Colorado River Hydrologic Region Accomplishments

- Canal Linings
- Water Transfer
- Groundwater Storage
- Water supplies
- Water Quality
- Flood Control
- Quantitative Settlement Agreement

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-22 to 11-24)

Colorado River Hydrologic Region

Key Issues and Challenges

➤ Environmental

- Colorado River threatened and endangered species
 - Colorado pikeminnow, razorback sucker, humpback chub and bonytail chub
- Citizens Congressional Task Force on the New River
- Treated and untreated flow from Mexico through the New River to Salton Sea
 - New treatment facility in the Mexicali Valley sends treated water southward through the Rio Hardy river

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-25 to 11-26)

Colorado River Hydrologic Region Key Issues and Challenges Cont'd.

➤ Water Quality

- Salton Sea
- Concerns about perchlorate in Colorado River water and presence of hexavalent chromium in water wells in near Needles
- Increasing levels of salinity and nitrates in groundwater

➤ Water Supply

- Fort Mojave Indian Tribe, Fort Yuma-Quechan Indian Tribe and Colorado River Indian Tribes are pursuing additional water rights based on boundary lands claims

Agenda Item 10

Part 1

Scenarios

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

Colorado River Hydrologic Region Water Management Responses

- A mix of 25 Strategies being implemented in this region
 - Table 11-8, Pg 11-20 of Regional Report
- Some examples of strategies being used today
 - Water conservation
 - Ecosystem Restoration
 - Water recycling
 - Urban Water Management Plans and Groundwater Management Plans

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-19 to 11-21)

Colorado River Hydrologic Region Planning for the Future

- Salton Sea
 - Restoration and stabilization efforts/alternatives
- New delivery system in Coachella Valley
- Land Fallowing/On-Farm and delivery system improvement in Imperial Valley
- Additional storage and operation flexibility
- Landscape Water Conservation
- Desert Landscape Workshops

(California Water Plan Update 2009, Vol. 3, Regional Reports Pgs 11-27 to 11-28)

Regional Report Contact Information

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