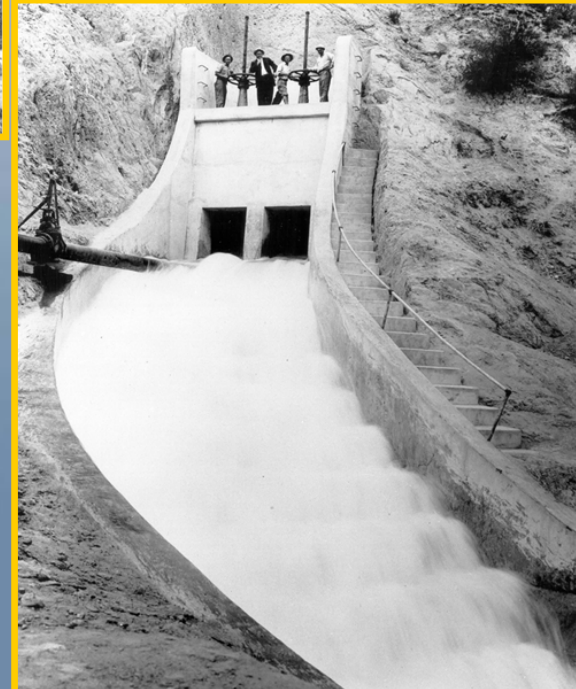
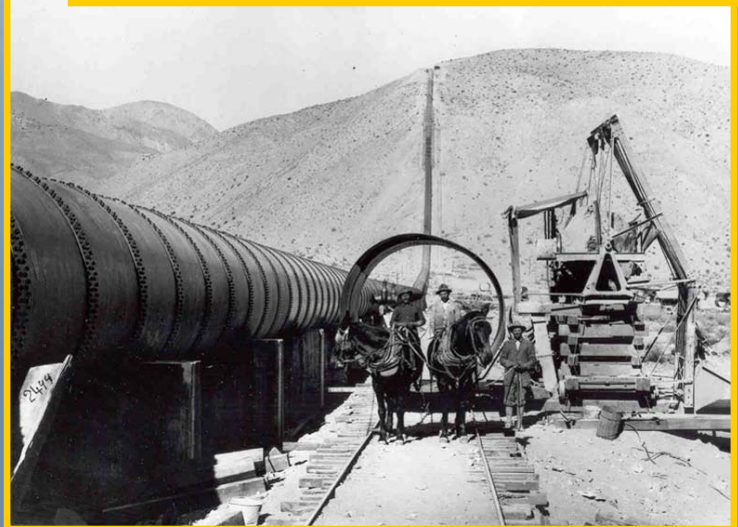
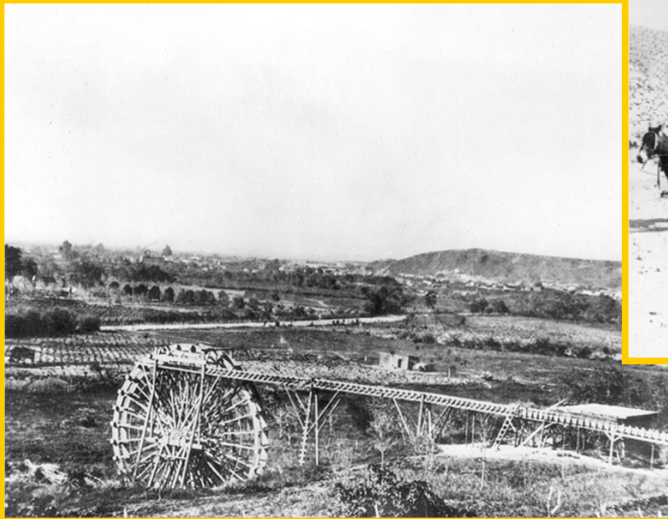


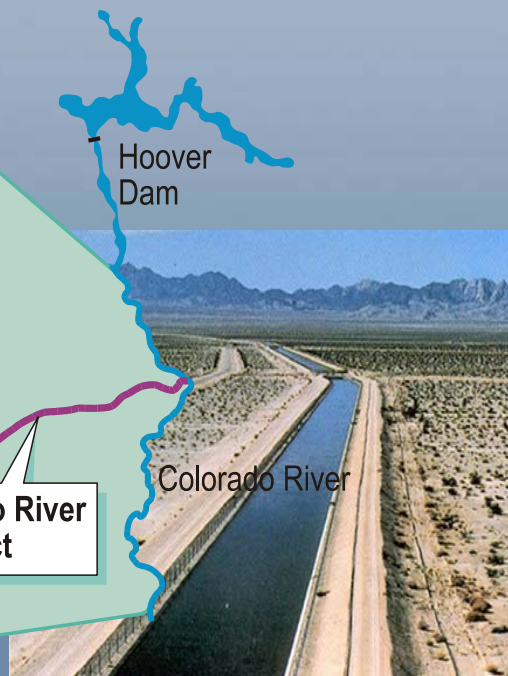


# Water and the City of Los Angeles

# Water System History



# Los Angeles Water Resources



California Aqueduct

Los Angeles Aqueduct

Hoover Dam

Colorado River Aqueduct

Local Groundwater

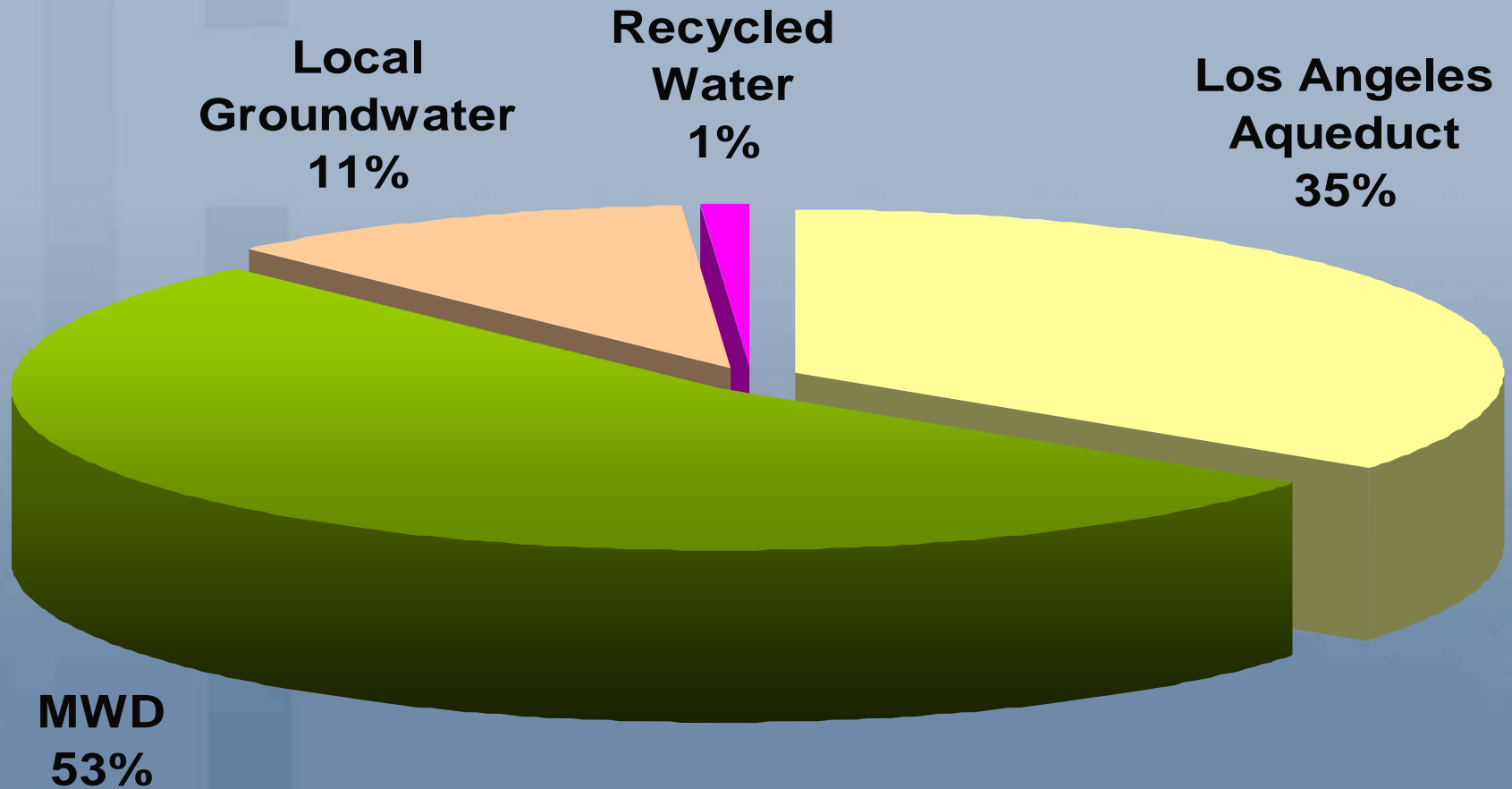
Los Angeles

Colorado River



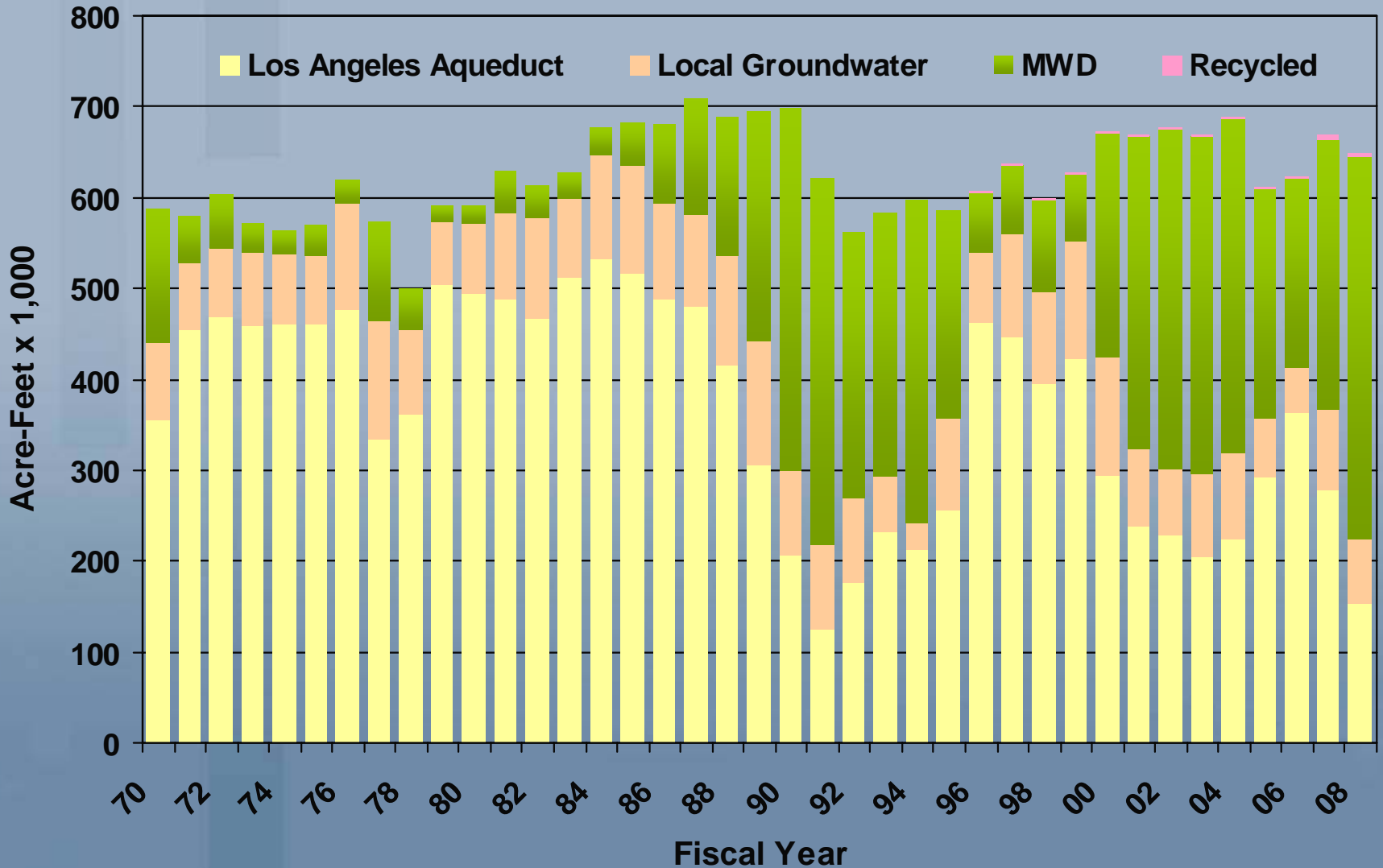
# Los Angeles Water Supplies

## Average Year



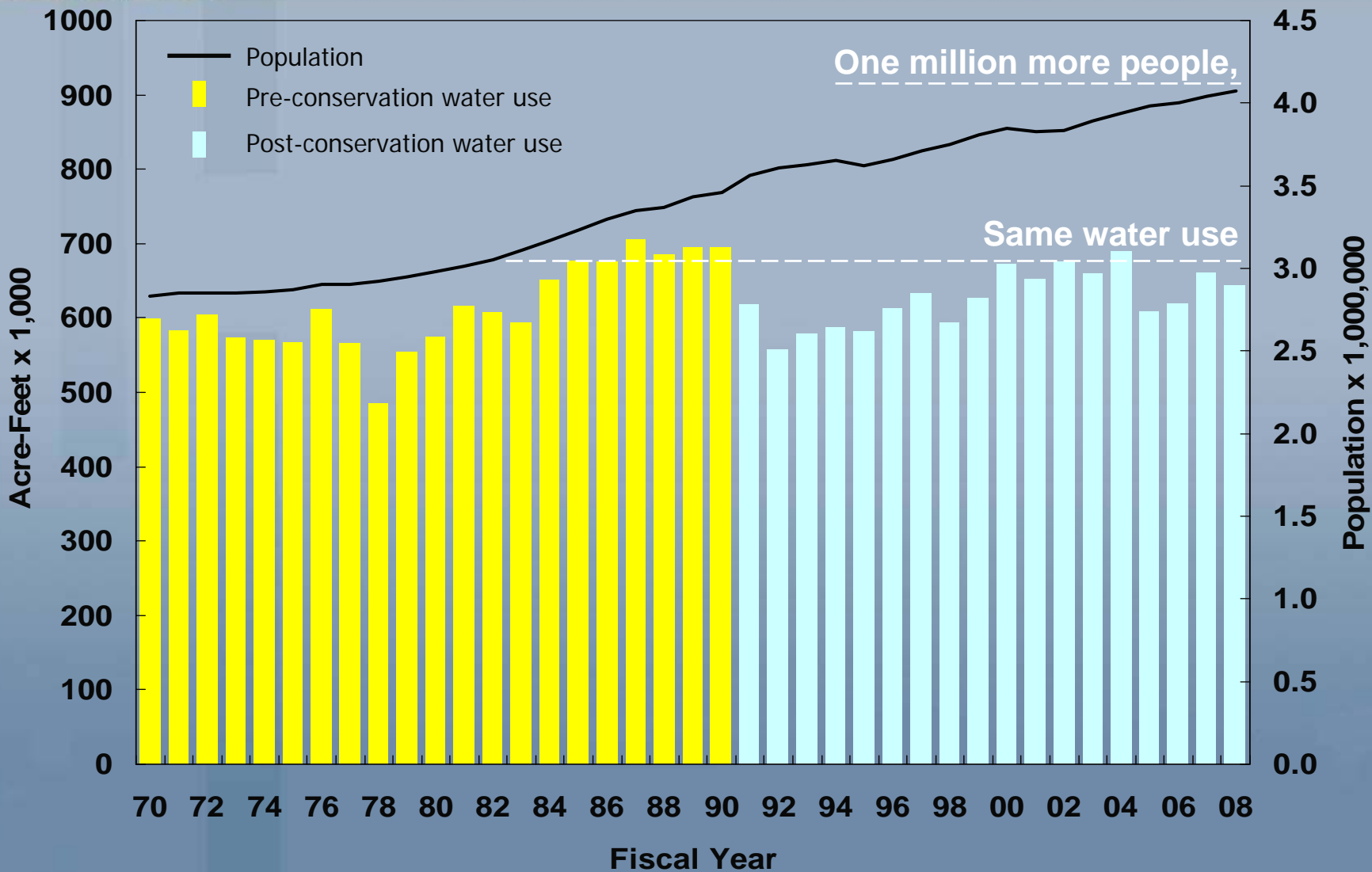


# Los Angeles Water Supplies





# Water Use and Population





# Water Supply Outlook



- 85% of LA's water is imported and facing further restrictions
  - Hydrologic and regulatory droughts in the Bay Delta
  - Nearly half of Los Angeles' historic aqueduct supplies remain in the Eastern Sierra Nevada to meet environmental obligations





# Water Supply Outlook - 2009



- Water supply shortage in Southern California is anticipated
  - Below-normal snowpack can be reduced with early runoff
  - Reservoir levels remain low
  - State of Emergency declaration by Governor



# Water Supply Outlook - 2009



- Water shortage is due to more than climate conditions
  - Potential MWD water allocation will result in L.A. water shortage
  - Pumping restrictions to protect Sacramento-San Joaquin River Delta ecosystem
  - CA Department of Water Resources allocation of State Water Project supply is low
  - Public perception that local rainfall is strongly correlated to City's water supply



# Water Supply Outlook - 2009



- Continuous reduction in water demand is key
  - L.A. leaders and residents need to prepare for the worst
  - Phase 2 of Emergency Water Conservation Ordinance is sufficient without MWD allocation
  - If MWD allocates, Phase 3 will likely be needed
  - Necessary level of Shortage Year Rates being analyzed; recommendation will be made



# Water Supply Outlook - 2009



## SELECT KEY WATER SUPPLY INDICATORS FOR LOS ANGELES

Indicator	1-Feb-09	9-Mar-09	Total Increase	
			Amount	% change
Lake Oroville Storage in acre-feet	1,022,442	1,673,541 (47% of capacity)	651,099	64%
Lake Shasta Storage in acre-feet	1,416,008	2,437,546 (52% of capacity)	1,021,538	72%
Statewide Snowpack % of normal	61%	90%	29%	48%
Eastern Sierra Nevada Snowpack % of normal*	51%	77%	26%	51%

\* data basis from February 3 to March 3



# Recent Actions Taken

- Revised City Ordinance amending the City's Emergency Water Conservation Plan
  - 1) Expanded prohibited water uses
  - 2) Increased penalties
  - 3) Revised structure for dispute determinations
- Activated "Drought Busters"
- Enforcement of Prohibited Uses





# Recent Actions Taken

## Enforcement of Phase 1 - Prohibited Uses

- You cannot use a water hose to wash any hard or paved surfaces such as sidewalks, walkways, driveways, or parking areas (with the exception of DWP-approved water conserving spray cleaning devices).
- You cannot water during periods of rain.
- You cannot wash your car without using a hose with a self-closing, shut-off device.
- You cannot water lawns, landscape, or other vegetated areas between 9:00 a.m. and 4:00 p.m.



# Recent Actions Taken

## Enforcement of Phase 1 - Prohibited Uses

- You cannot water or irrigate any lawn, landscape, or other vegetated areas in a manner that causes or allows excess or continuous water flow or runoff onto an adjoining sidewalk, driveway, street, gutter, or ditch.
- You cannot use water to clean, fill, or maintain decorative fountains unless the water is part of a recirculation system.
- You cannot serve water to customers in eating establishments, unless requested by the customer.
- Large landscape areas, such as parks and open fields, shall have irrigation systems, **with** rain sensors that shut off the irrigation system.



# Recent Actions Taken

## Enforcement of Phase 1 - Prohibited Uses

- All irrigating of landscaping with potable water using stream rotator-type or gear driven sprinklers shall be limited to no more than 15 minutes per watering day, per station, or shall be limited to no more than 10 minutes per for all other types of sprinklers.
- You cannot allow water to leak from any pipe or fixture on the customer's property.
- You cannot install non-recirculating systems in new car wash and commercial laundry systems.
- You cannot install single-pass cooling systems in new building.



# Recent Actions Taken

## Implement Phase 2 and Phase 3

- Under Phase 2, non-watering days are instituted leaving Monday, Thursday or Saturday as permissible days to irrigate landscaping.
- Under Phase 3, watering outdoors will be cut back an additional day to Monday and Thursday only. Phase 1 time limits apply.
- These provisions do not apply to hand-held hose watering of vegetation, if the hose is equipped with a self-closing water shut-off device, so long as the watering occurs during the allowable hours.



# Recent Actions Taken

## Recommend Implementation of Shortage Year Rates

- ❑ Requires finding by LADWP Board that water supply is insufficient to meet normal demand
- ❑ Current shortage finding: 15 percent
- ❑ Water use budget established for customers, based on water shortage—those who use more, pay more
- ❑ Adopted through LADWP Board resolution
- ❑ L.A. City Council has the option of acting on recommendation, but is not required to



# City of Los Angeles Water Supply Action Plan



## ***Securing L.A.'s Water Supply***

Mayor Antonio R. Villaraigosa

City of Los Angeles Department of Water and Power

May 2008



# Water Supply Action Plan Goal

- All **new** demand for water will be met through a combination of water conservation and water recycling.
  - 100,000 acre-feet per year (AFY) or (123 MCM) by 2030.



# Water Supply Action Plan Strategies

- Increase Water Conservation
- Increase Recycled Water Usage
- Enhance Stormwater Capture
- Clean up San Fernando Groundwater Basin
- Expand Groundwater Storage
- Green Building Initiatives



# WATER SUPPLY ACTION PLAN

## Strategy No. 1



## Increase Water Conservation

Goal: To save an additional 50,000 AFY by 2030

- ❑ Focus on Residential Outdoor Water Use: Improve landscape water efficiency for residential customers through smart irrigation controller direct install program
- ❑ Promote Incentive Programs: Increase water savings from water conservation rebate and incentive programs
- ❑ Target City parks and other large landscapes for water use efficiency measures
- ❑ Assist City Departments to reduce outdoor water use and retrofit indoor plumbing at their facilities
- ❑ Heighten Public Awareness: Raise awareness of water conservation programs and prohibited uses





# WATER SUPPLY ACTION PLAN

## Strategy No. 2

### Maximize Water Recycling

*Goal: To produce 50,000 acre-feet of recycled water by 2019*

Two key strategies:

- ❑ Groundwater replenishment with advanced treated wastewater
  - ✓ Requires upgrading Tillman Plant to advanced treatment
  - ✓ Planned supply of 15,000 AFY by 2019
- ❑ Expand recycled water distribution for irrigation and industrial use
  - ✓ Requires building 120 miles of new 'purple pipes'





# WATER SUPPLY ACTION PLAN

## Strategy No. 3

### Enhance Stormwater Capture

*Goal: To increase groundwater recharge by an average of 20,000 AFY through retrofitting the Big Tujunga Dam and other projects through cooperative efforts with the LA County Flood Control District & other agencies*

#### Key Projects:

- ❑ Rehabilitate Big Tujunga Dam
- ❑ Rehabilitate San Fernando Valley spreading grounds





# WATER SUPPLY ACTION PLAN

## Strategy No. 4

### Accelerate Clean-up of San Fernando Groundwater Basin

*Goal: To preserve City's groundwater allotment of up to 87,000 AFY by cleaning up San Fernando groundwater basin, which will allow for expanded groundwater storage and the ability to fully utilize local groundwater*

#### Key Strategies

- ❑ Work with EPA and state agencies to identify and hold accountable polluters of the San Fernando Basin
- ❑ Develop comprehensive groundwater management plan





# WATER SUPPLY ACTION PLAN

## Strategy No. 5

### Expand Groundwater Storage

*Goal: Pursue additional opportunities for groundwater storage in Los Angeles, the Antelope Valley, and along the L.A. Aqueduct*

#### Key Strategies

- ❑ LADWP to continue active involvement in Antelope Valley groundwater adjudication
- ❑ Support efforts to expand groundwater storage rights in the Central and West Coast basins





# WATER SUPPLY ACTION PLAN

## Strategy No. 6

### Green Building Initiatives

*Goal: To advocate for advancement of water efficiency and reuse in new development.*

#### Key Strategies

- ❑ Address “unplanned development” – Some new developments are allowed an increase in density beyond that anticipated in the City’s General Plan and LADWP’s Urban Water Management Plan.
- ❑ Water Supply Assessments – Continue to work with developers to expand water conservation and water reuse for proposed projects.
- ❑ New ordinances on water efficiency for new development and gray water.





# Water and the City of Los Angeles