

# Role of Desalination in California's Water Portfolio

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# Basic Concepts

- Don't preclude options before analysis
- Apply integrated regional water management concept
  - Identify regional needs
  - Identify regional criteria & priorities

# Resource Management Strategies

## Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

## Improve Operational Efficiency & Transfers

- Conveyance
- 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

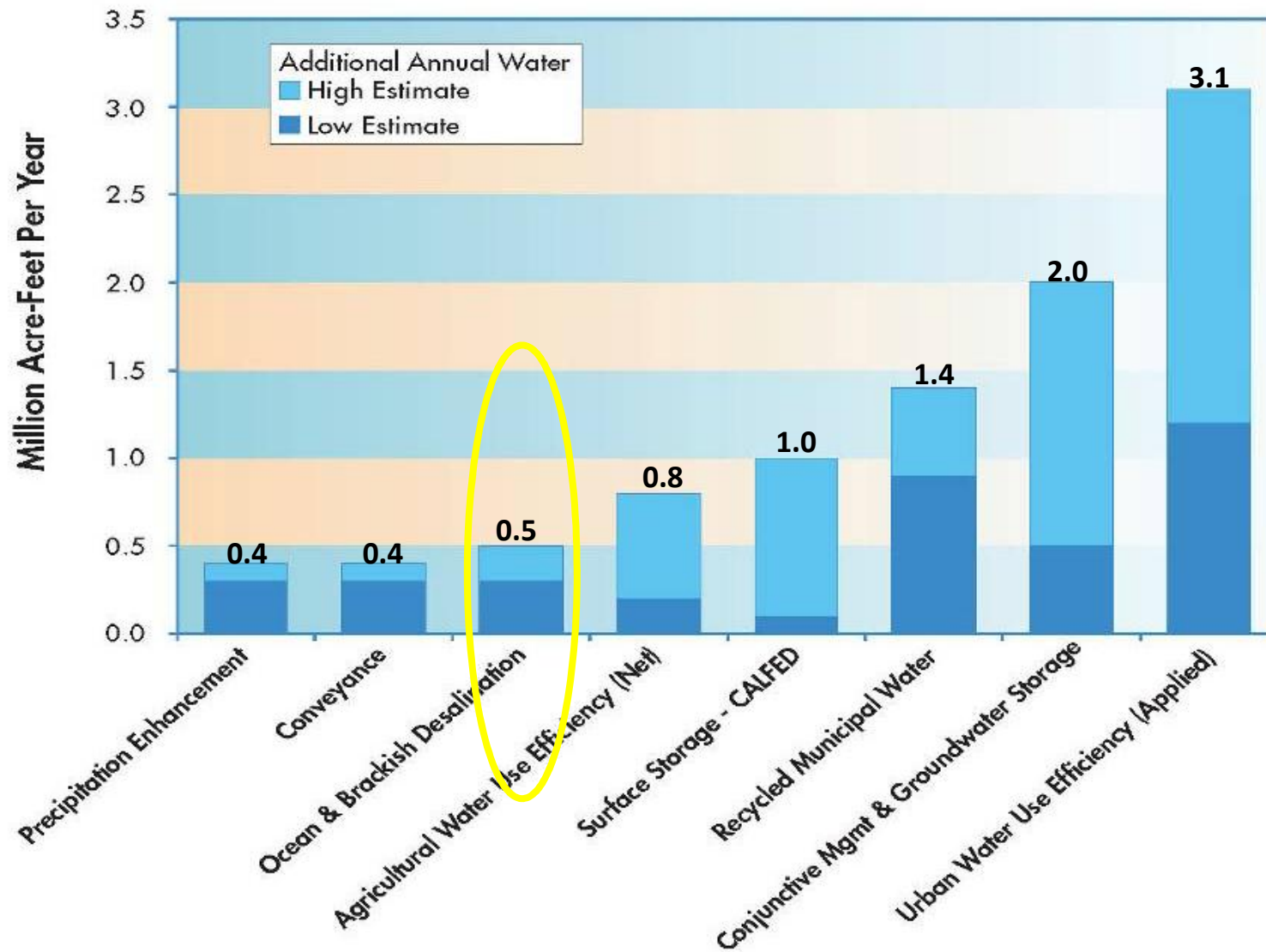
## Improve Water Quality

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

## Practice Resource Stewardship

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

# Range of Water Supply Benefits by 2020



# Supply Reliability Issues

- Drought
- System failures in imported supplies
- Delta export restrictions
- Climate change

# Major Desalination Issues

- Cost
- Energy Use
  - Cost
  - Greenhouse Gas Generation
- Marine Impacts
- Brine Disposal/Discharge Impacts

# Technological Solutions

- Alternative Energy Sources
  - Co-location with power plants
  - Wind, wave, solar
- Energy Reduction
  - Membranes (e.g., graphene)
  - Internal energy recovery
  - Forward osmosis
- Intake Alternatives
- Brine
  - Discharge technologies & design criteria
  - Harvest brine for beneficial use

# Policy Development

- State Water Resources Control Board
  - Ocean Plan revisions addressing desalination intakes & brine discharge



# DWR Perspective

- Current technology is in practice
- Improvements are already taking place
- DWR supports further technology improvements
  - Reduce energy consumption (cost, GHG)
  - Reduce cost
  - Reduce environmental impacts (intakes, brine)
- DWR supports state financial assistance

# California Water Plan Update 2013

- Desalination Resource Manage Strategy
  - Being drafted
  - Will solicit public review of draft

# Financial Assistance

- Proposition 50 Funding
  - Allocated about \$35 million
- New Funding Solicitation
  - Early 2013
  - \$4.5 million or more
  - Public review of draft criteria late 2013

# DWR Information

- Desalination Information

- <http://www.water.ca.gov/desalination/>

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