The background features a stylized landscape. At the top, a sun with rays is depicted in shades of light blue and white. Below the sun are rolling hills and mountains in various shades of blue and green. A winding river flows through the center of the landscape. The overall style is clean and modern, using a limited color palette of blues and greens.

# Countywide Vision Water Element

Celeste Cantú, Santa Ana Watershed Project Authority  
Doug Headrick, San Bernardino Valley Municipal Water District  
Craig Miller, Inland Empire Utilities Agency  
Kirby Brill, Mojave Water Agency

August 10, 2012

# Countywide Water Element Vision

**Problem Statement:** Improve countywide effort to plan and manage water resources in San Bernardino County

**Vision:** Develop a Countywide strategy that encourages collaboration among business, residents, and water agencies that will:

- Address multiple watersheds and water agencies
- Build institutional and organizational capacity for future countywide networking efforts
- Create mutually beneficial investment opportunities to ensure adequate water supplies and quality for the future

# Inventory Sources

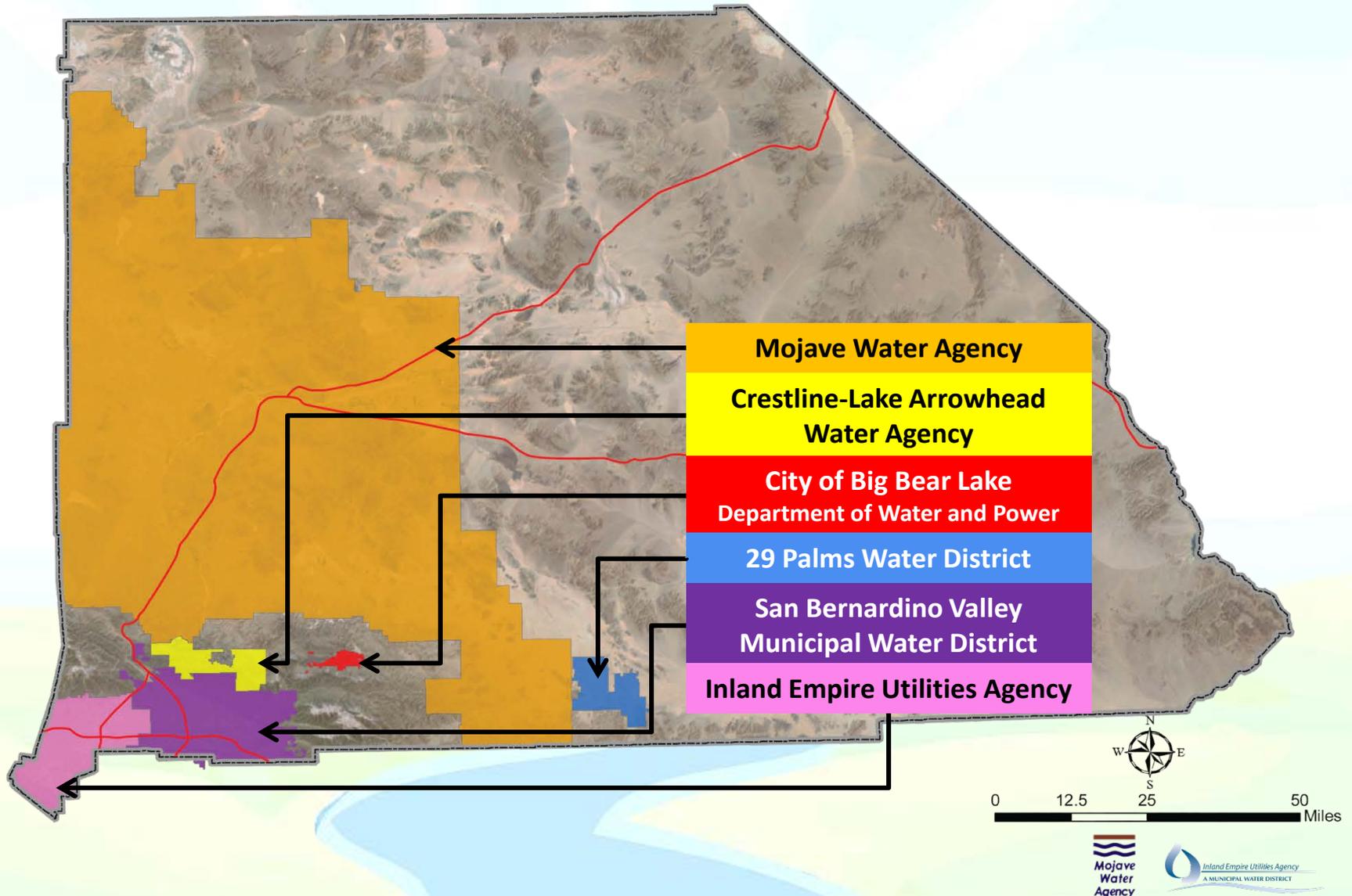
## Urban Water Management Plans

- Required by law
- Purpose is to show that an agency has enough supply to meet growing demands
- Investment/funding required to realize plans

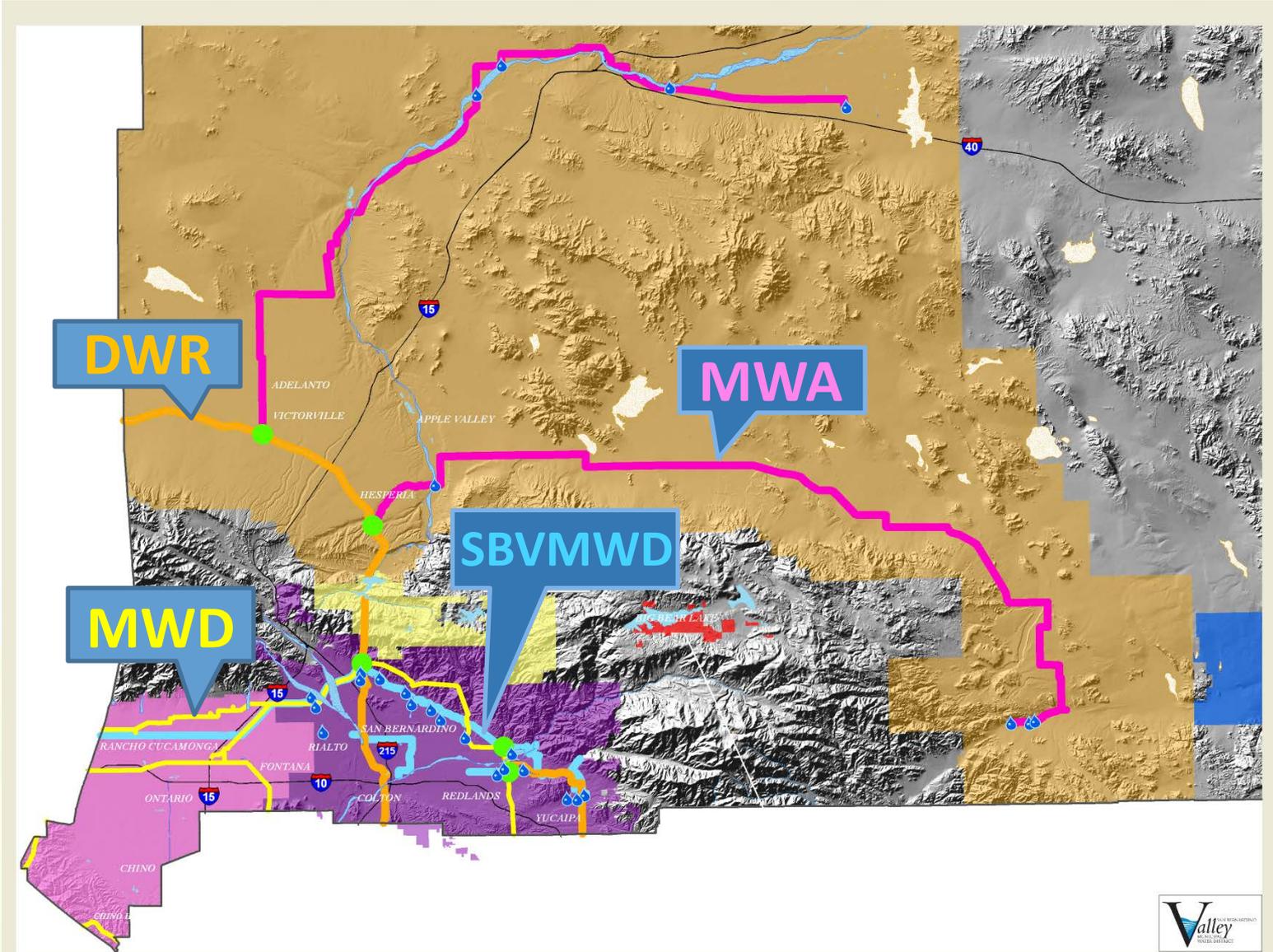
## Santa Ana Watershed Project Authority

- One Water, One Watershed Water Supply Reliability Pillar

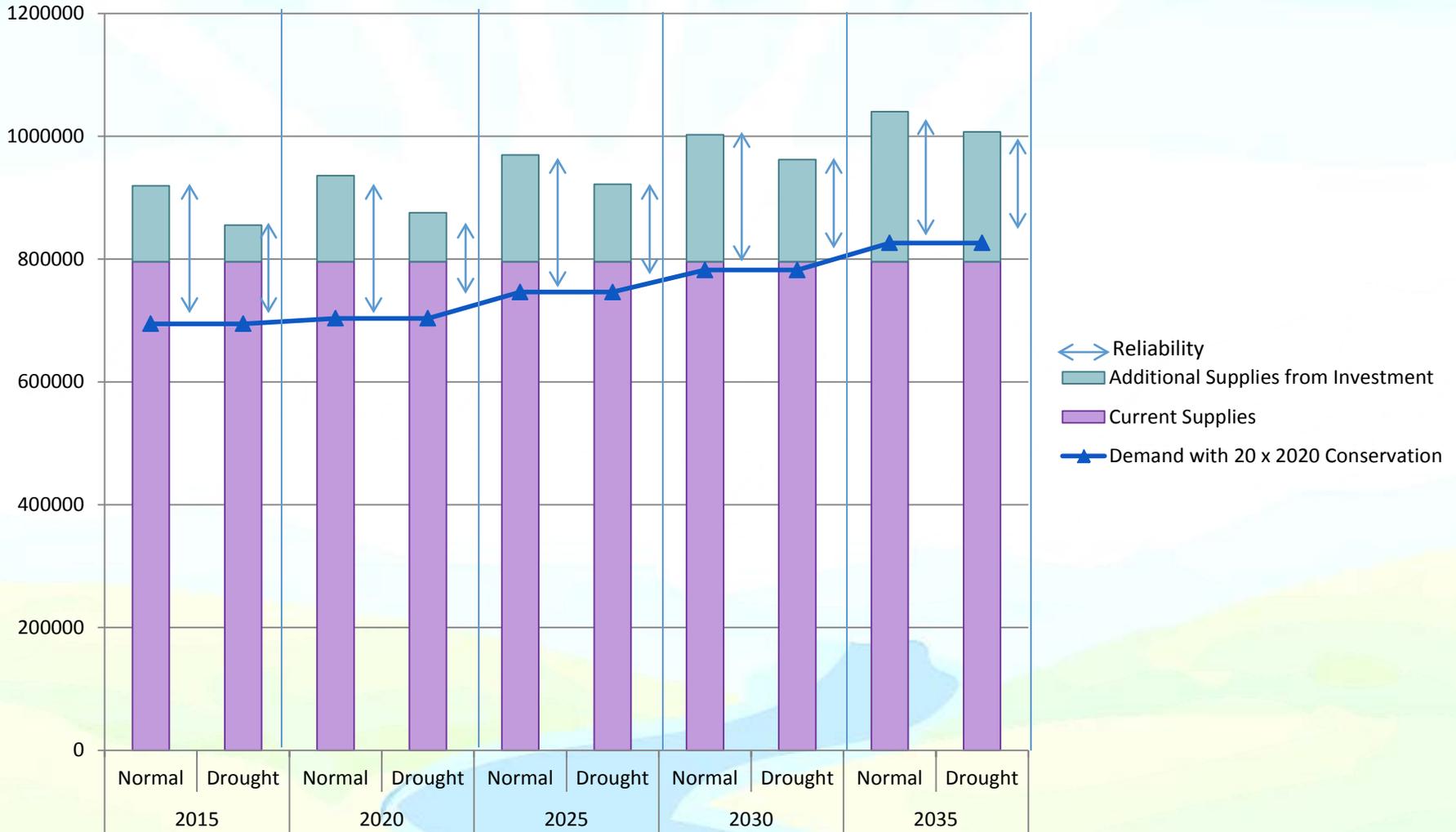
# Inventory: Regional Water Agencies



# Inventory: Regional Water Facilities



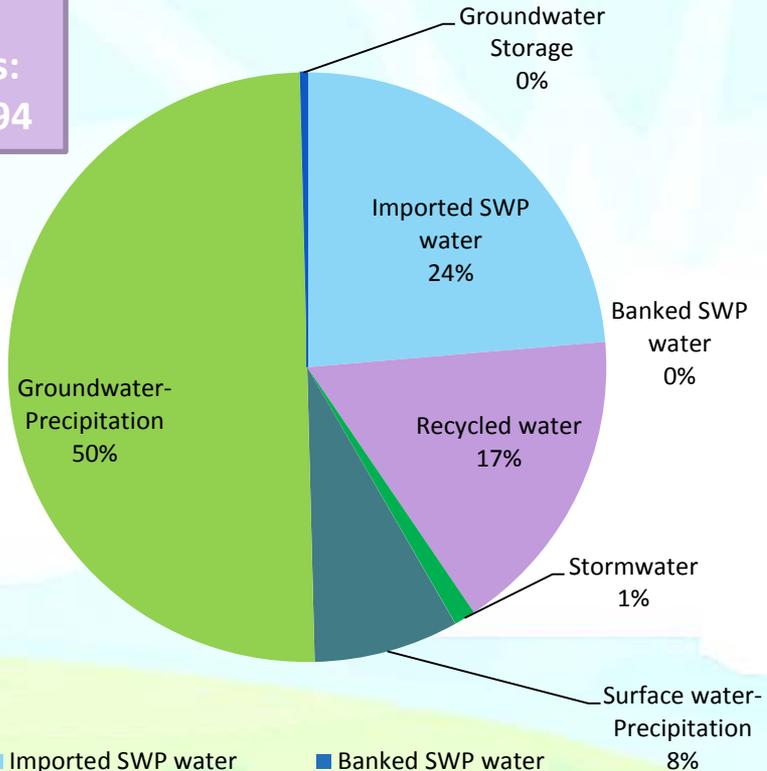
# Inventory: Results



# Inventory: Water Supply Portfolio

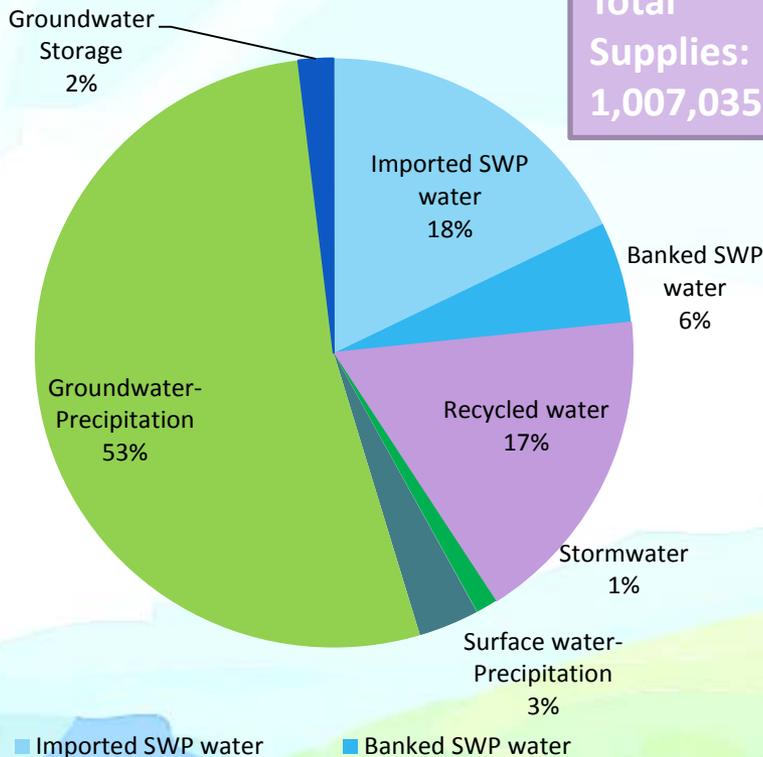
Normal Supply, 2035

Total Supplies: 1,040,094



Drought Conditions, 2035

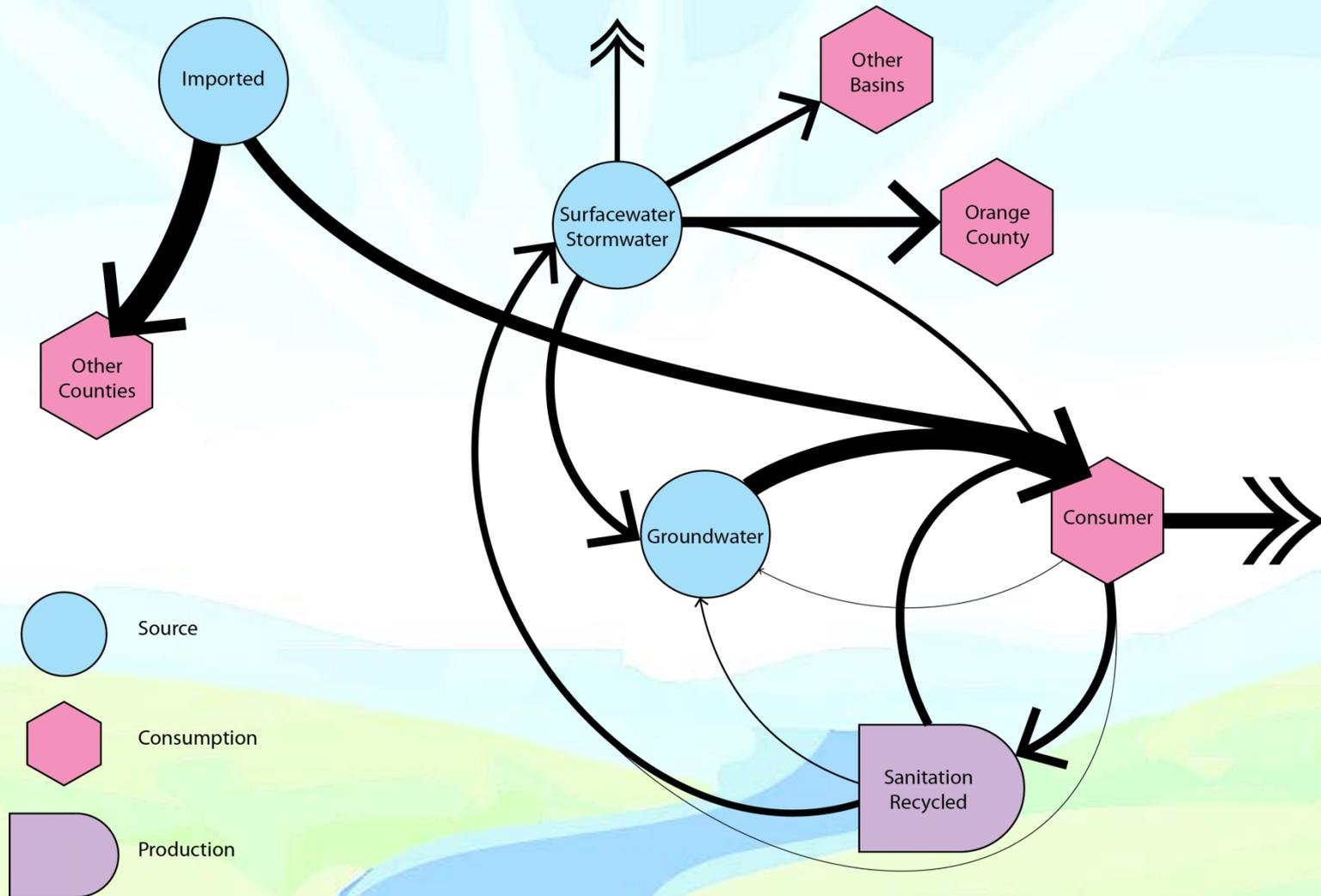
Total Supplies: 1,007,035



- Imported SWP water
- Banked SWP water
- Recycled water
- Stormwater
- Surface water-Precipitation
- Groundwater-Precipitation
- Groundwater Storage

- Imported SWP water
- Banked SWP water
- Recycled water
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- Surface water-Precipitation
- Groundwater-Precipitation
- Groundwater Storage

# County Water Resources



Data Source: 2010 Urban Water Management Plans

Rules and Regulation

Capital Improvement Projects

Education and Outreach

Incentive/Disincentive Programs

1881  
AB

RECYCLED WATER AHEAD

INVESTMENT

DO NOTHING

Water Bills  
Rebates

WATER WISE  
LANDSCAPES  
500,000 HOMES





**What do we need to know?**

**What are the threats?**

**How can we improve our supplies?**

**How can we better manage our demand?**

# Threats to Water Supply

## No Control

### Precipitation

1. When will it rain?
2. How much?
3. Drought? How long?

### Disaster

1. Earthquakes
2. Delta
3. Power failure
4. Wildfire

## Control?

### Threats

1. Stormwater capture
2. Threatened species
3. Invasive species
4. Sediment Transport
5. Water quality degradation
6. Climate Change
7. Water Waste

# Local Threats

## Santa Ana Sucker



## SB Kangaroo Rat



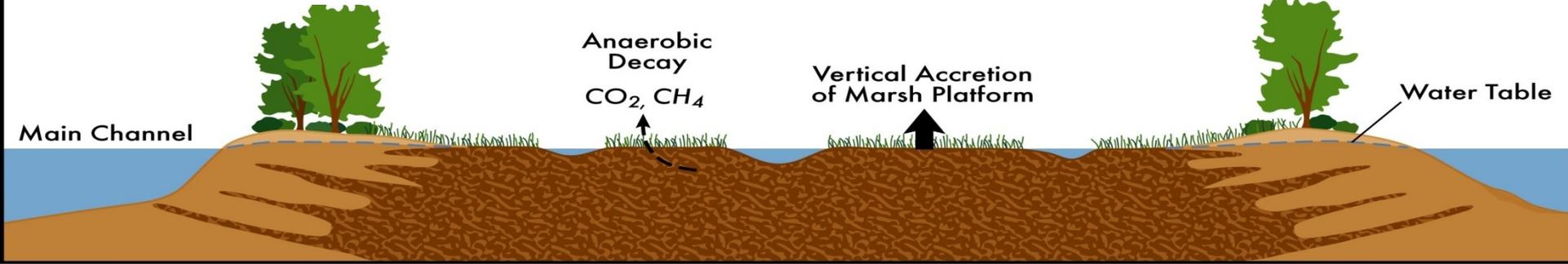
# Sacramento Delta Threatened/Endangered Species

- Delta smelt
- Longfin smelt
- Chinook Salmon
- Green and white sturgeon
- Central valley steelhead
- Sacramento splittail

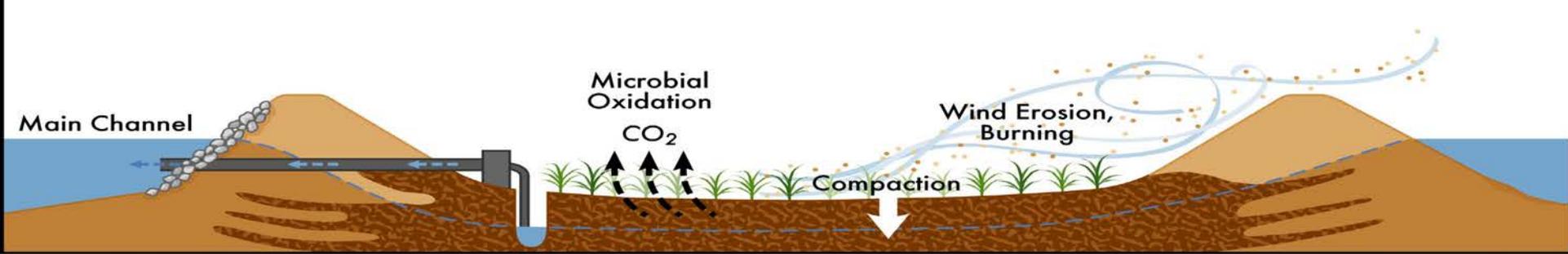


# Bay-Delta Islands or Holes?

Pre-1880s



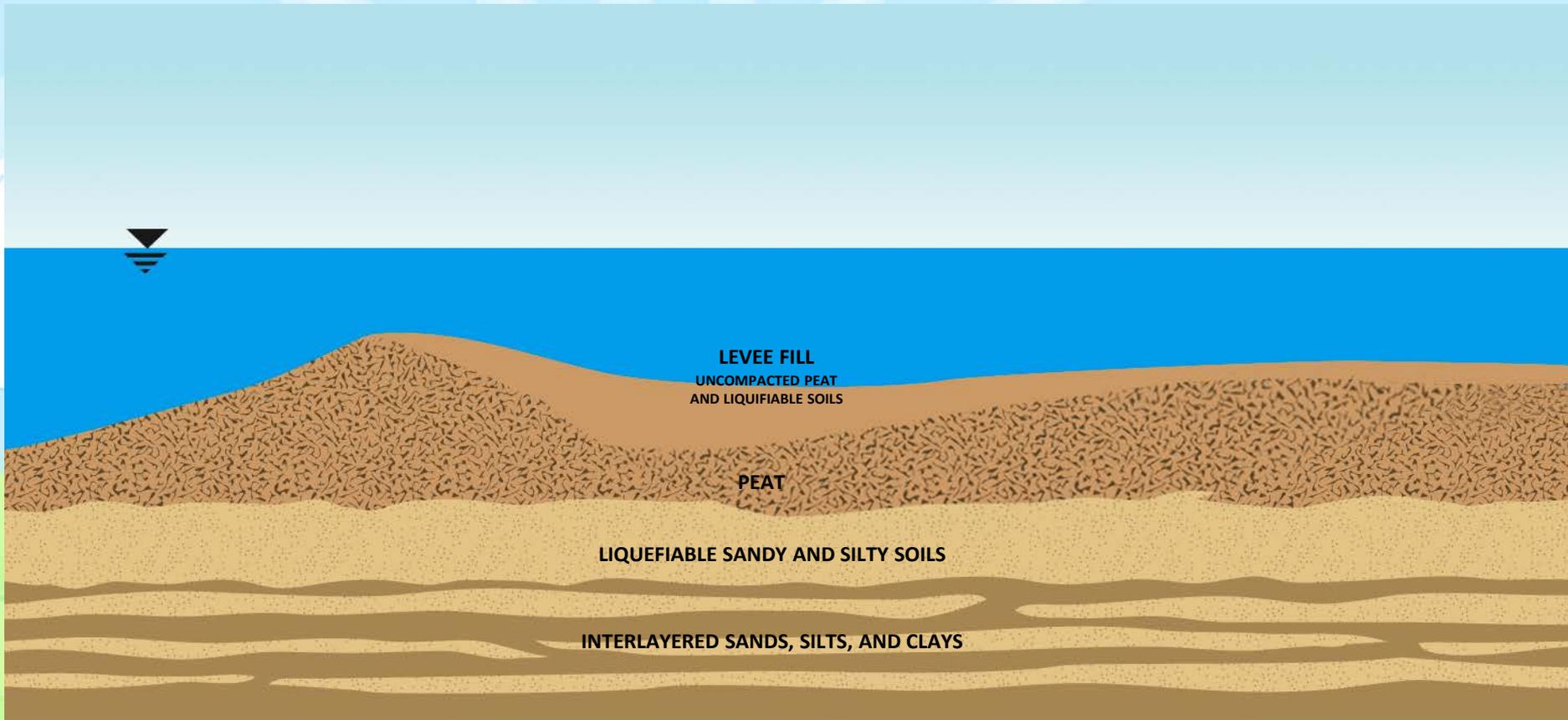
Present Time



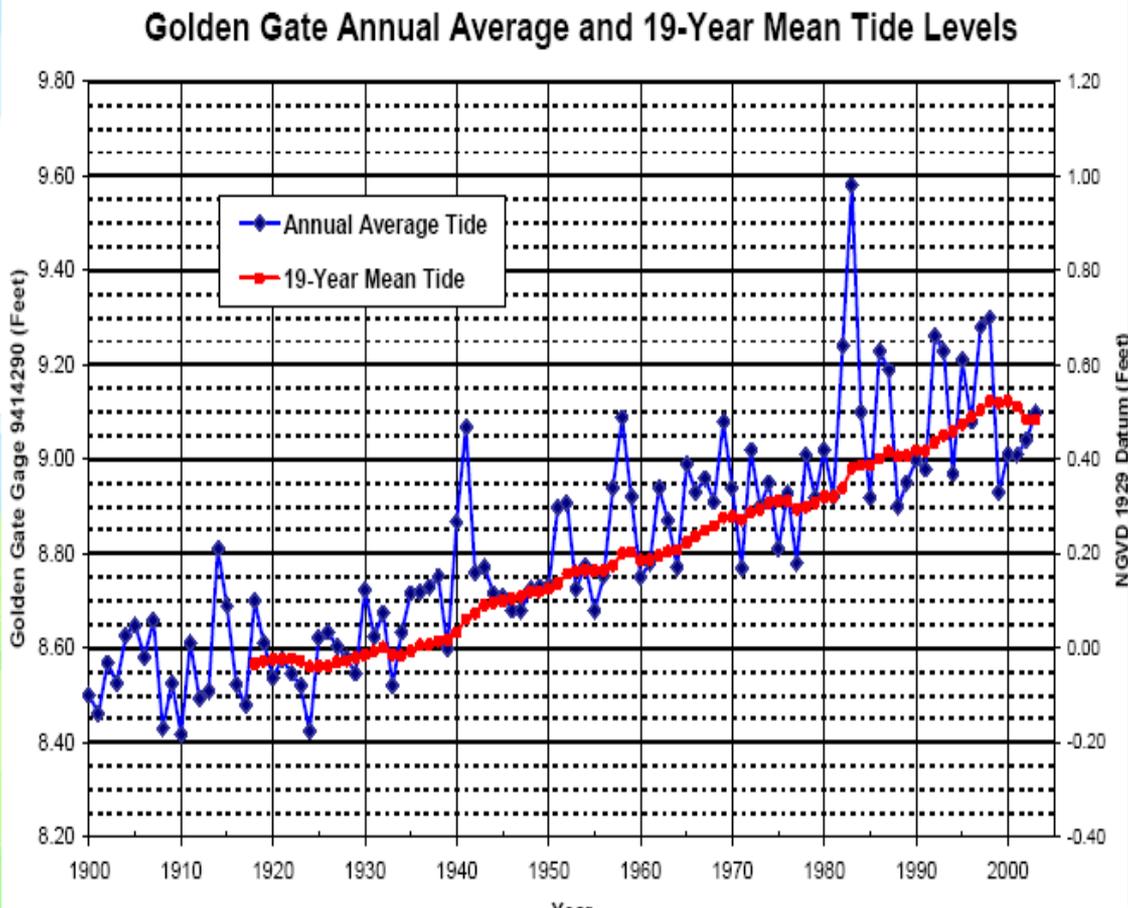
Levee Failure



# Earthquake Induced Levee Failure



# Climate Change and Sea Level Rise



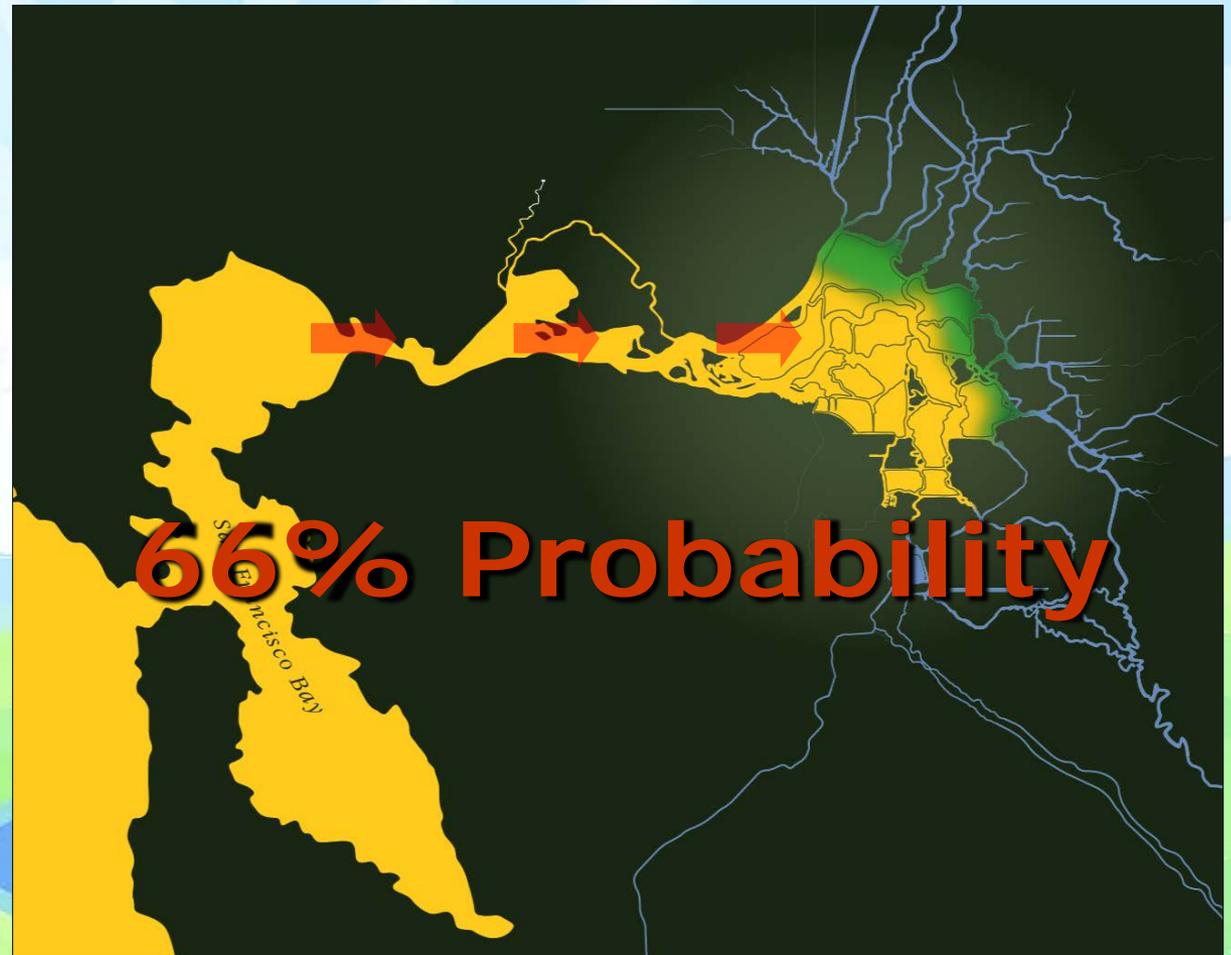
Past (1900 – 2000)  
+ ½ ft sea level rise

Future (2000 – 2100)  
½ to 3 ft sea level rise

# When Delta Levees Fail: The “Big Gulp”

300 billion gallons  
of salt water flow  
into the Delta in  
first few days

Cost \$40 Billion



# Water Supply and Habitat Loss

## Local Supplies

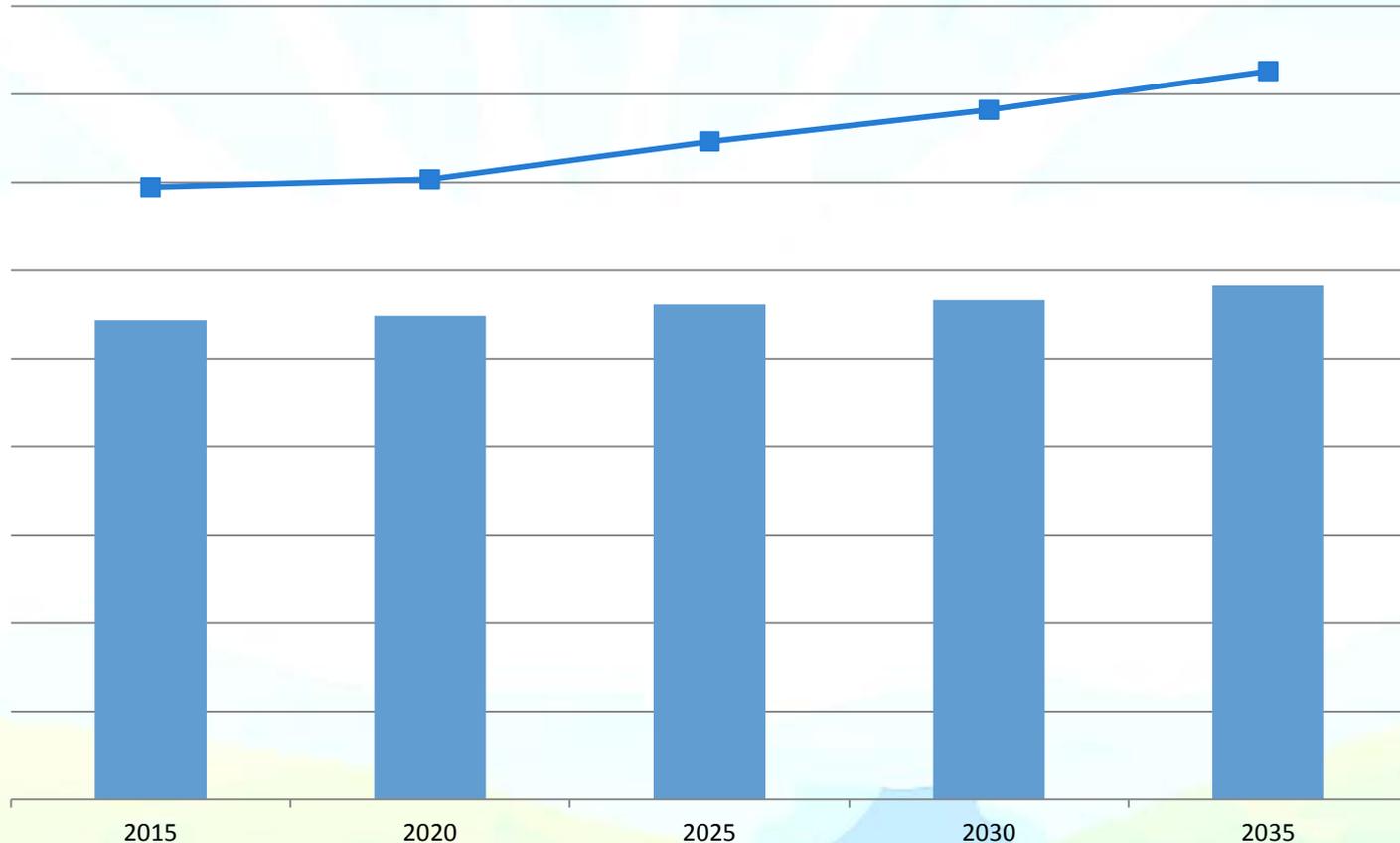
- Habitat is required
- Process lengthy and costly when done alone
- Complexity due to multiple species
- Habitat conservation plan could save time and money

## Imported Supplies

- Endangered species issues have reduced imported water deliveries 1 million AFY
- Delta conveyance solves many species issues and:
  - Returns reliability
  - Improves water quality

# Perfect “Non” Storm

What do we do if something goes wrong?



Worst year represents the worst case scenario, or perfect storm: imported water is stopped, we are in the middle of a drought with a 30% reduction in precipitation (stormwater, surface, and groundwater ) 3) Investment in recycled water ends at 2015

# How Do We Plan for the Future?

## STRATEGIES

- Develop a Plan:
  - Urban Water Management Plans
- Be Prepared for variations in water supply availability (scenario planning)
  - Diversified water portfolio
  - Partnerships
  - Collaboration
  - Investment
- Optimization of Resources

# DIVERSIFICATION BUILDS RELIABILITY

## Imported Water

- State Water Project & Colorado River
- Habitat in Bay Delta

## Groundwater

- Banking opportunities
- Remote basin development in central and eastern San Bernardino County

## Intra-regional Water Transfers

- Strengthen partnerships within San Bernardino County

## Inter-regional water transfers

- Strengthen collaboration between watersheds & across county boundaries

### **Recycled Water: Wastewater Treatment**

- Enhanced Treatment and Distribution Networks
- Plan development

### **Habitat Restoration: Environmental Resource Agencies**

- Remove environmental constraints
- Embrace resource agencies
- Long term perspective

### **Surface and Stormwater:**

- Flood Control Agencies
- Capture and replenishment

# **PARTNERSHIPS ARE IMPERATIVE TO SUSTAIN LOCAL SUPPLIES**

### **Local Support:**

Developers, elected officials, water and land use planners

- Long term perspective
- Think regionally

### **Inter & Intra-regional Water Transfers:**

SWP Contractors, MWD

- Strengthen partnerships across the county and watersheds beyond county boundaries

### **Groundwater:**

GW Managers, Watermasters

- Local conjunctive storage programs

# Transforming Water Management Philosophy

## Water Suppliers

Reactive

Engineering focused

Self-sufficient, Fragmented

Narrow scope

Uninformed public

Consumptive Culture

UWMPs are just plans



## Water Resource Managers

Proactive

Mutually Invested, Collaborative

Cost effective, Shared reward

Flexible, Adaptive, Prepared

Broad focus

Educated public

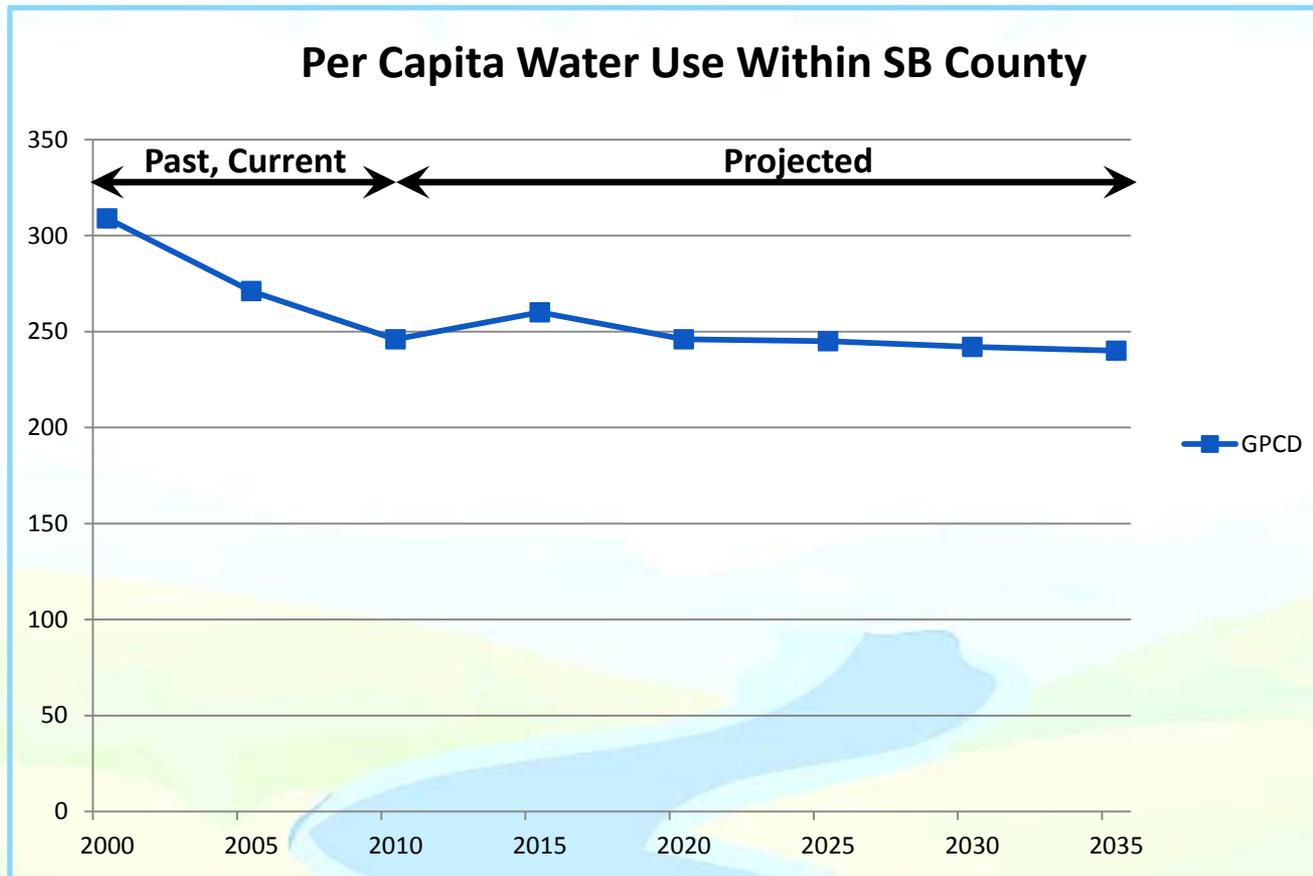
Productive Culture

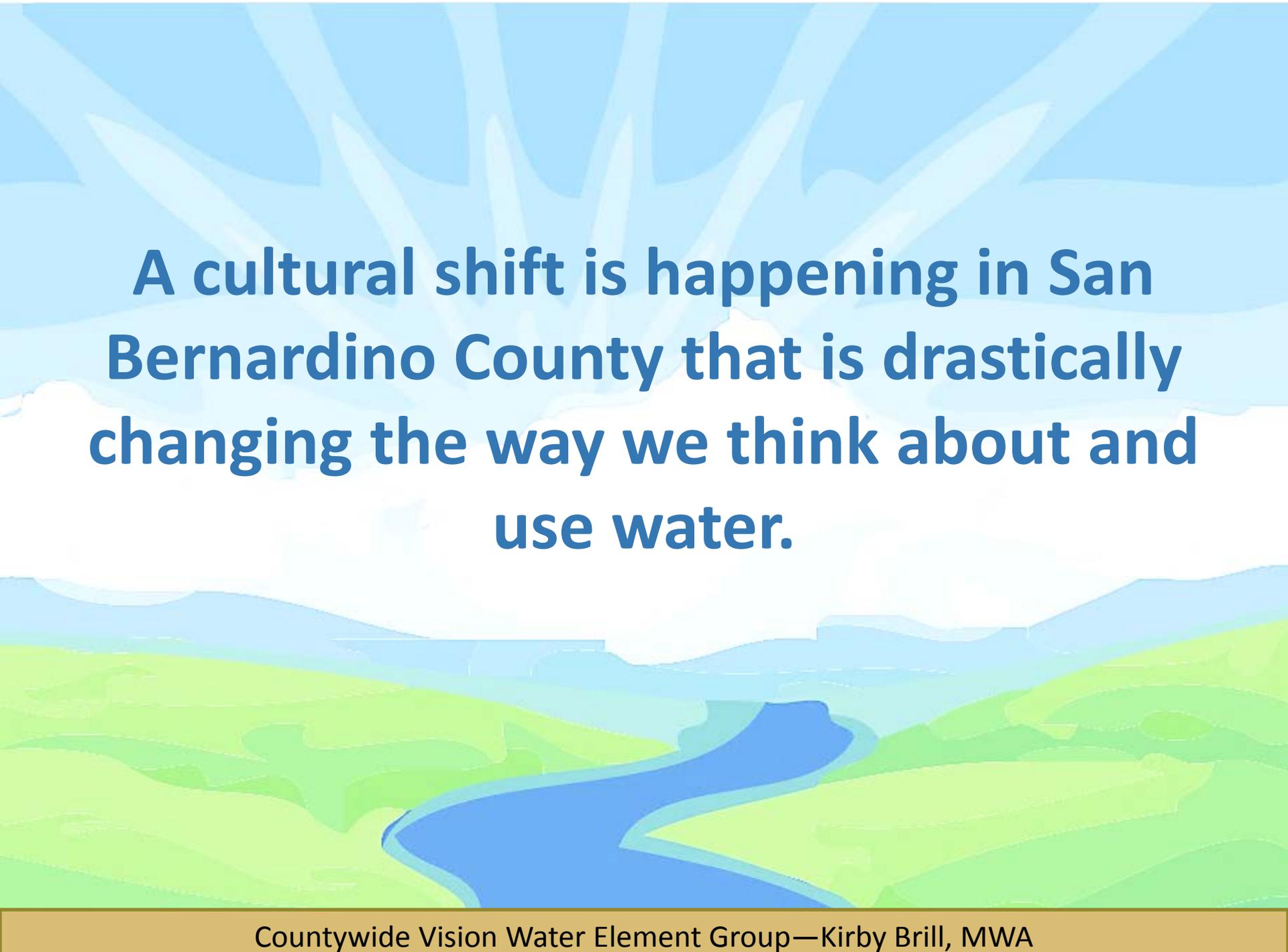
UWMPs become a reality

# Action Points

- **Invest**
- **Collaborate**
- **Change our Culture**

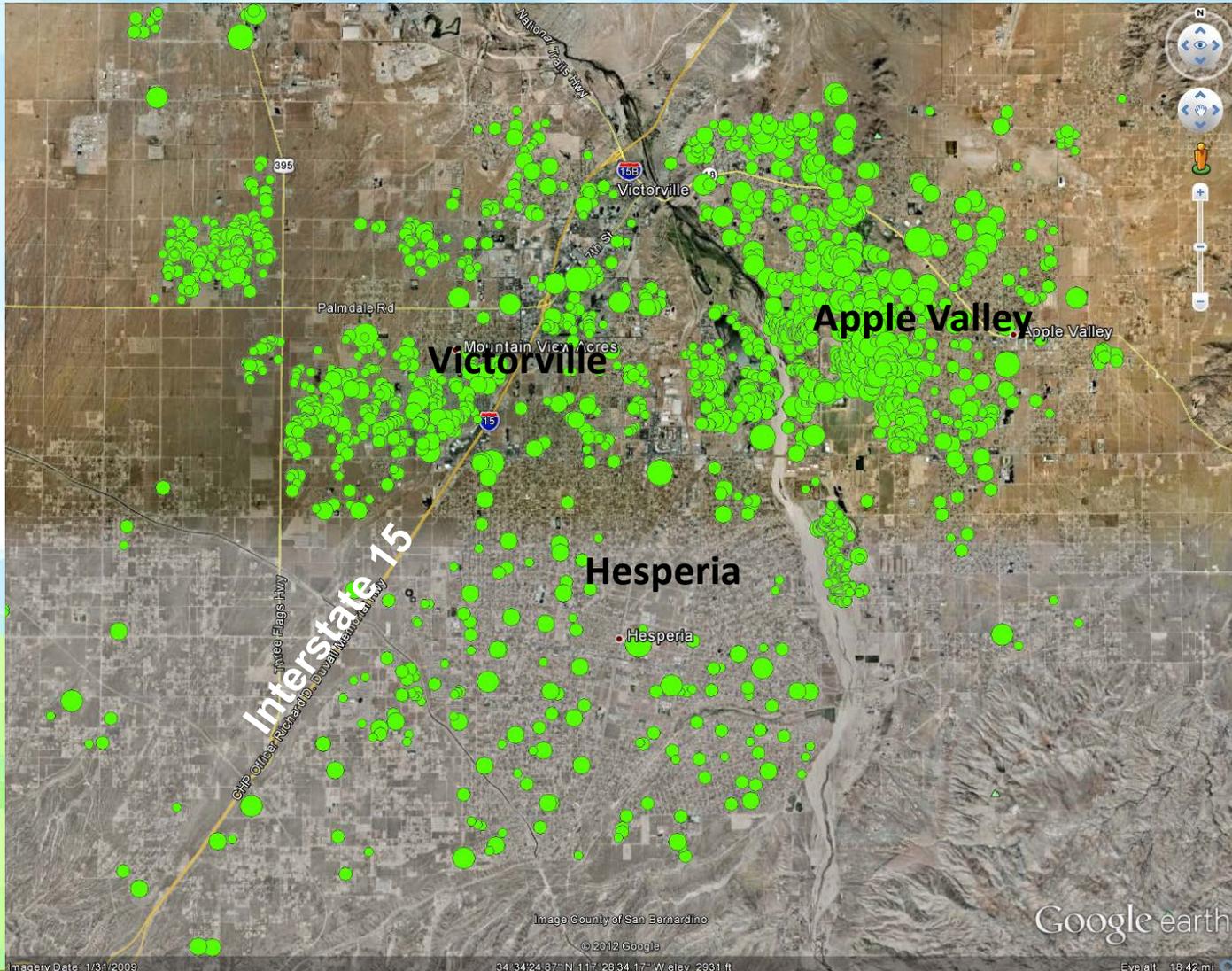
# Can we stretch county water supplies beyond what is projected using more aggressive conservation strategies?





**A cultural shift is happening in San Bernardino County that is drastically changing the way we think about and use water.**

# For example, turf replacement is becoming popular among High Desert residents



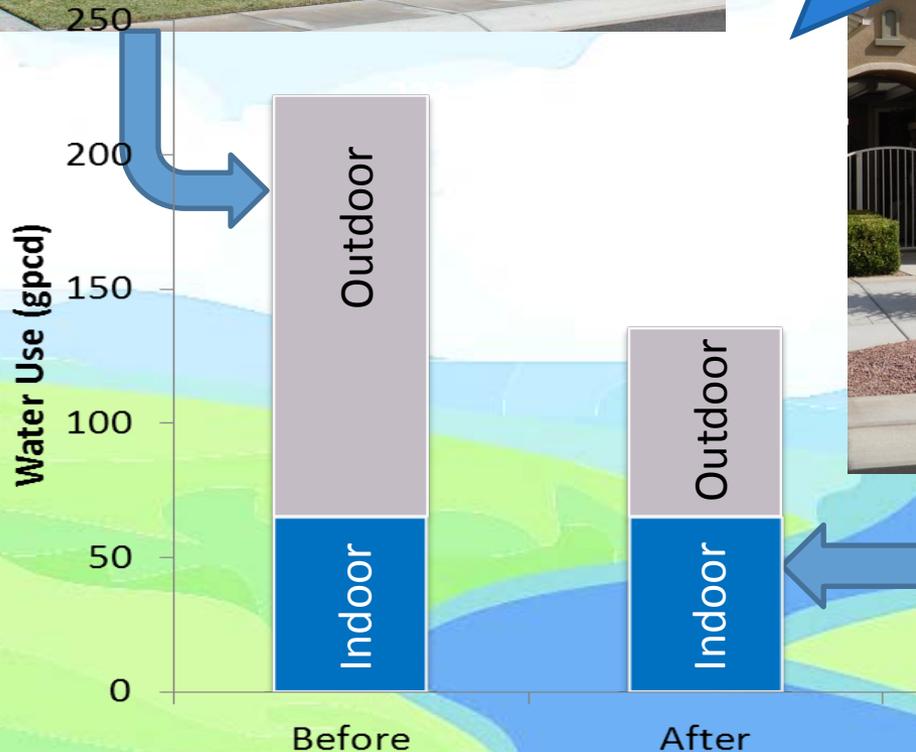
222 gpcd



**Turf Replacement Program participants reduced their water use by 39%...**

**-39%**

135 gpcd



Turf replacement does not only mean cactus and rocks!

# Water Use Efficiency

## Indoor

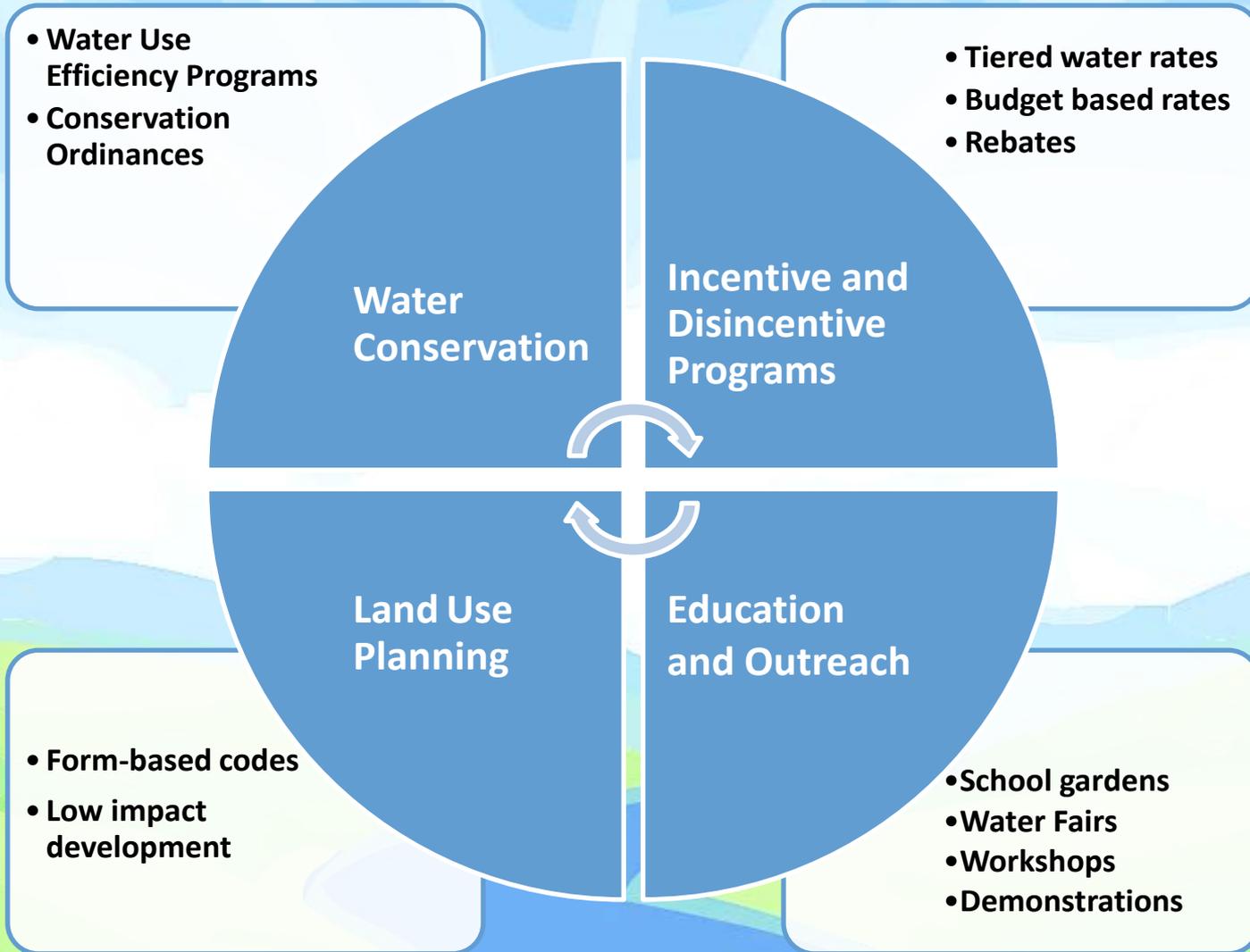
- Toilets
- Shower heads
- Clothes washers
- Dishwashers
- Sink aerators

## Outdoor

- Turf replacement
- Low water use plants
- Smart timers
- Sprinkler nozzles
- Drip irrigation

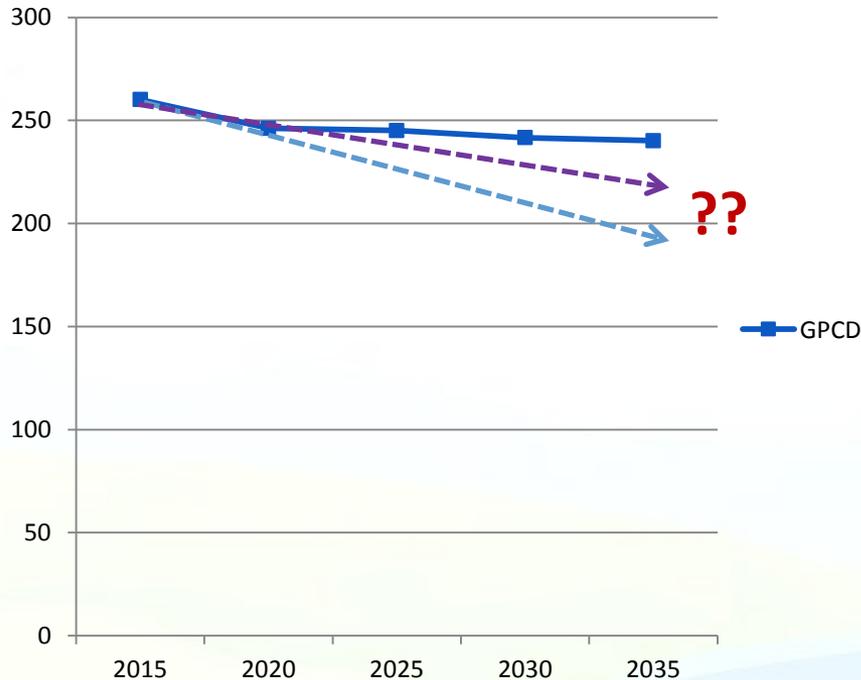


# OPTIMIZE DEMAND MANAGEMENT

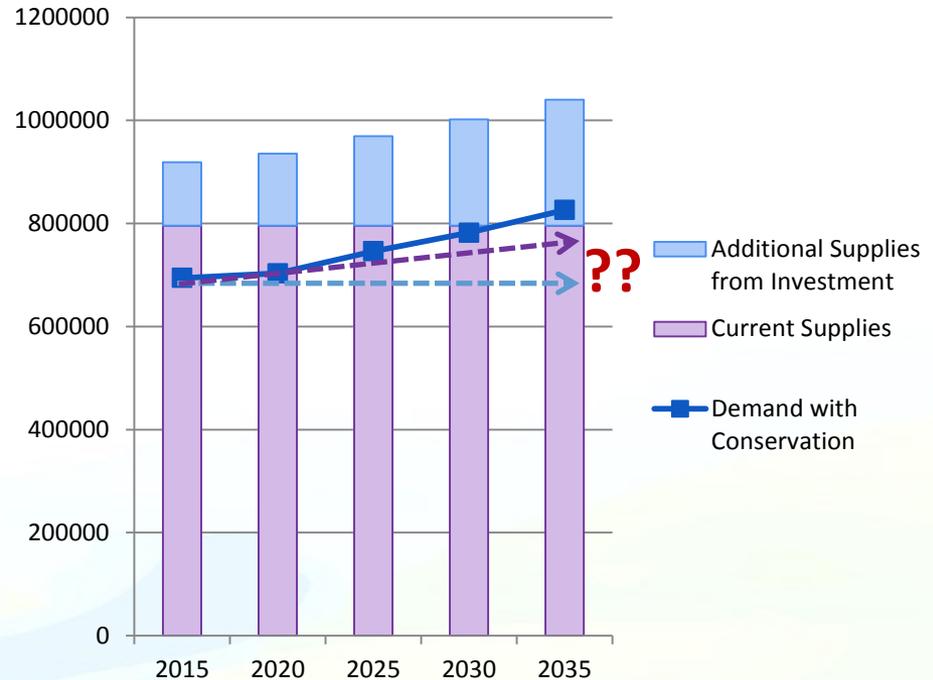


# HOW MUCH POTENTIAL DO WE HAVE TO REDUCE WATER USE COUNTYWIDE?

## Per-Capita Water Use Rates:



## Overall Demand Reduction:



# More is possible!

How much more we conserve and how quickly it happens will vary by region depending upon local perception and investments in conservation

# Action Points

## Invest, Share, Conserve, Collaborate, Educate, Protect

### Capital Improvements

- Recycled water
- Government facility upgrades
- Groundwater development
- Stormwater
- Habitat conservation plans
- Channel conversion
- Delta conveyance
- Diverse resource portfolio

### Incentive/Disincentive Programs

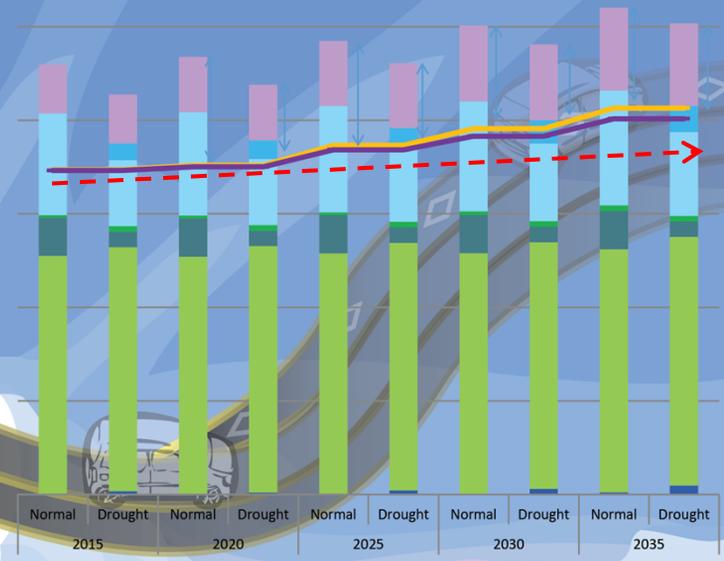
- Tiered rate structures
- Rebate or cash incentive conservation programs
- Shared costs for countywide solutions

### Rules and Regulations

- Land-use planning
- Stormwater
- Local and State ordinances

### Education & Outreach

- Educational & School programs
- Demonstration programs
- Public trust development
- Diverse partnerships
- Garden friendly programs
- Media relations
- Marketing & Publicity



Can you help us  
develop the road  
to get us there?



**We can make this a reality.  
But, not without your help.**