

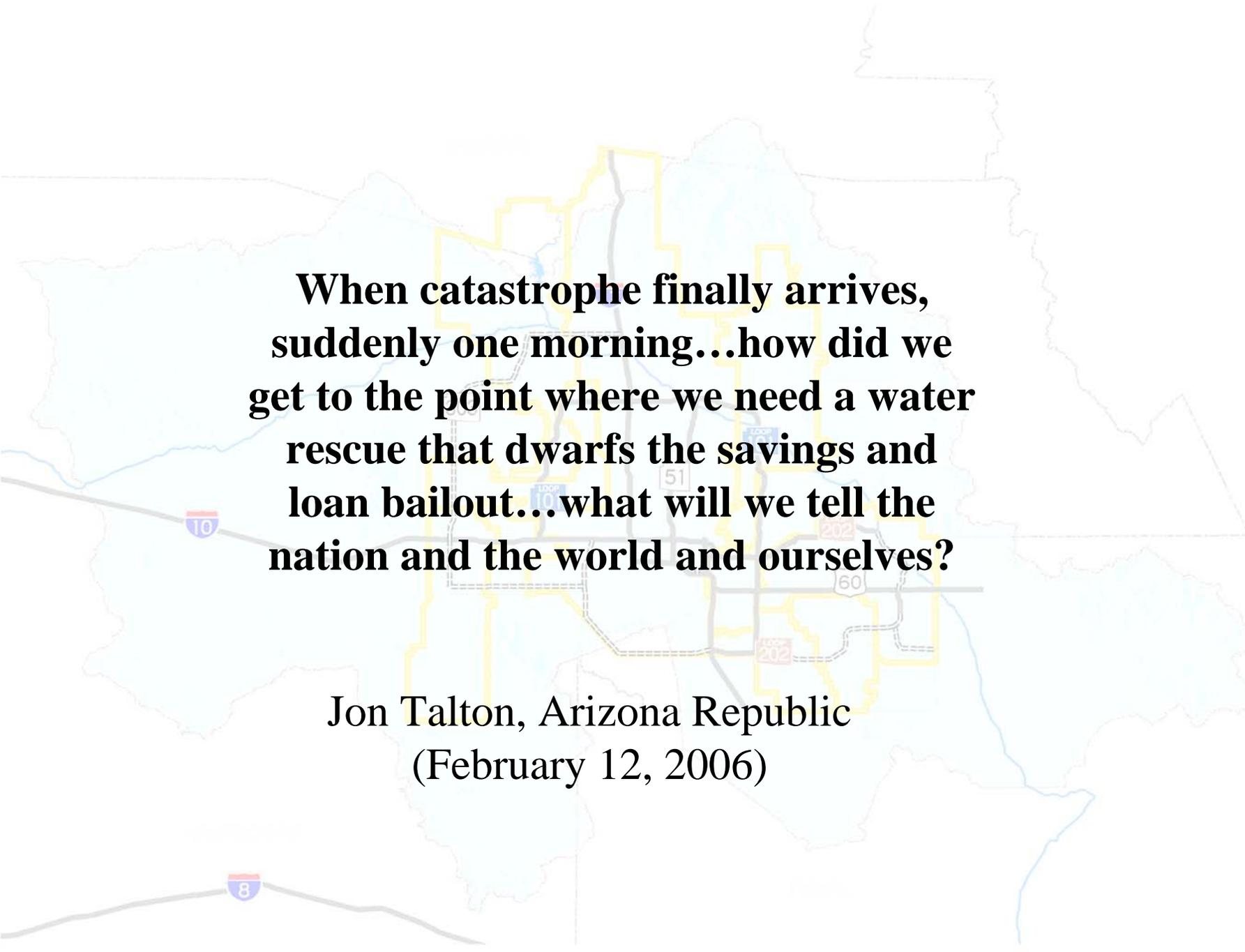
**MAG Planner Stakeholder Group  
May 16, 2006**

**Terri Sue Rossi  
Central Arizona Project**

# Agenda

- **World Overview**
- **State-wide Overview**
  - Population
  - Demands and supplies
- **Three County Service Area Overview**
  - Demands and supplies by assured water supply status



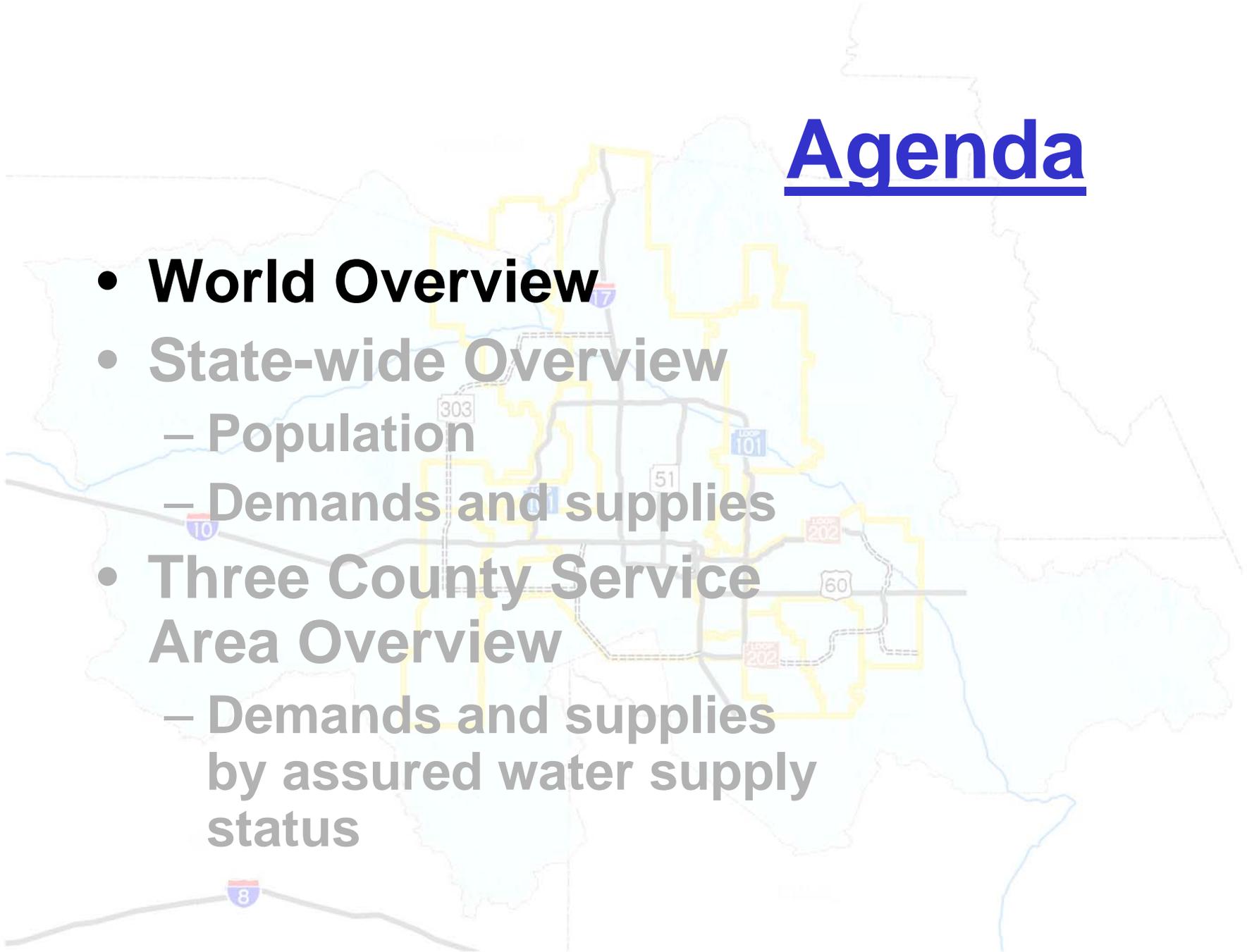


**When catastrophe finally arrives,  
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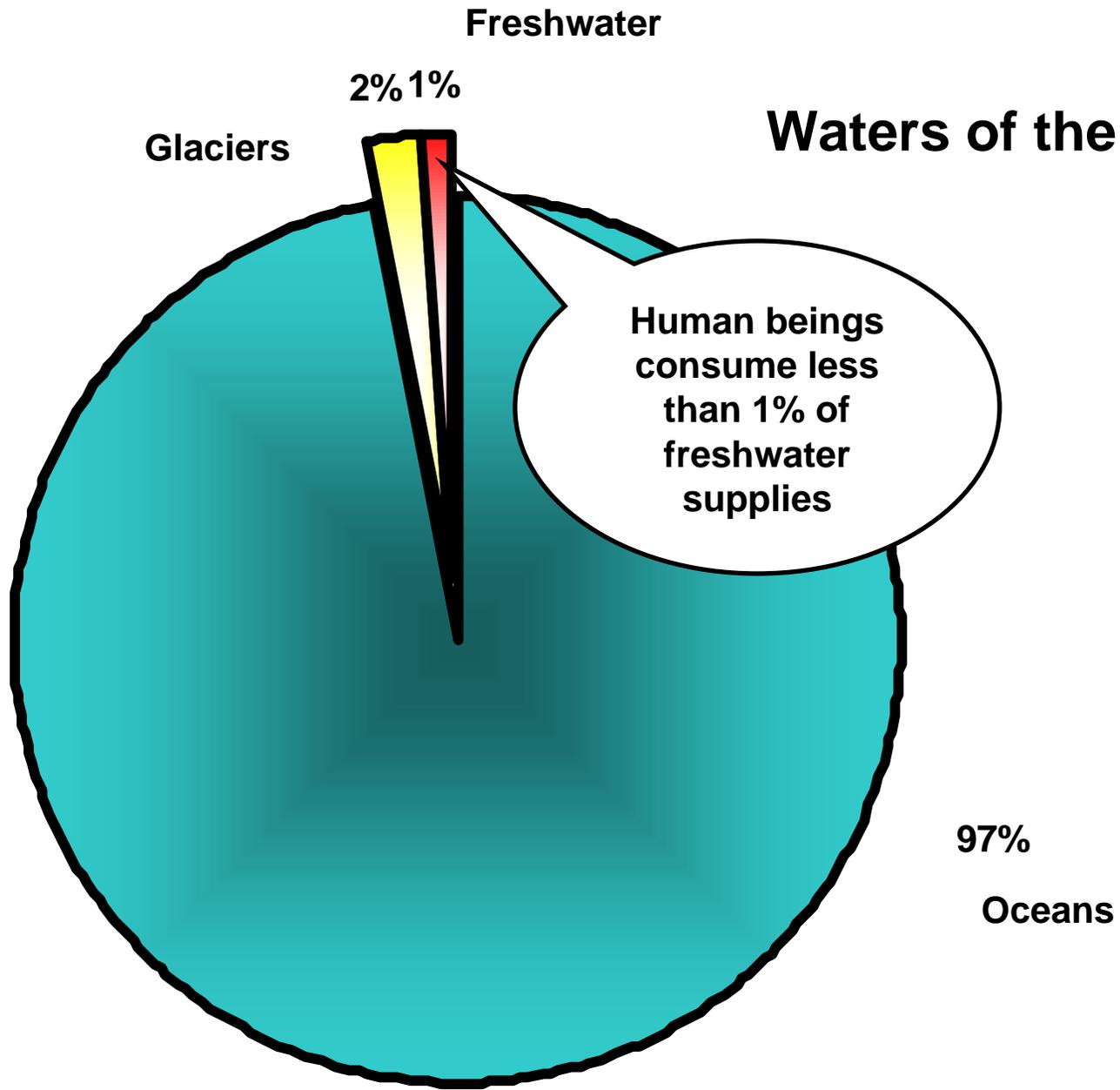
Jon Talton, Arizona Republic  
(February 12, 2006)

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# Waters of the World

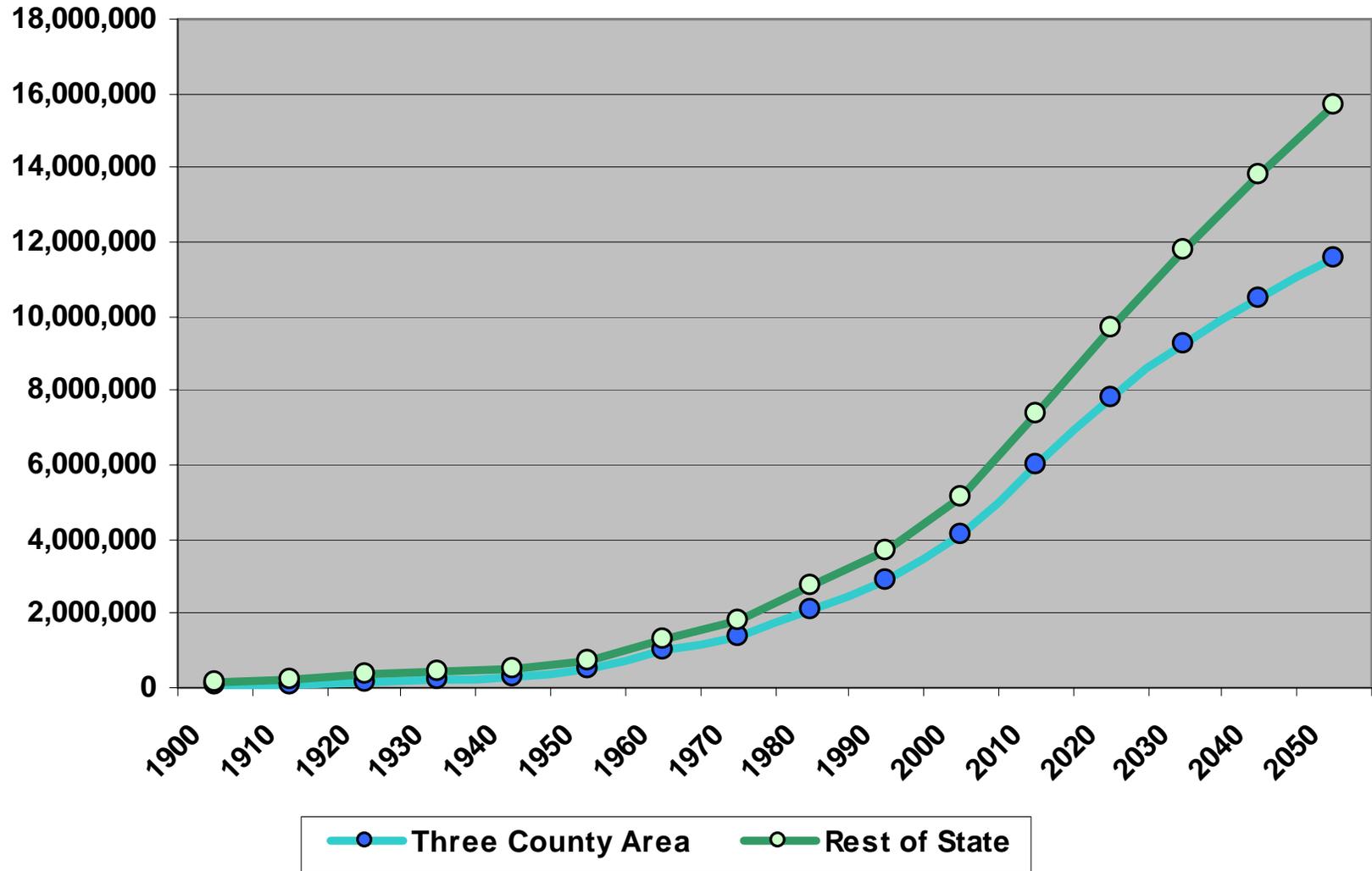


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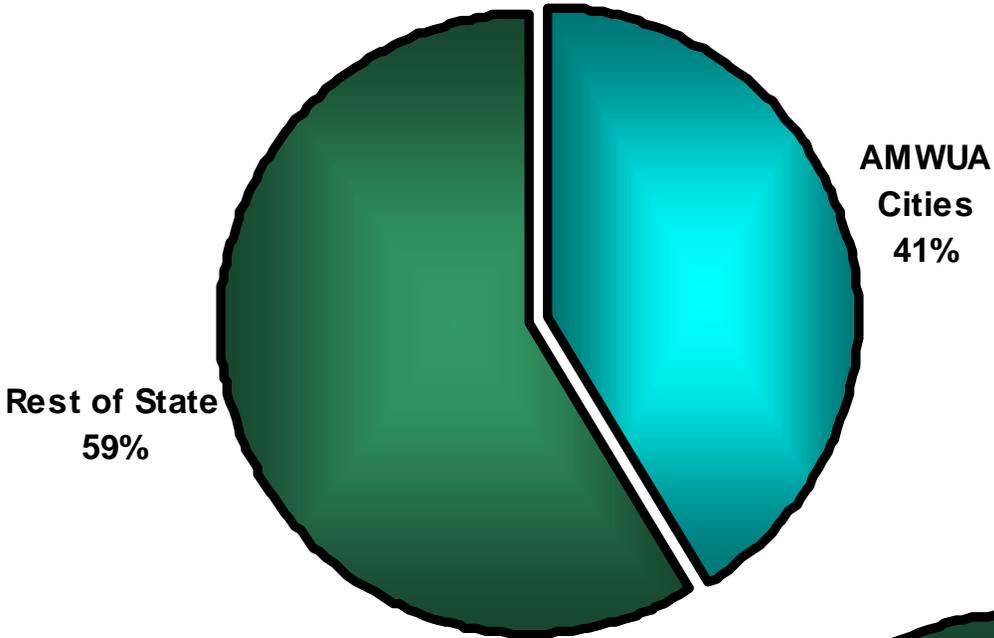


# Population Estimates and Projections 1900 to 2050



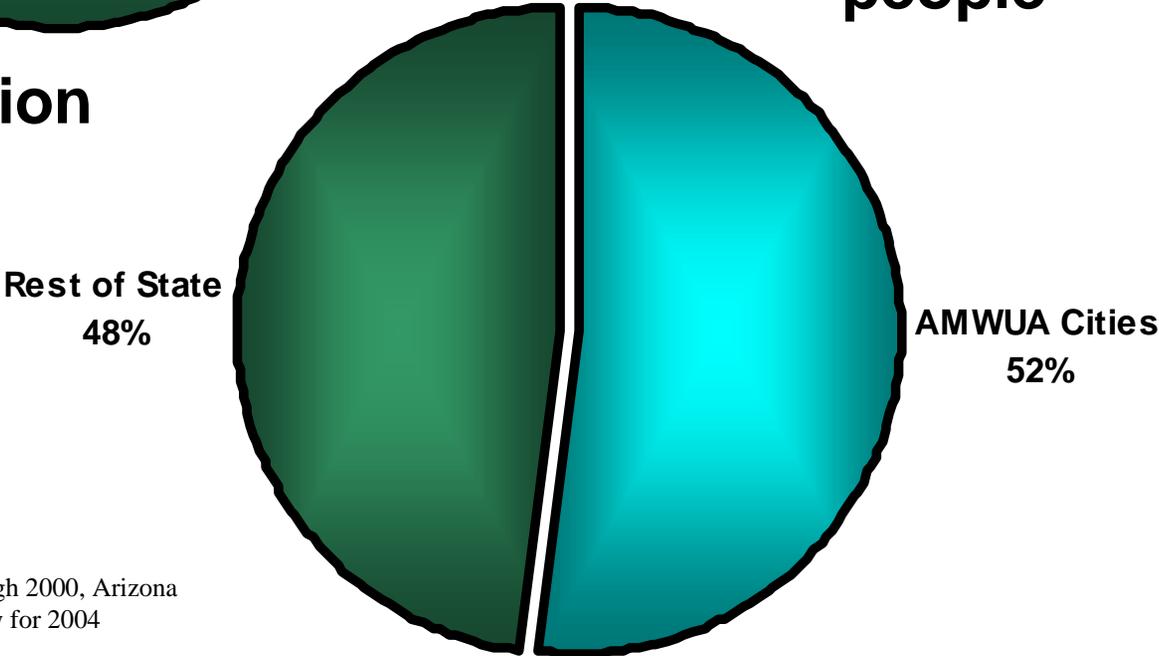
SOURCE: U.S. Census Bureau 1900 to 2000; Arizona Department of Economic Security 2010 to 2050 (April 2006 Projections)

# Distribution of Total Population



**1960 = 1.3 million people**

**2004 = 5.8 million people**

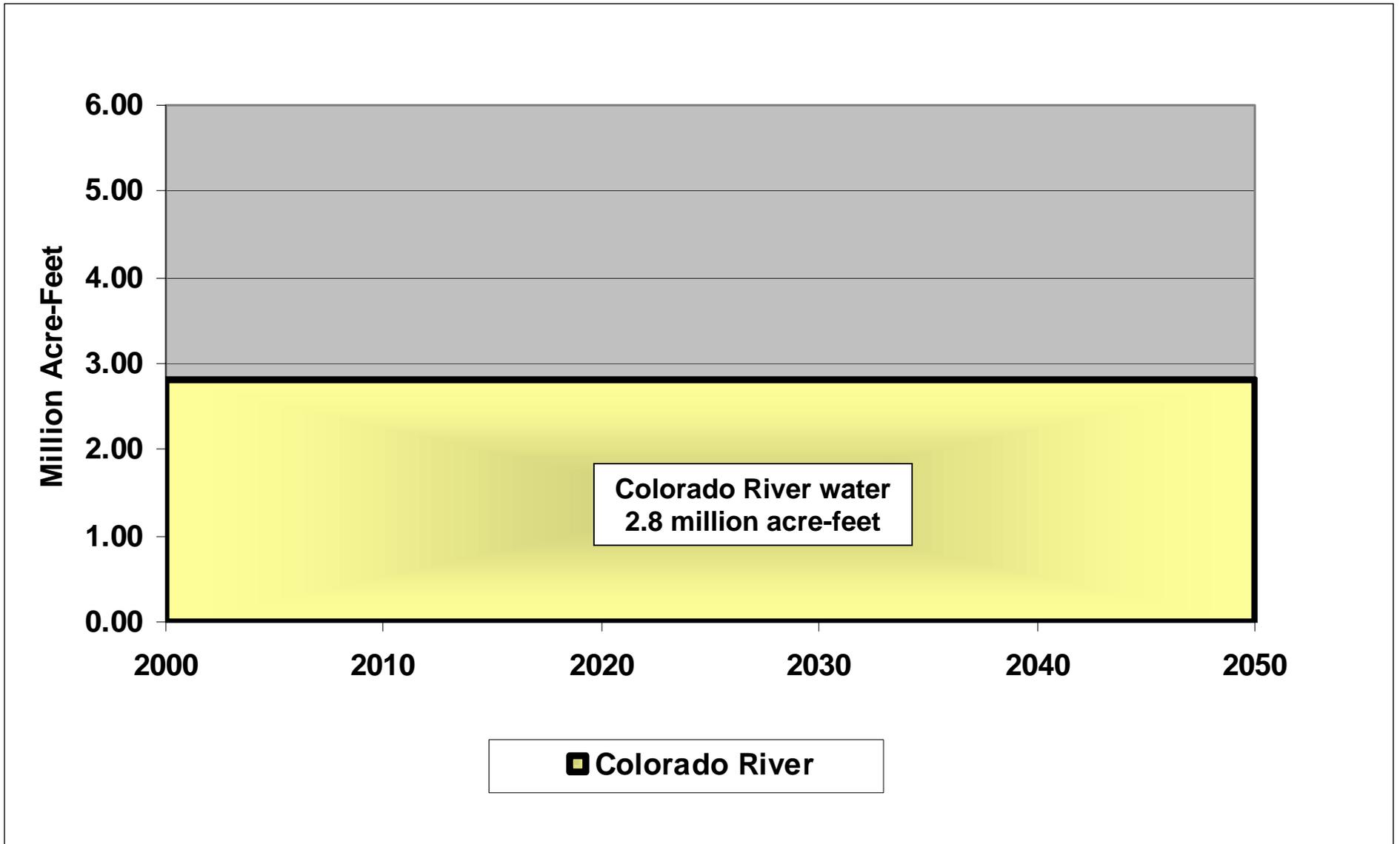


SOURCE: U.S. Bureau of Census through 2000, Arizona Department of Economic Security for 2004

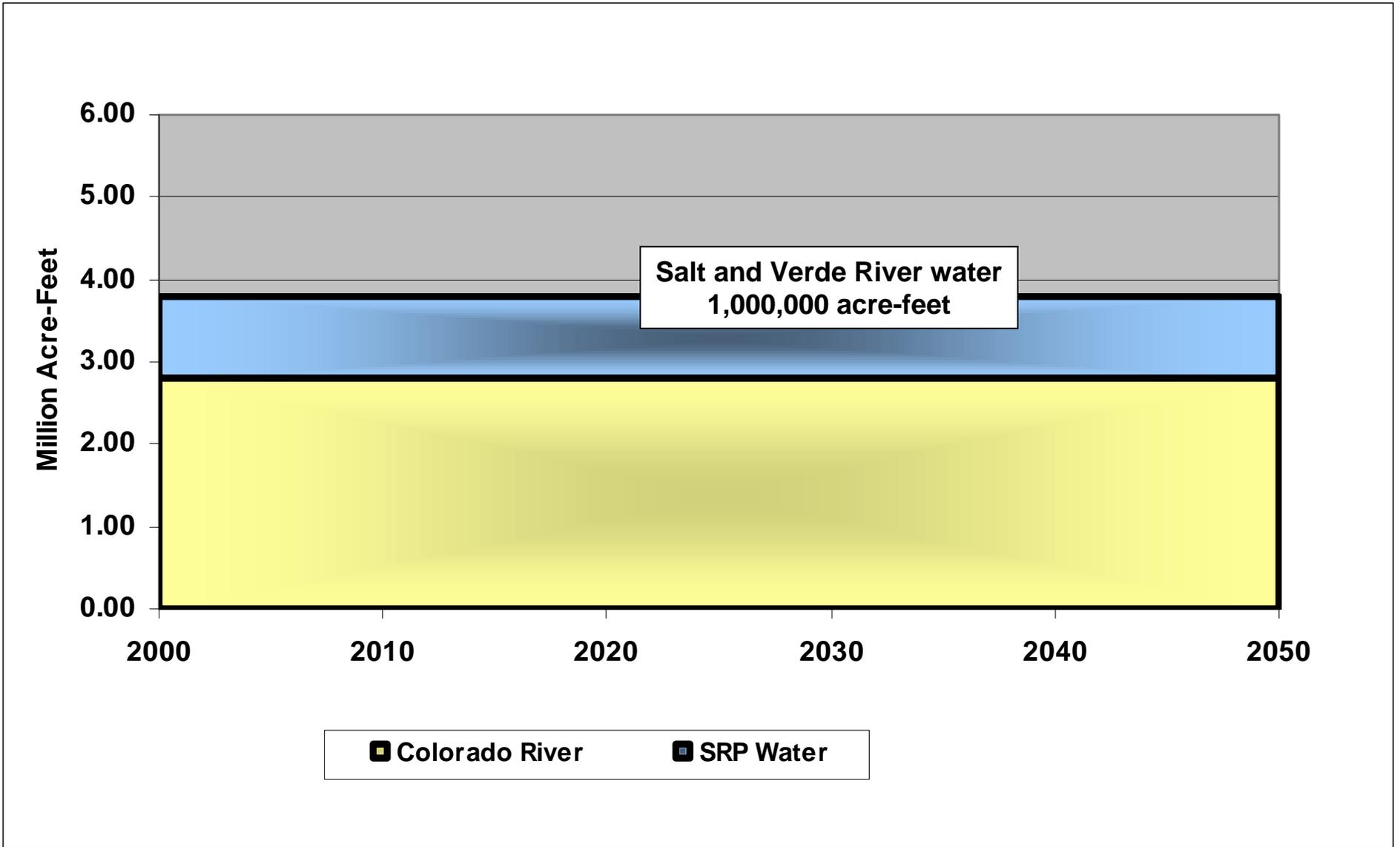
# Major Assumptions

- **MAG “Red Dot” Projections**
- **Effluent reuse 25% of demand**
- **Groundwater use outside three county service area 50% of demand**
- **Agriculture demand is 50% of Colorado River entitlement and 40% of SRP entitlement**
- **Water efficiency decreasing demands by 15% over 45 years**

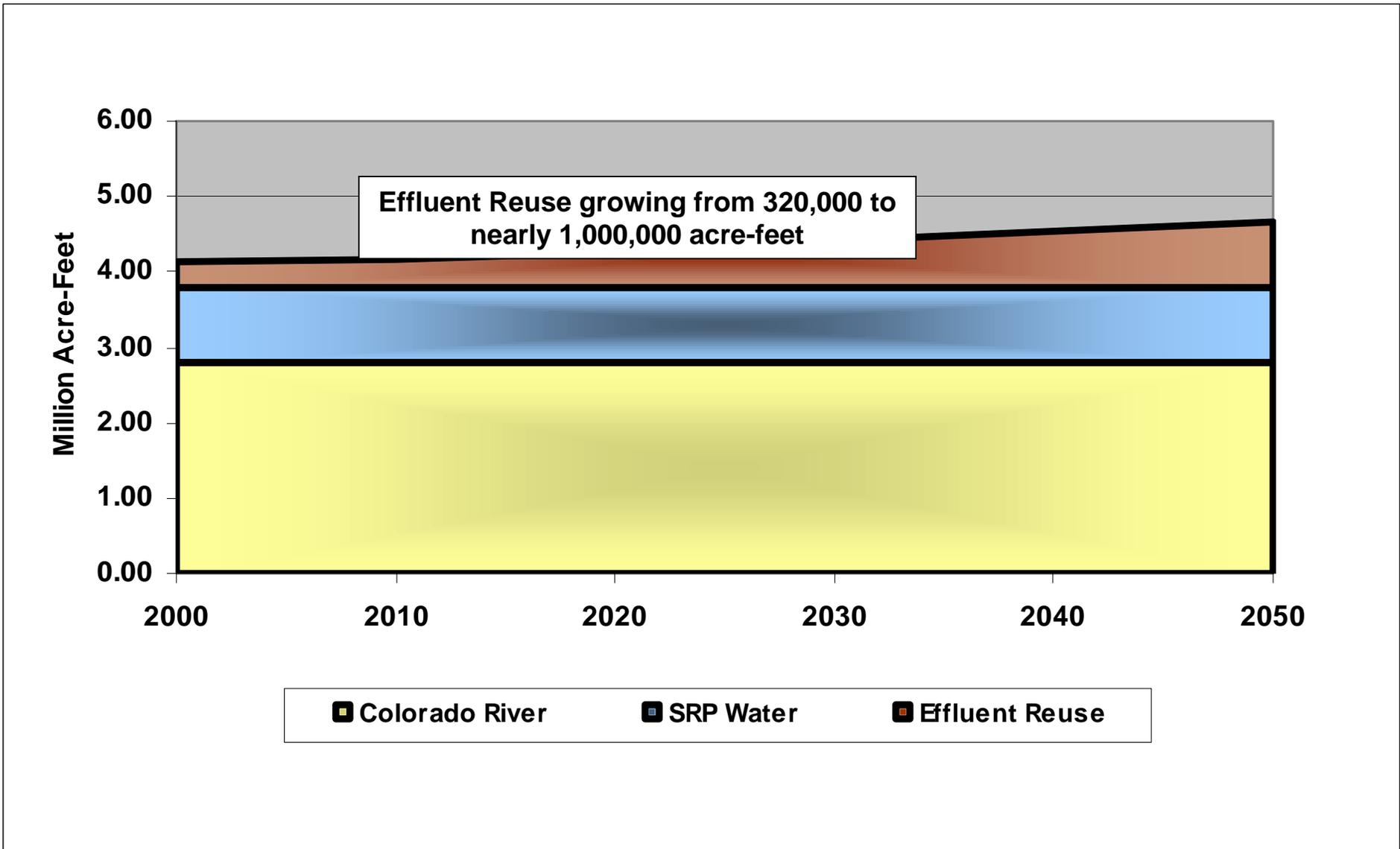
# Statewide Supply and Demand – High Level Overview



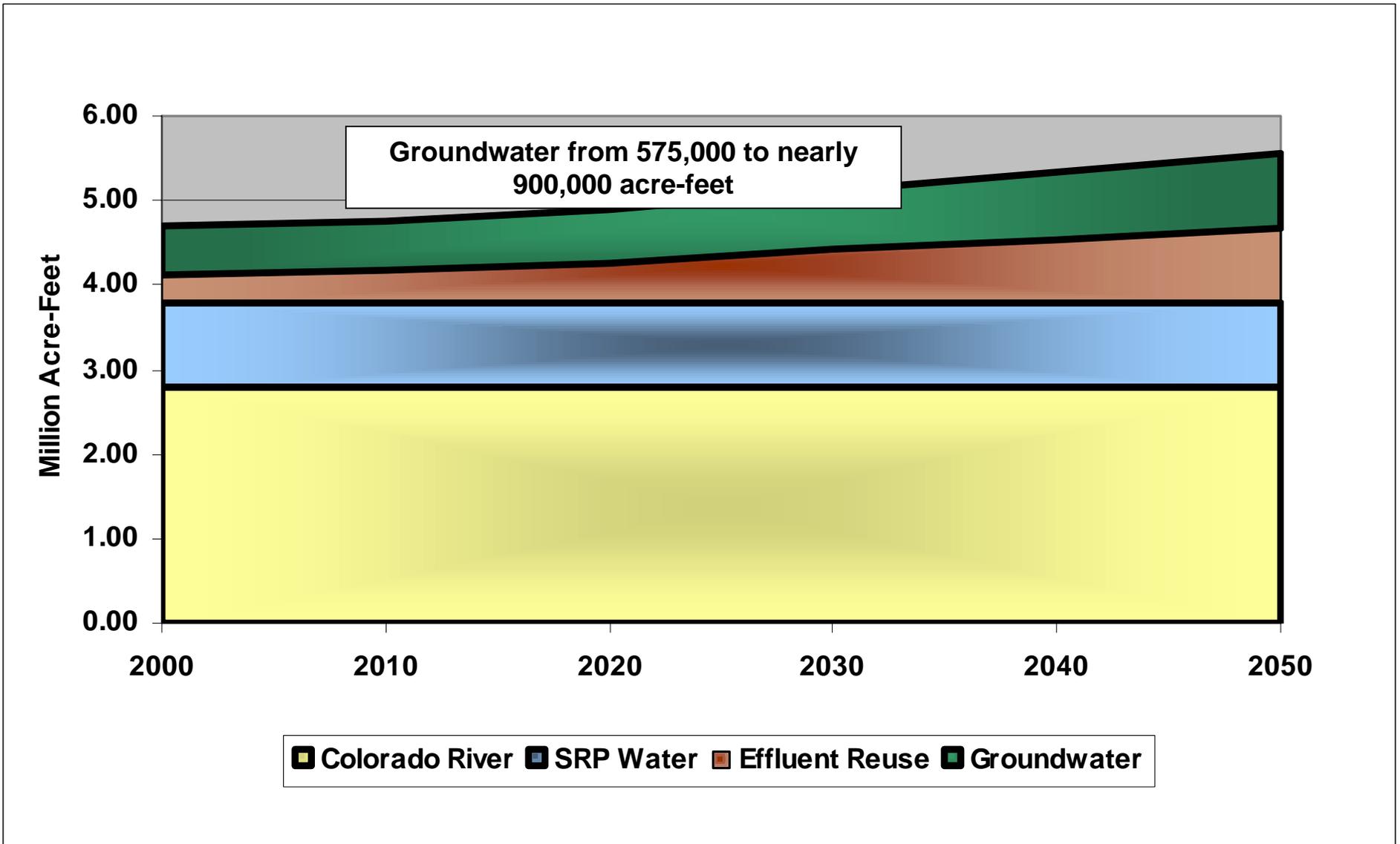
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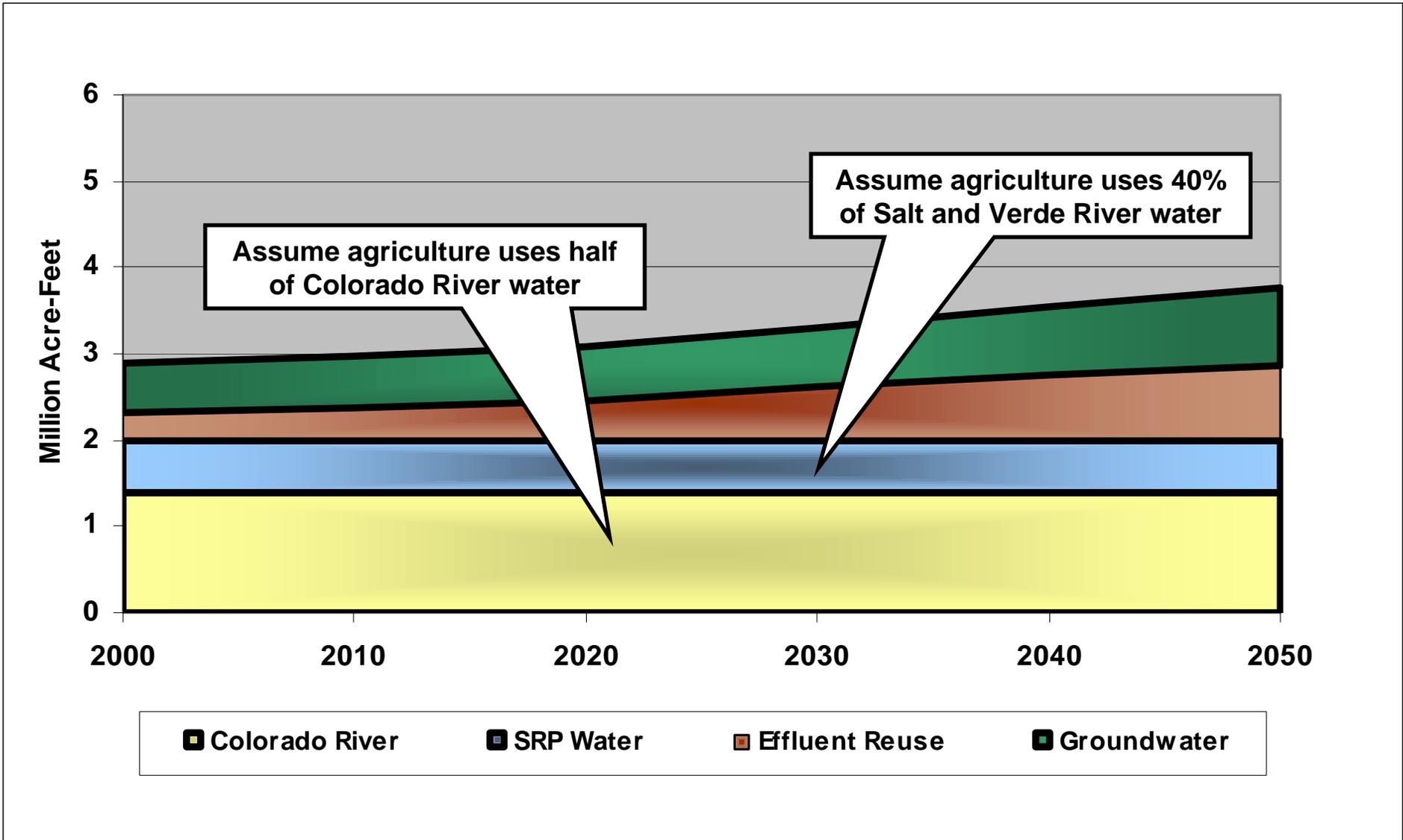
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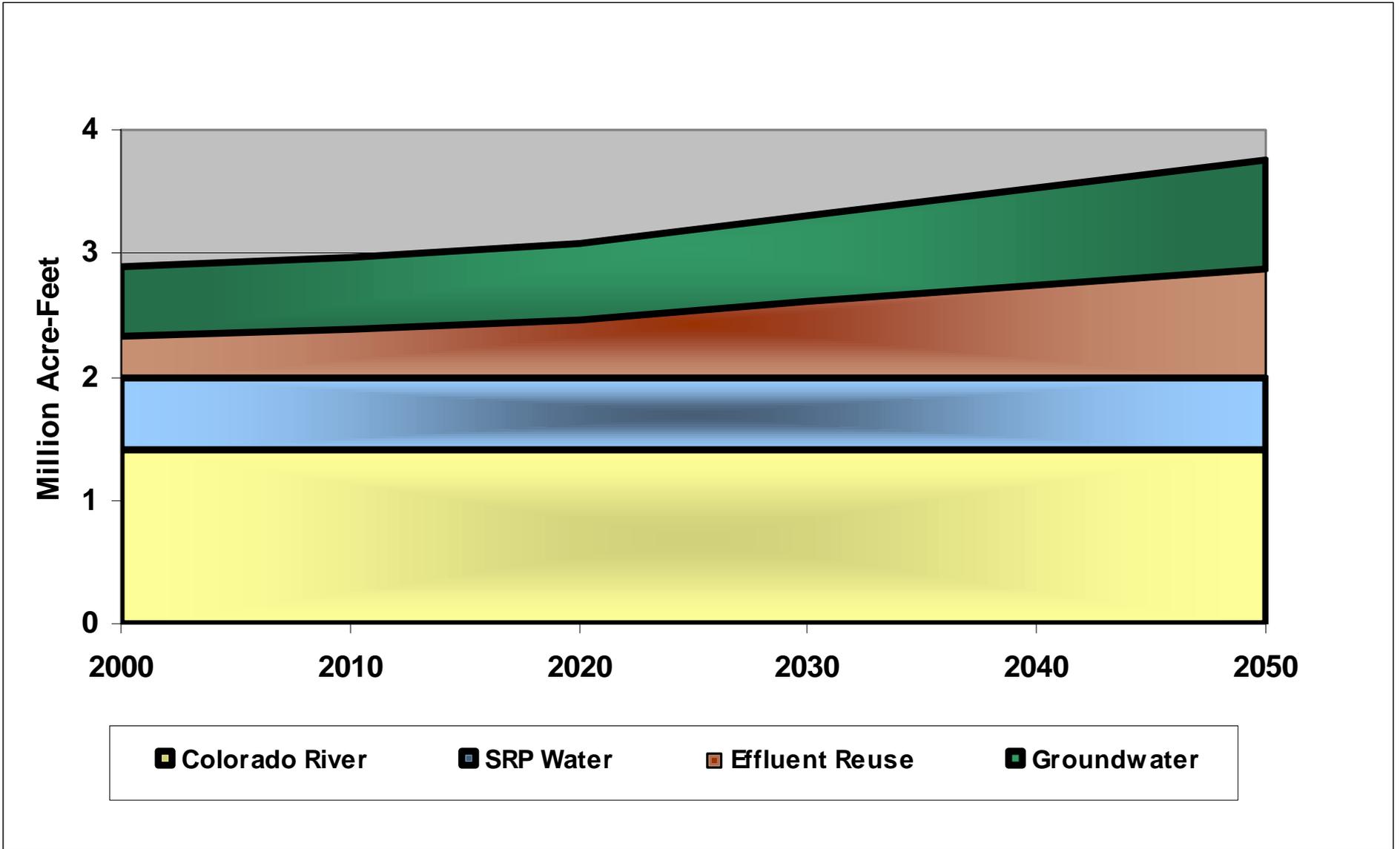
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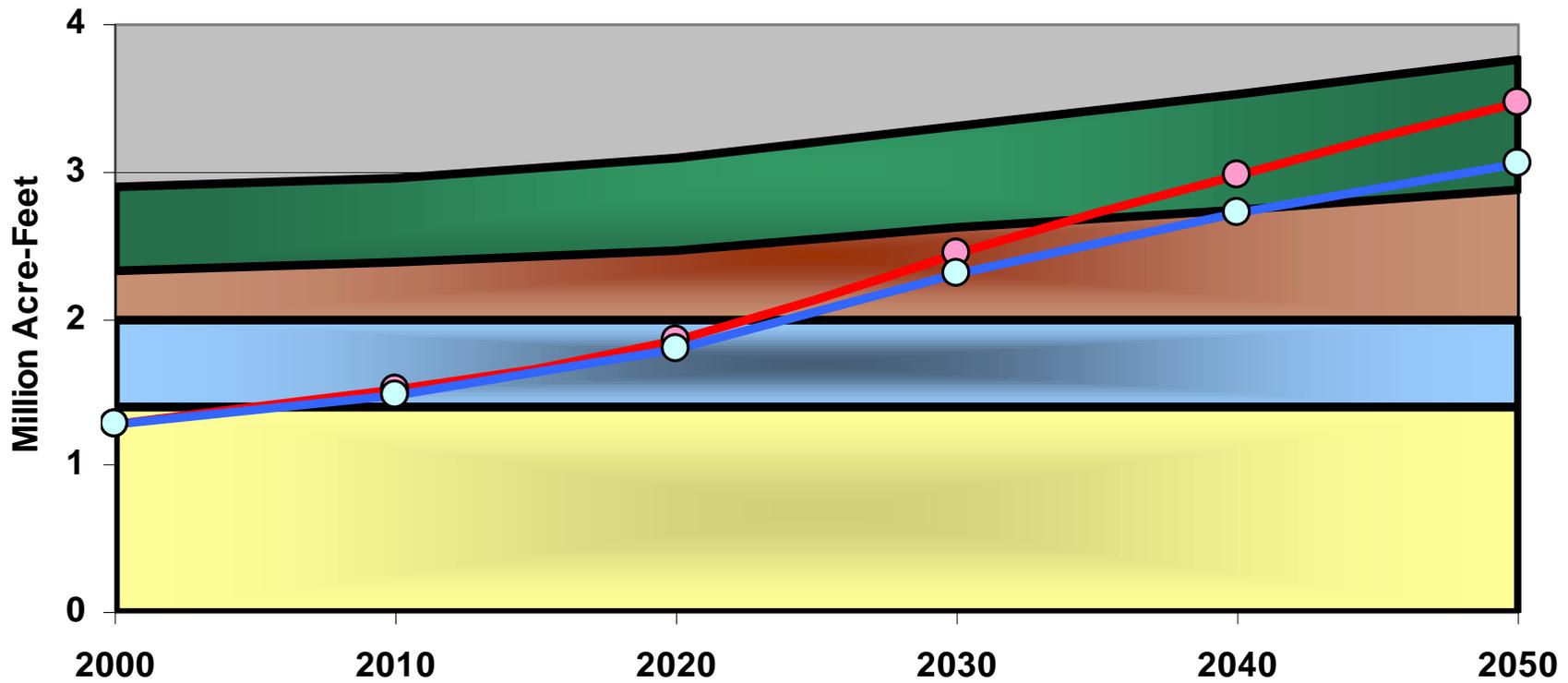
# Statewide Supply and Demand – High Level Overview



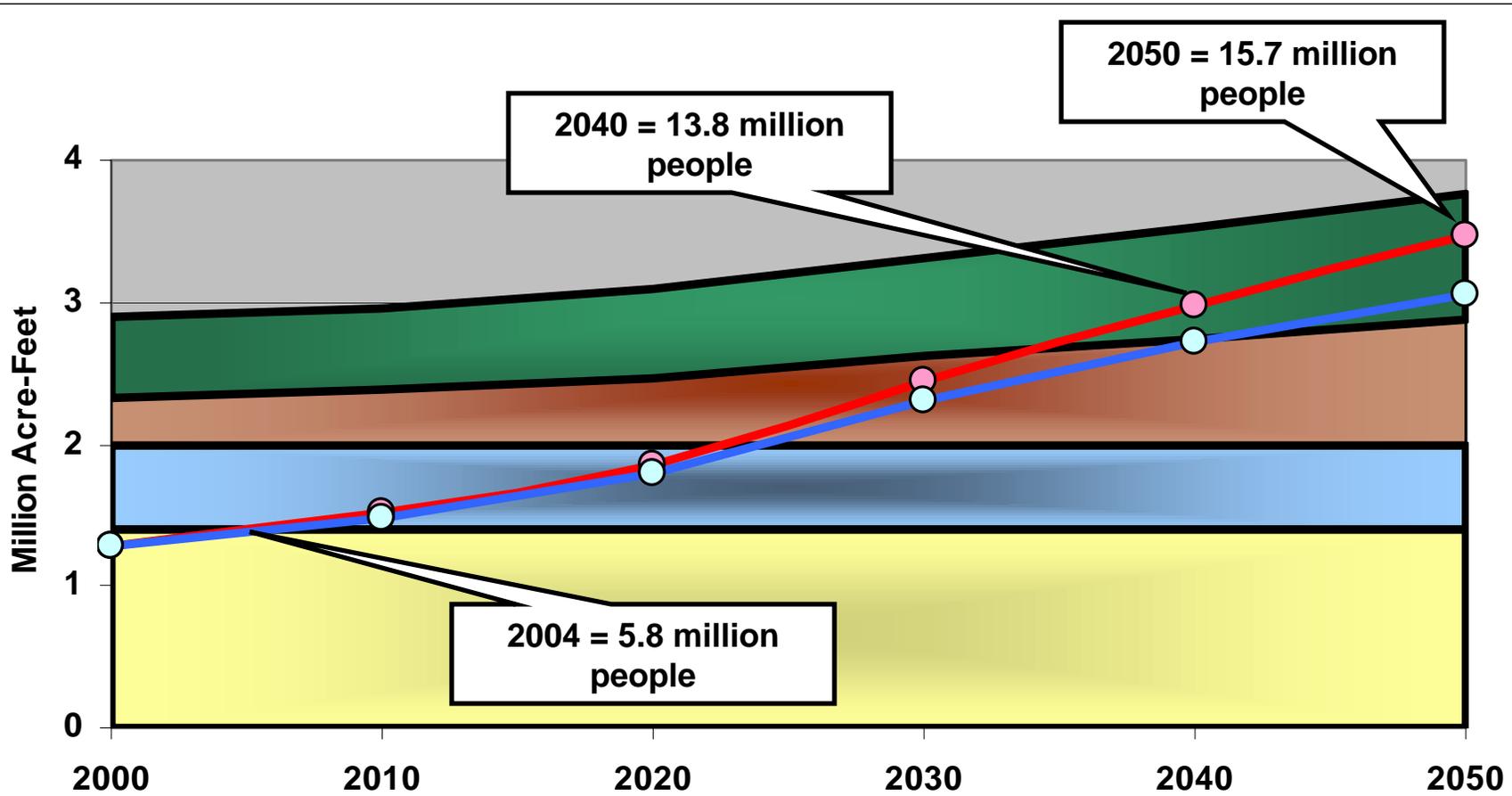
# Statewide Supply and Demand – High Level Overview



# Statewide Supply and Demand – High Level Overview Municipal Only



# Statewide Supply and Demand – High Level Overview Municipal Only



# Agenda

- World Overview
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# Assured Water Supply

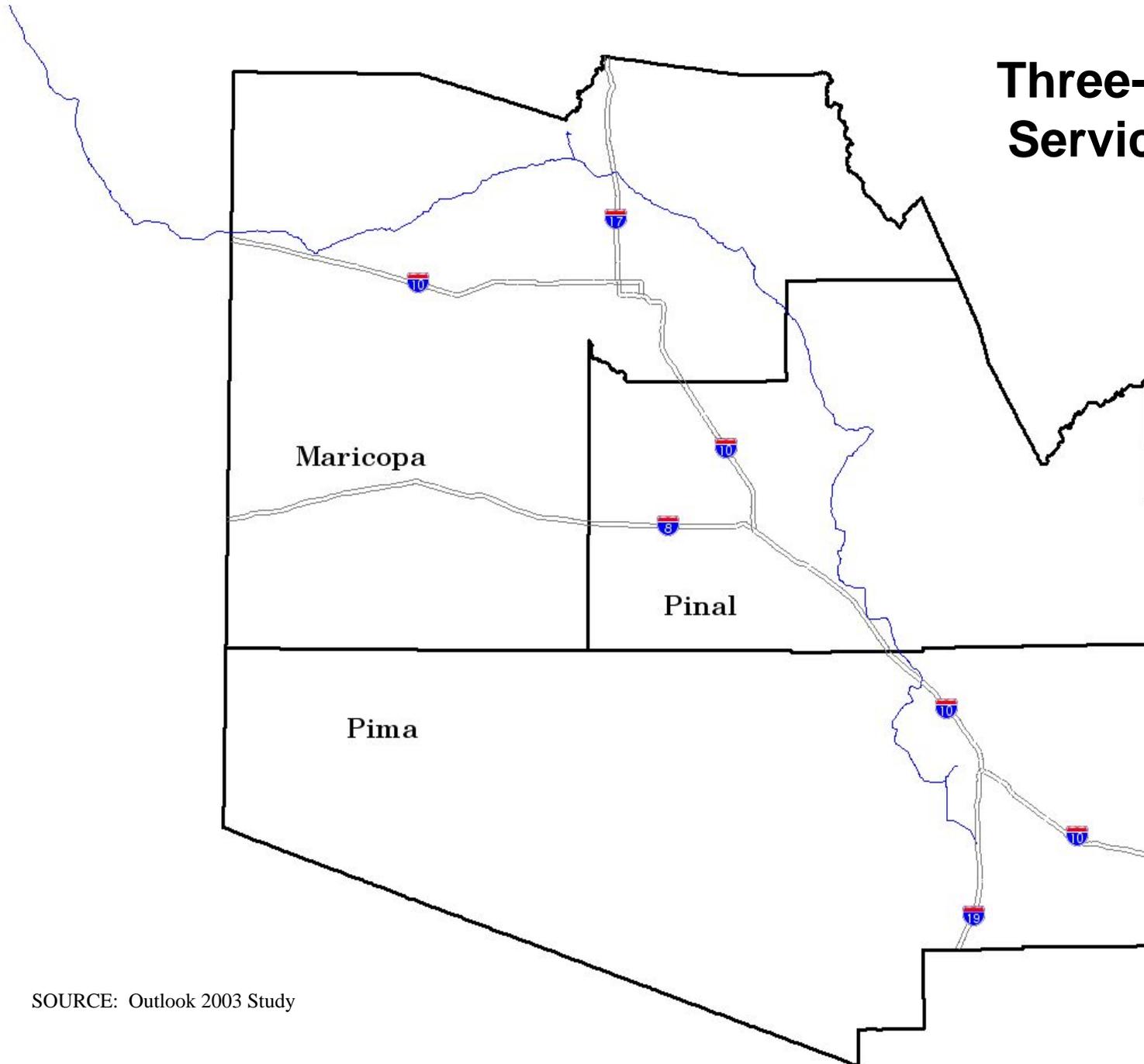
- **State regulation applies to areas regulated under the Groundwater Code**
  - Primarily Maricopa, Pinal, Pima and Santa Cruz counties and Prescott area
  - Less restrictive program outside these areas
- **Requires development of a 100 year dependable, renewable water supply**
  - Designation
  - Certificate based

**Aka limited use of groundwater**

# Assured Water Supply

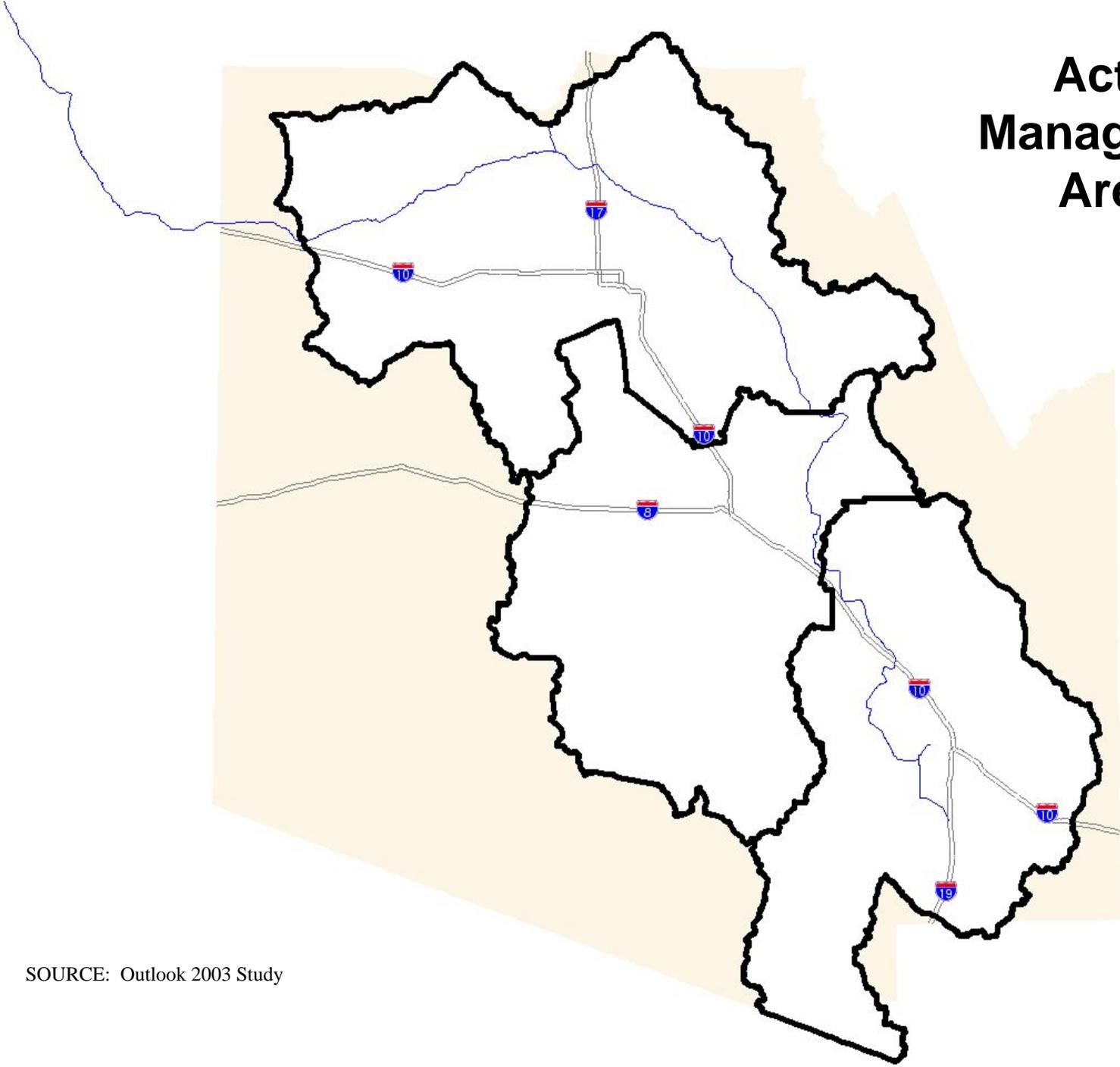
- **Groundwater use allowed but must join CAGRD**
  - **Central Arizona Groundwater Replenishment District**
  - **Replaces groundwater used by water provider or subdivision**
- **Types of CAGRD members**
  - **Member service areas**
  - **Member lands (i.e. subdivisions)**

# Three-County Service Area



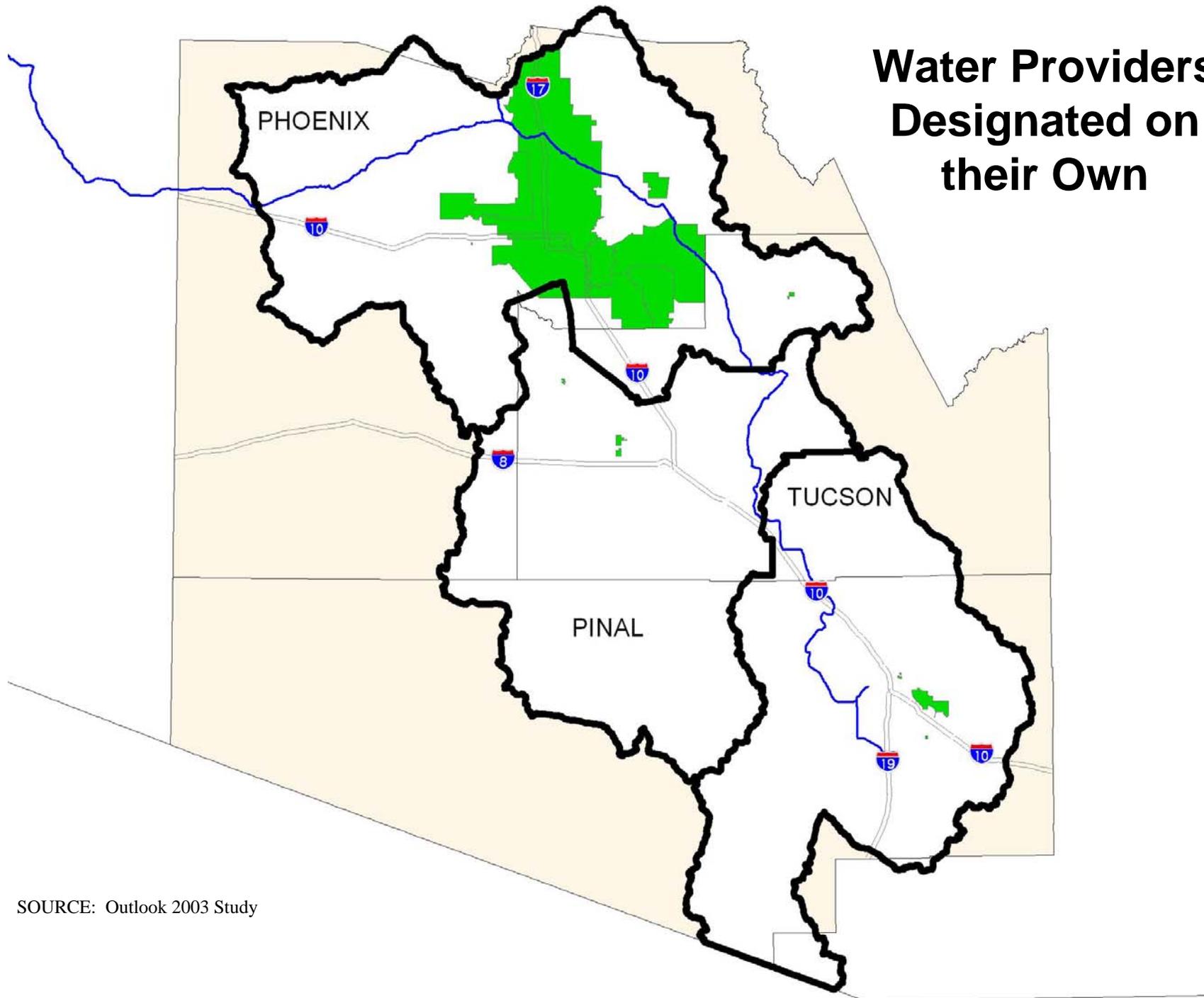
SOURCE: Outlook 2003 Study

# Active Management Areas



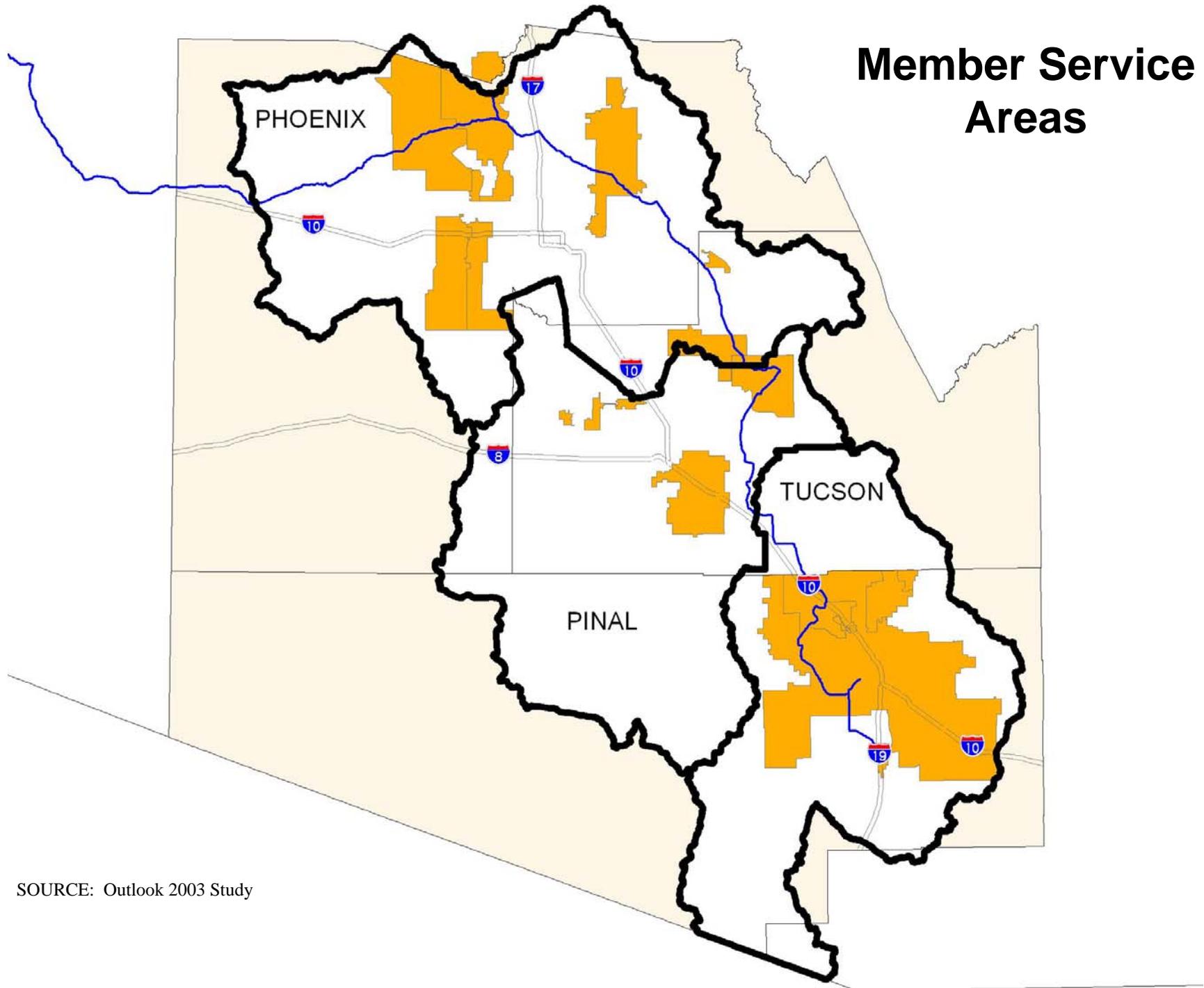
SOURCE: Outlook 2003 Study

# Water Providers Designated on their Own



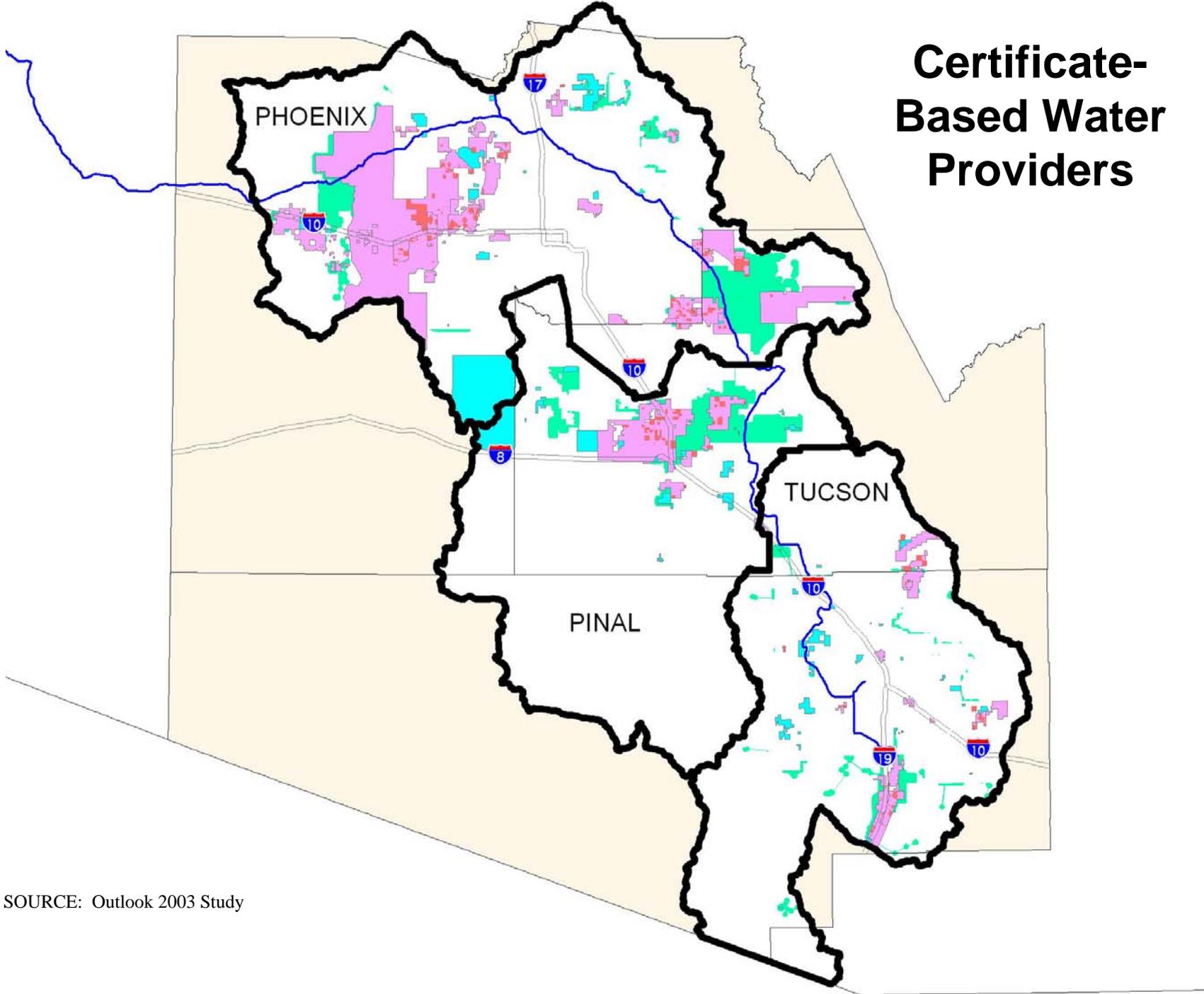
SOURCE: Outlook 2003 Study

# Member Service Areas



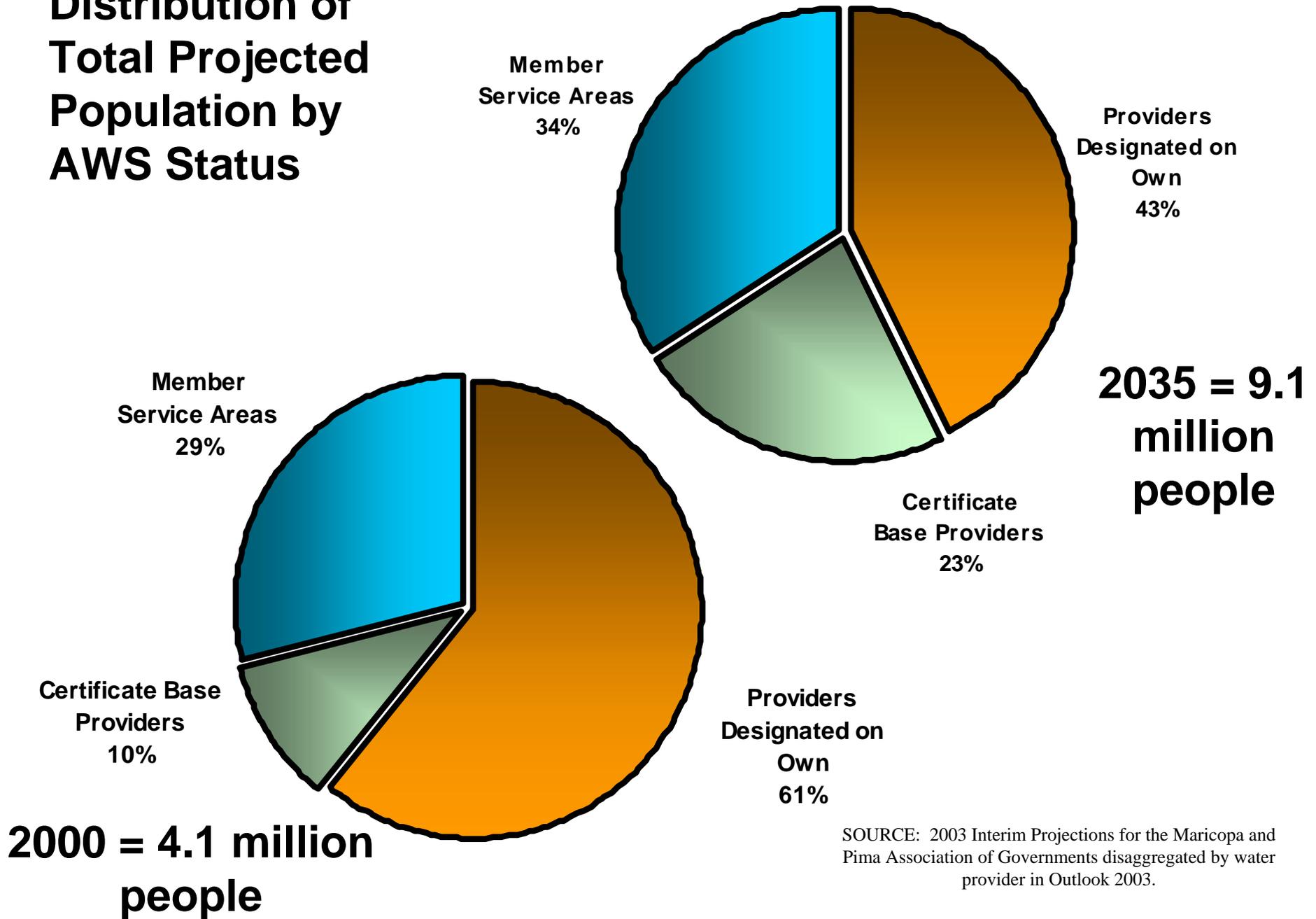
SOURCE: Outlook 2003 Study

# Certificate-Based Water Providers



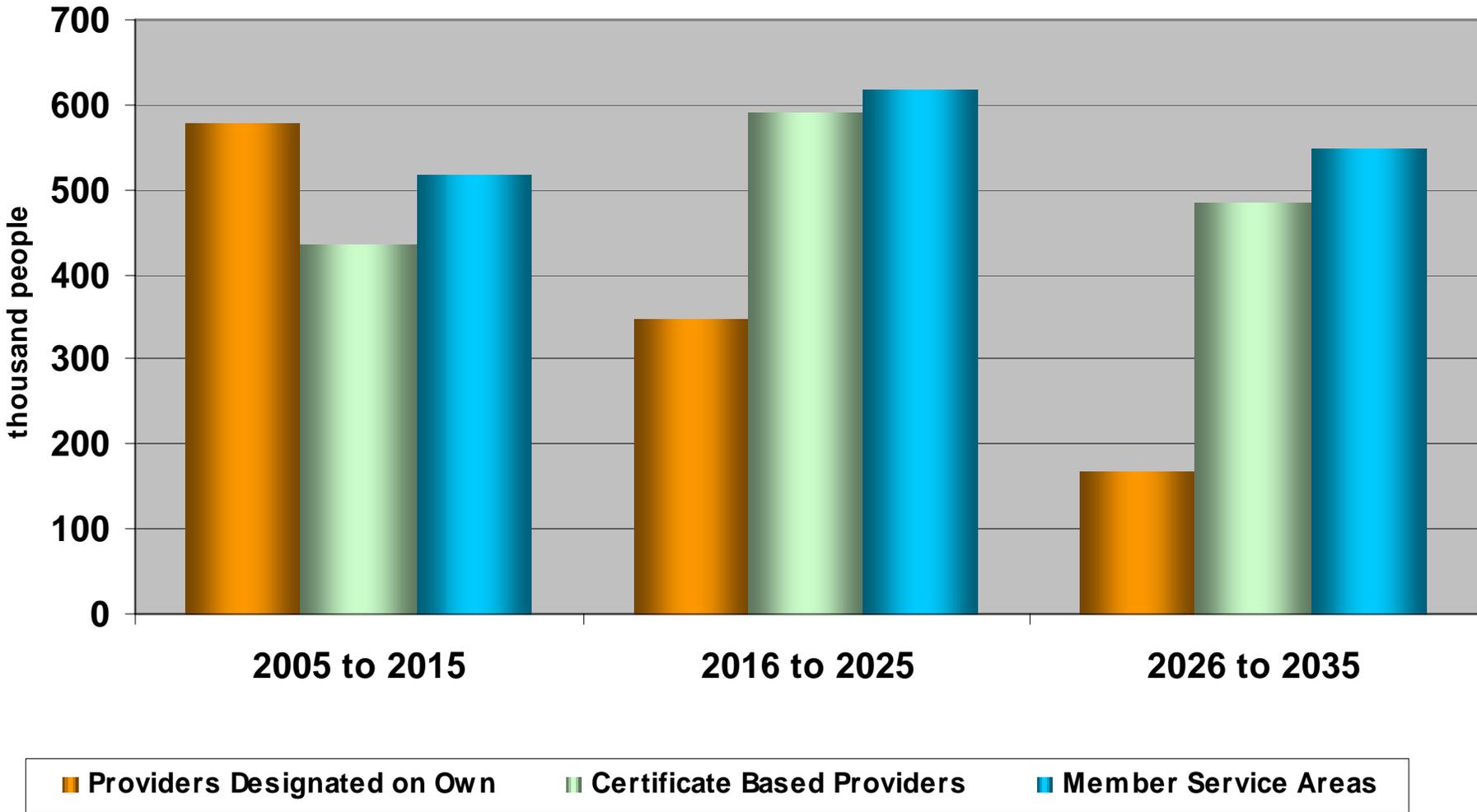
SOURCE: Outlook 2003 Study

# Distribution of Total Projected Population by AWS Status



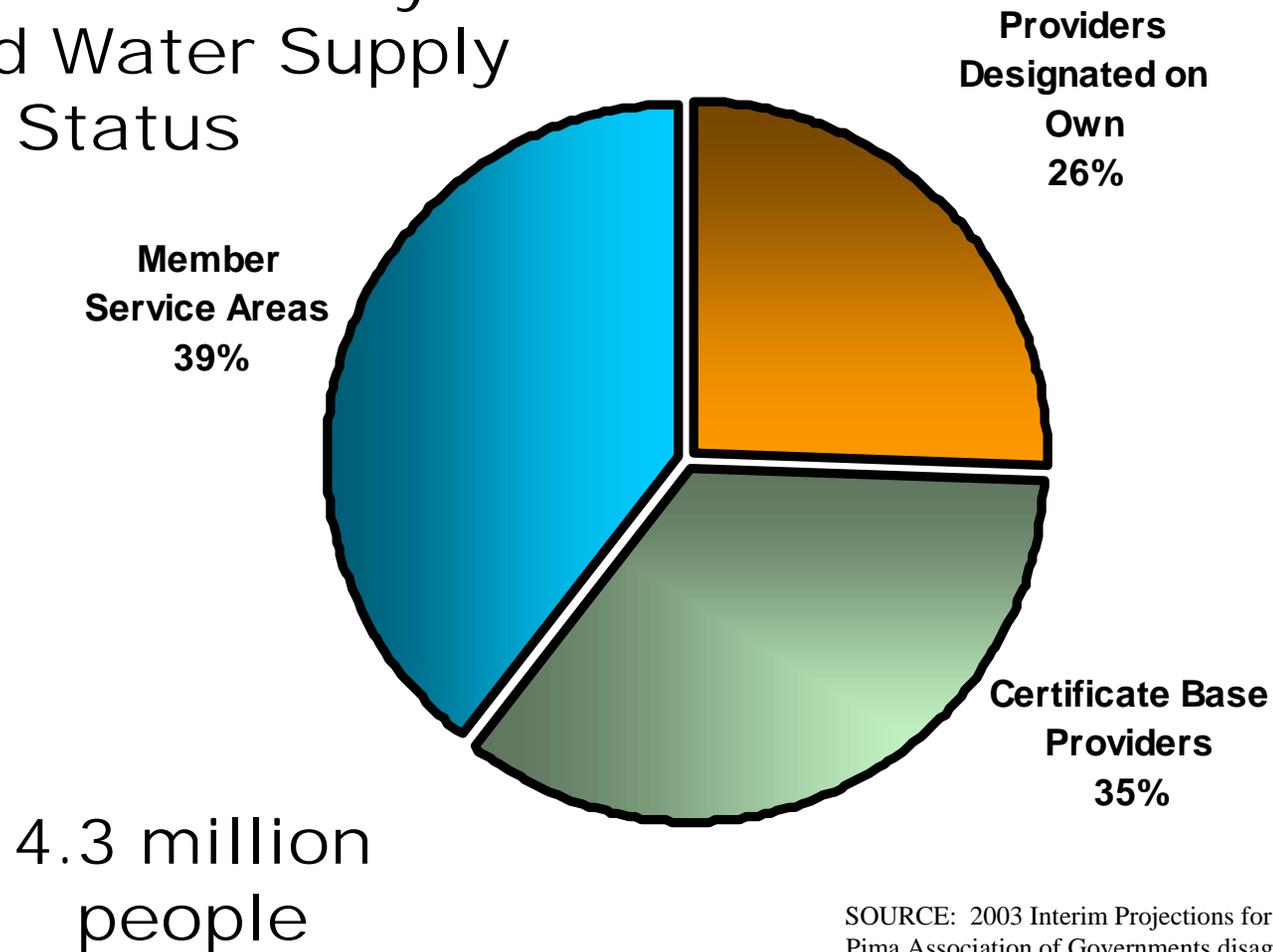
SOURCE: 2003 Interim Projections for the Maricopa and Pima Association of Governments disaggregated by water provider in Outlook 2003.

# Distribution of Projected Growth by Assured Water Supply Status



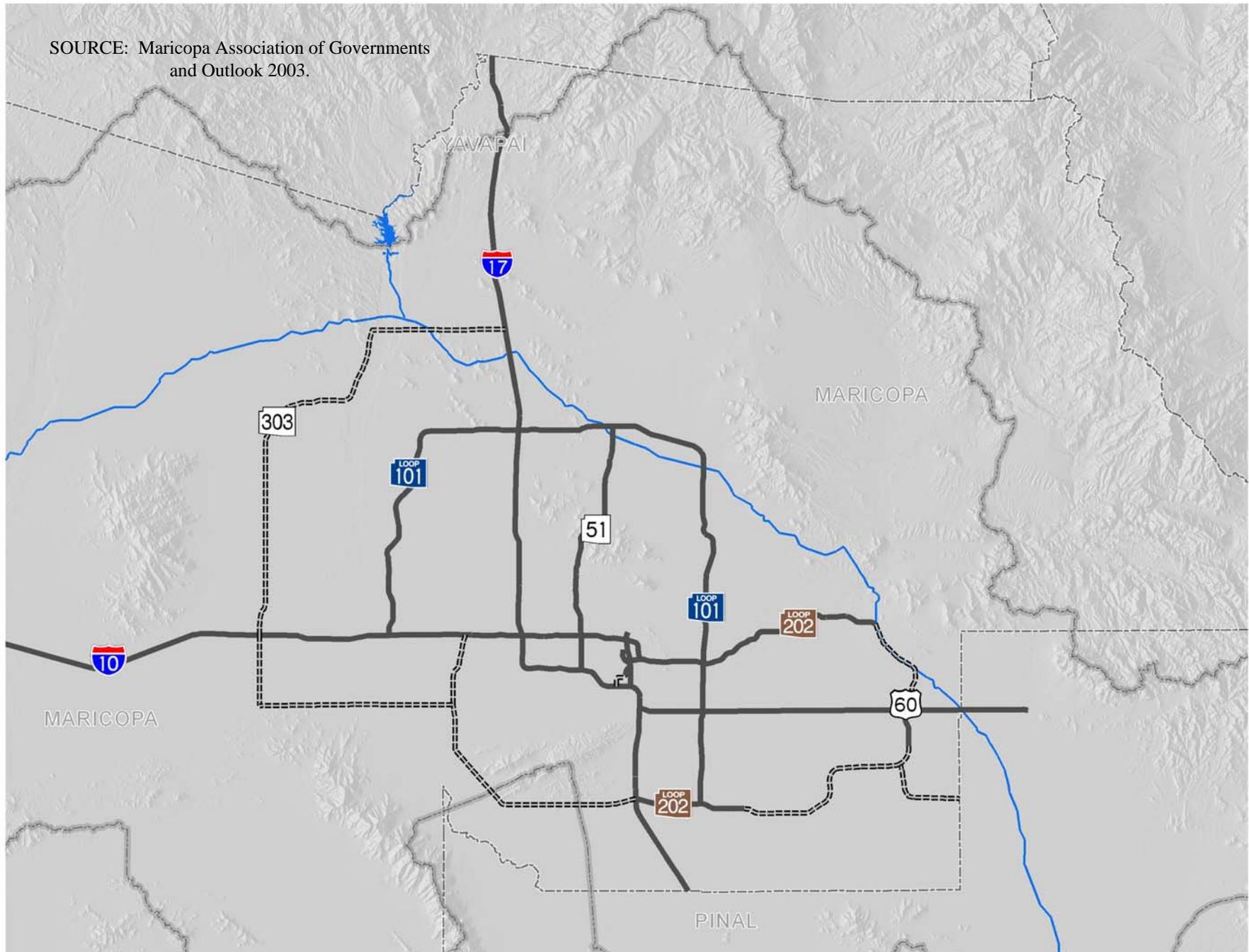
SOURCE: 2003 Interim Projections for the Maricopa and Pima Association of Governments disaggregated by water provider in Outlook 2003.

# Percentage of Growth Captured between 2005 and 2035 by Assured Water Supply Status



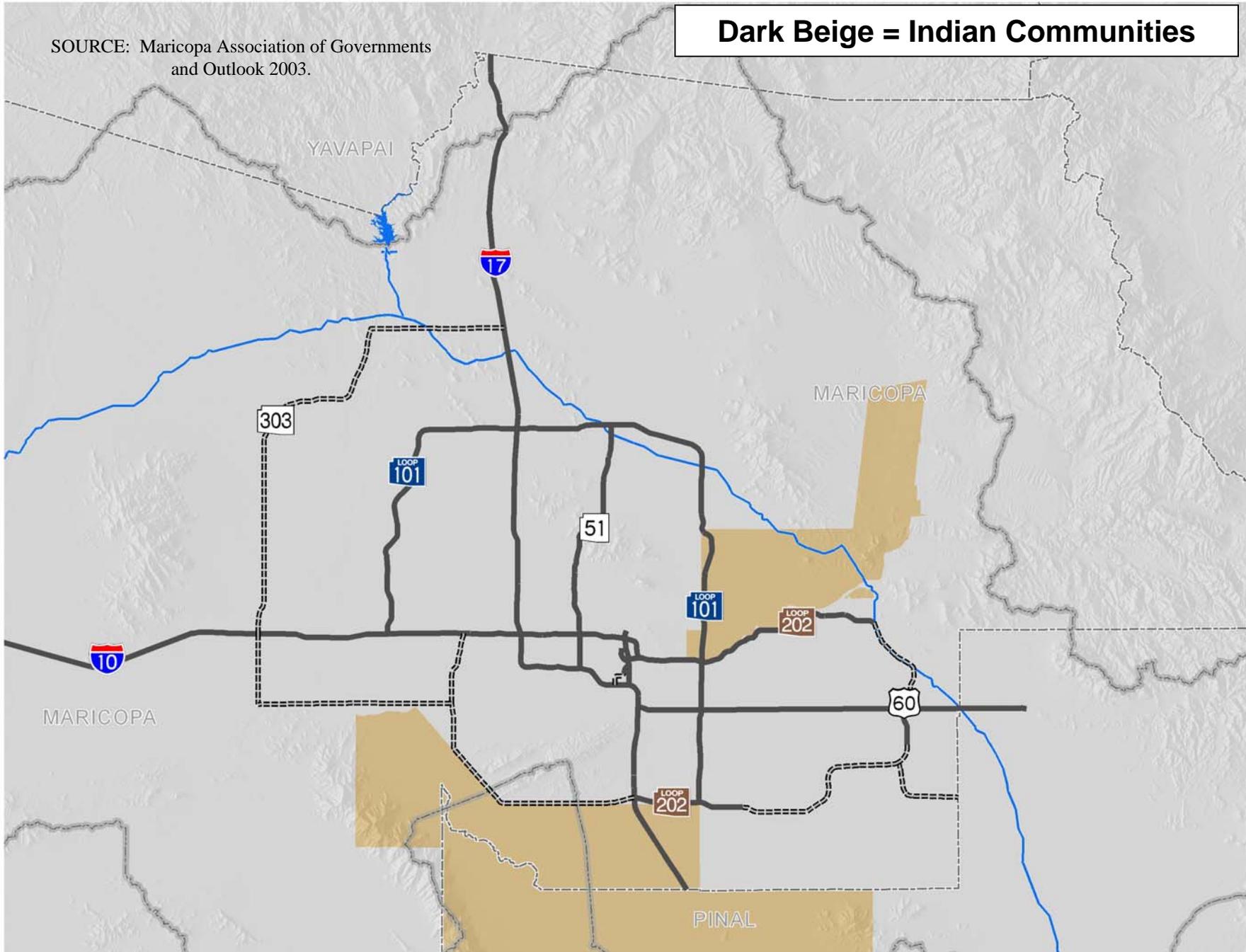
SOURCE: 2003 Interim Projections for the Maricopa and Pima Association of Governments disaggregated by water provider in Outlook 2003.

SOURCE: Maricopa Association of Governments  
and Outlook 2003.



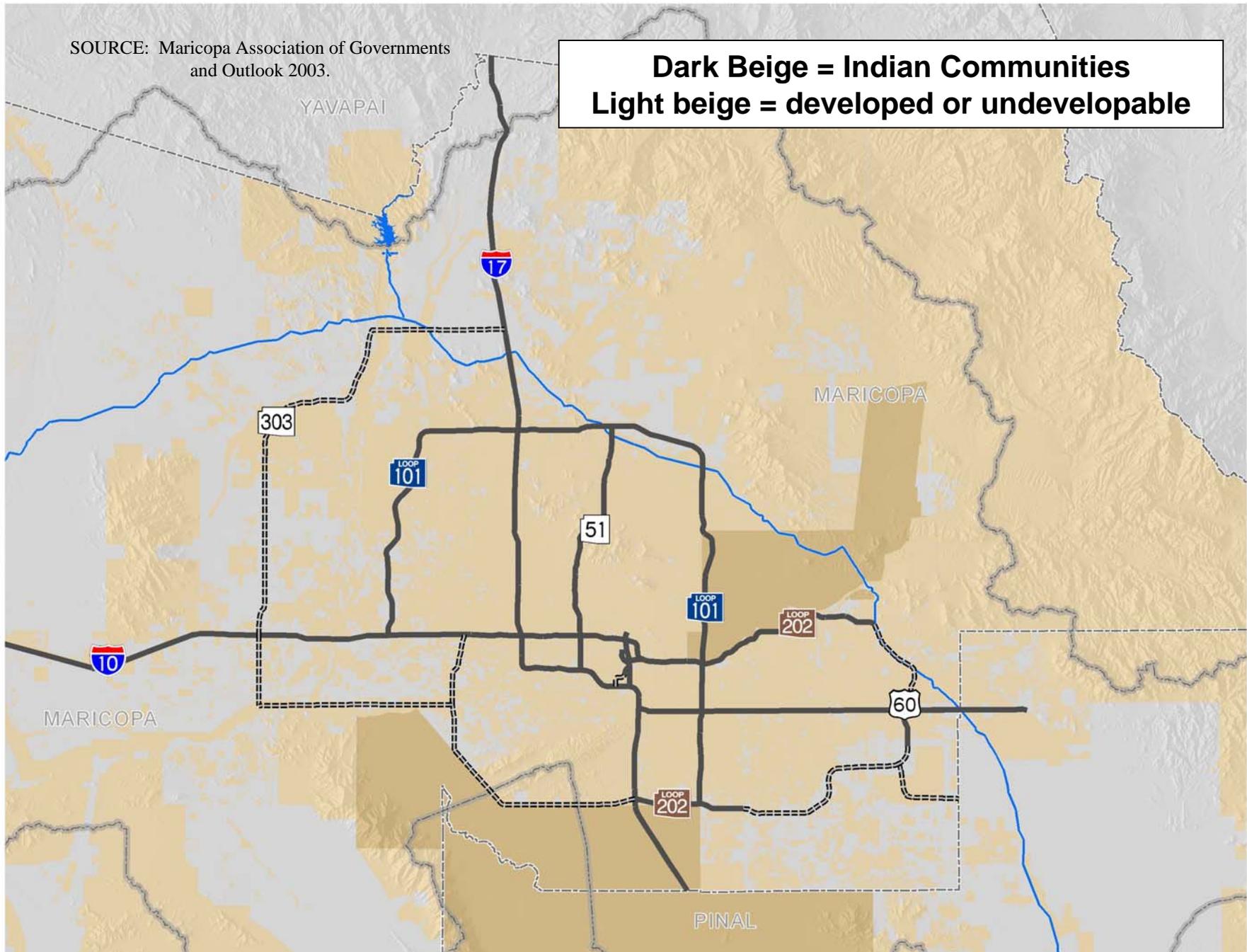
SOURCE: Maricopa Association of Governments  
and Outlook 2003.

**Dark Beige = Indian Communities**



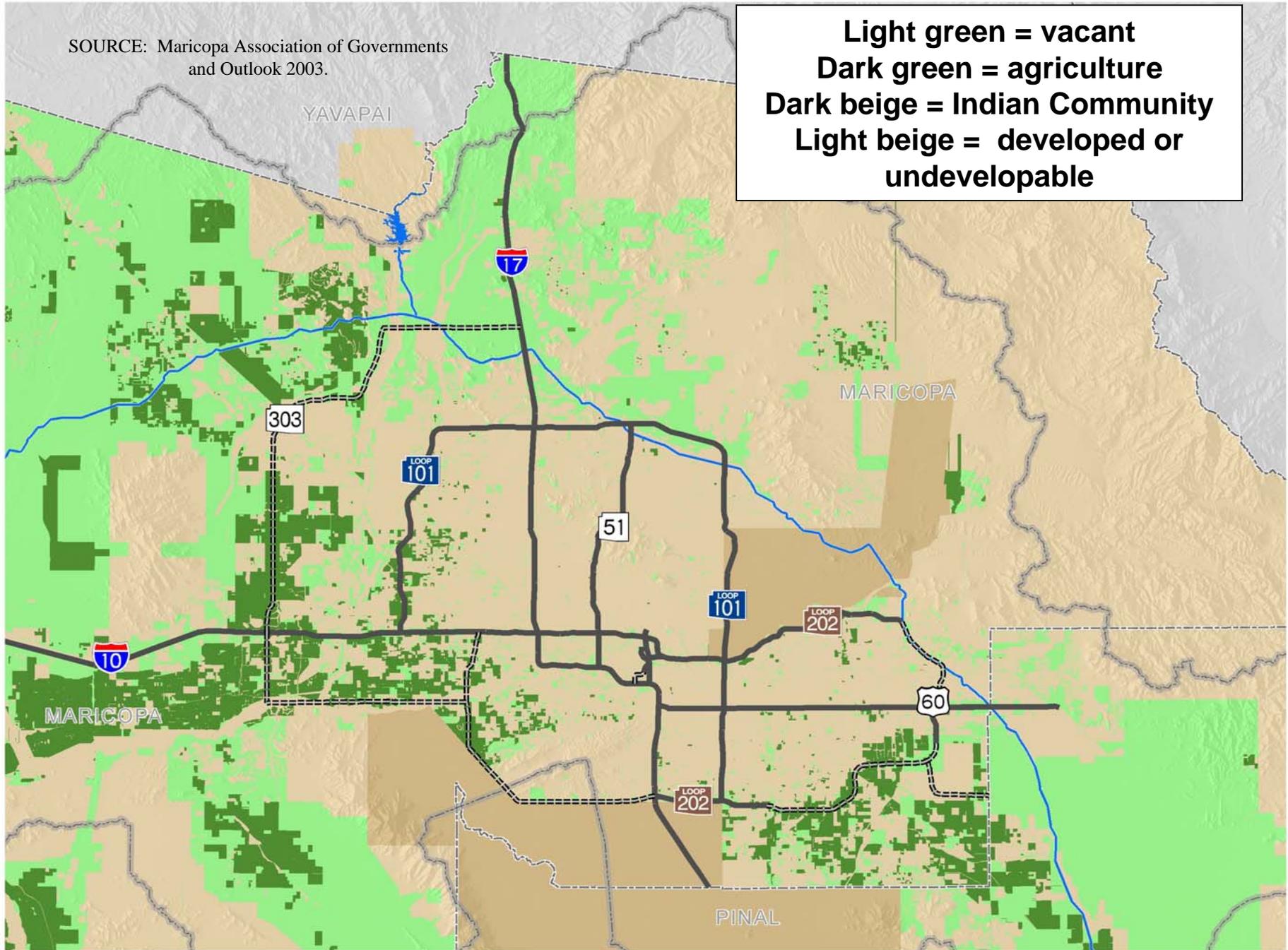
SOURCE: Maricopa Association of Governments  
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**Dark Beige = Indian Communities**  
**Light beige = developed or undevelopable**



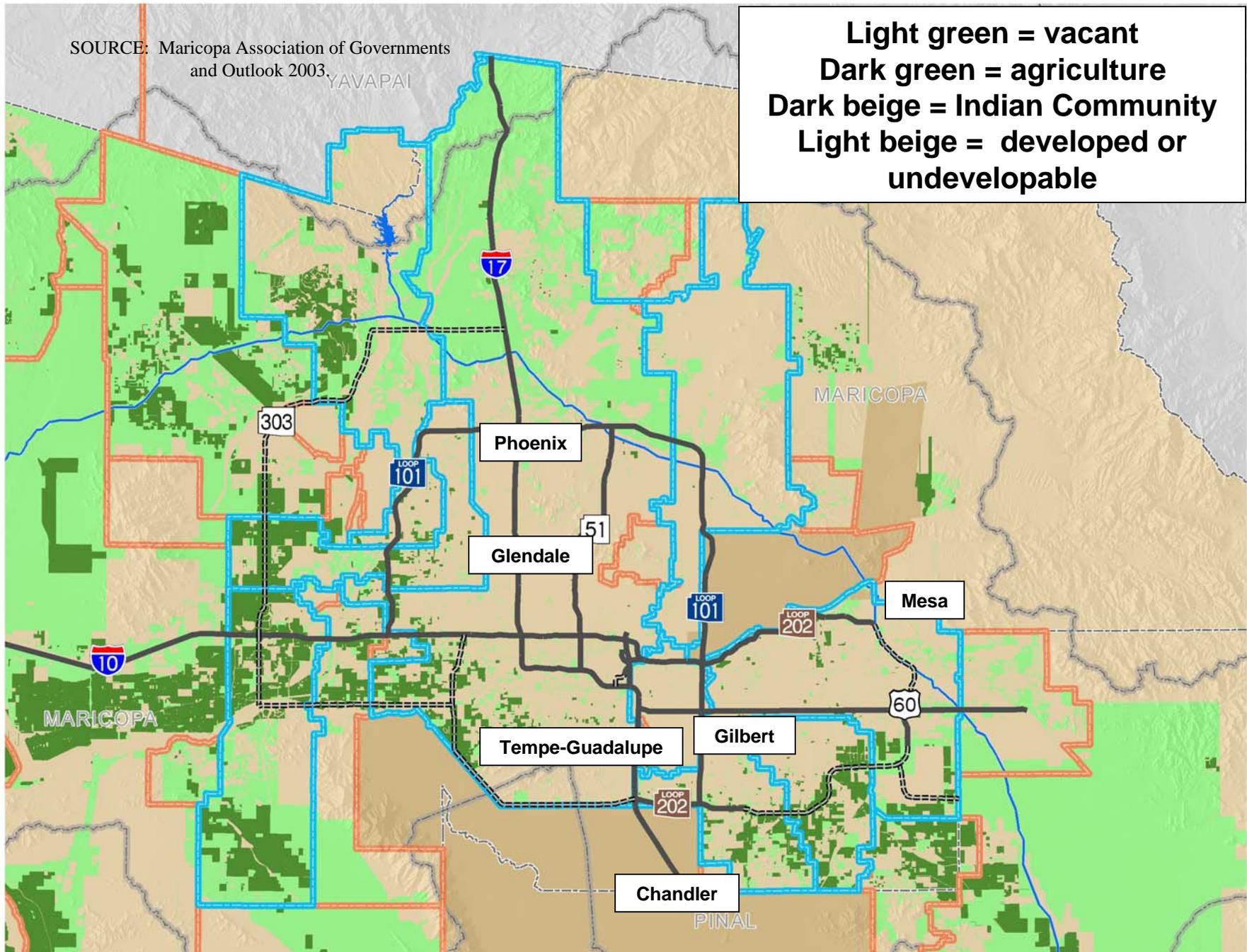
SOURCE: Maricopa Association of Governments  
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**Light green = vacant**  
**Dark green = agriculture**  
**Dark beige = Indian Community**  
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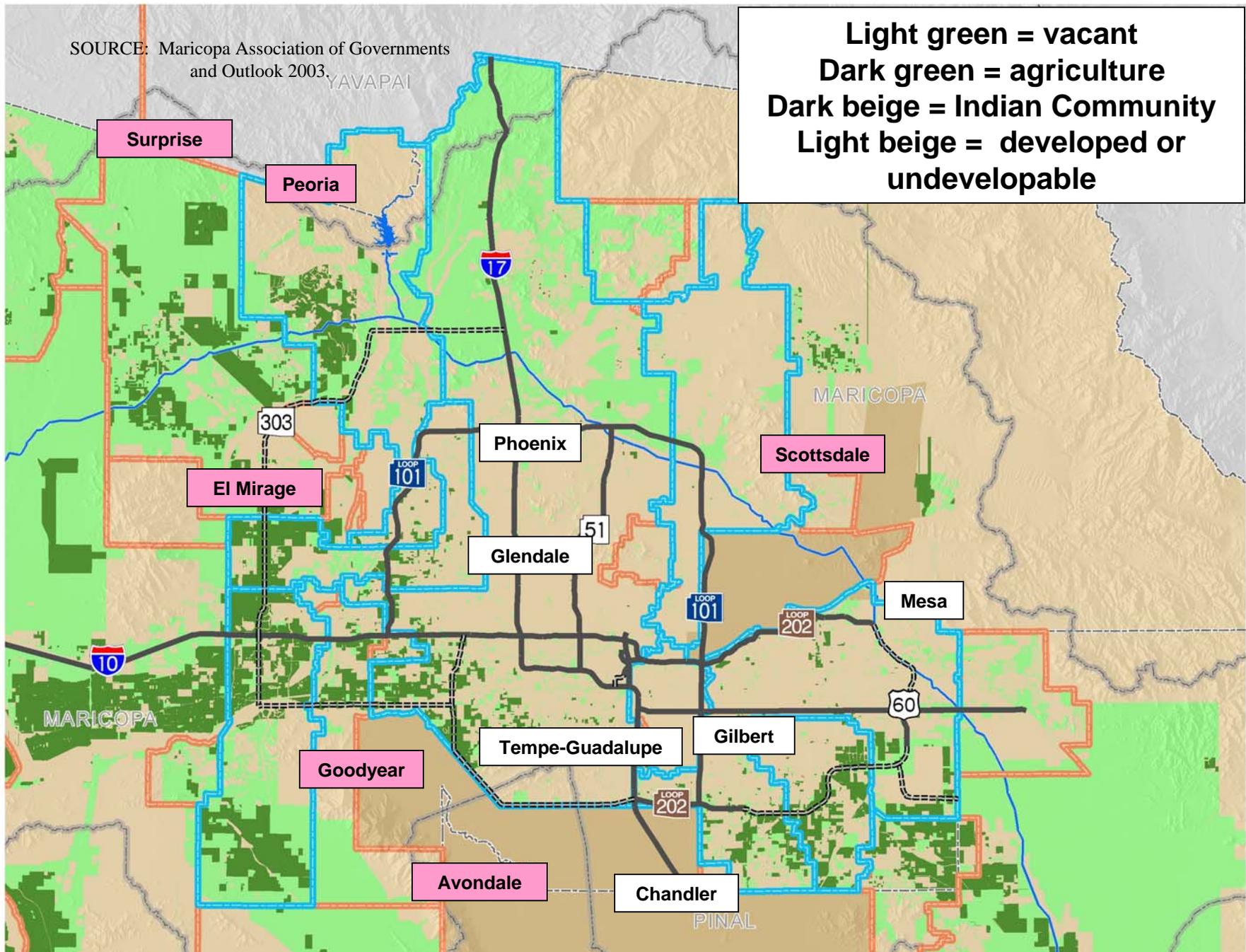
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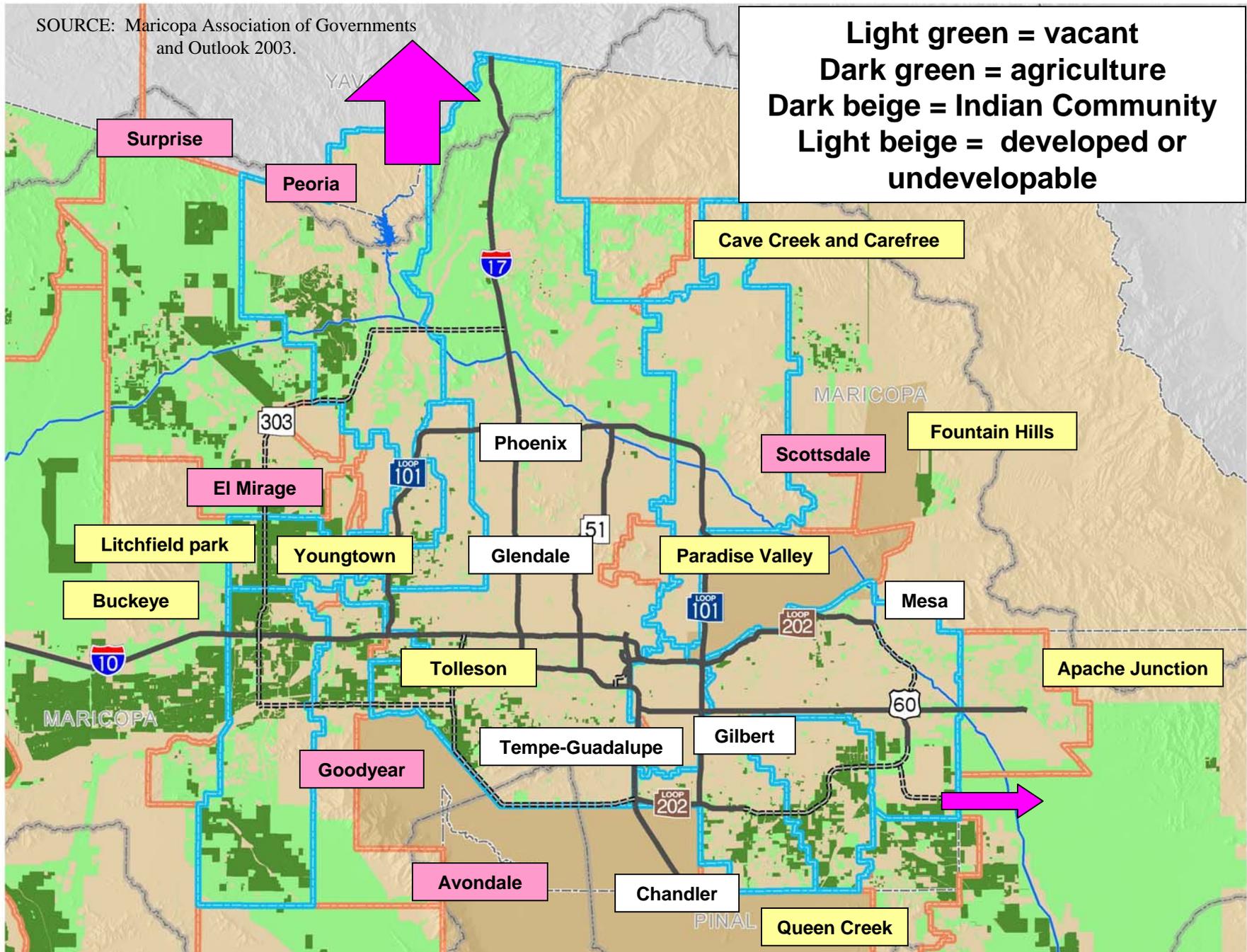
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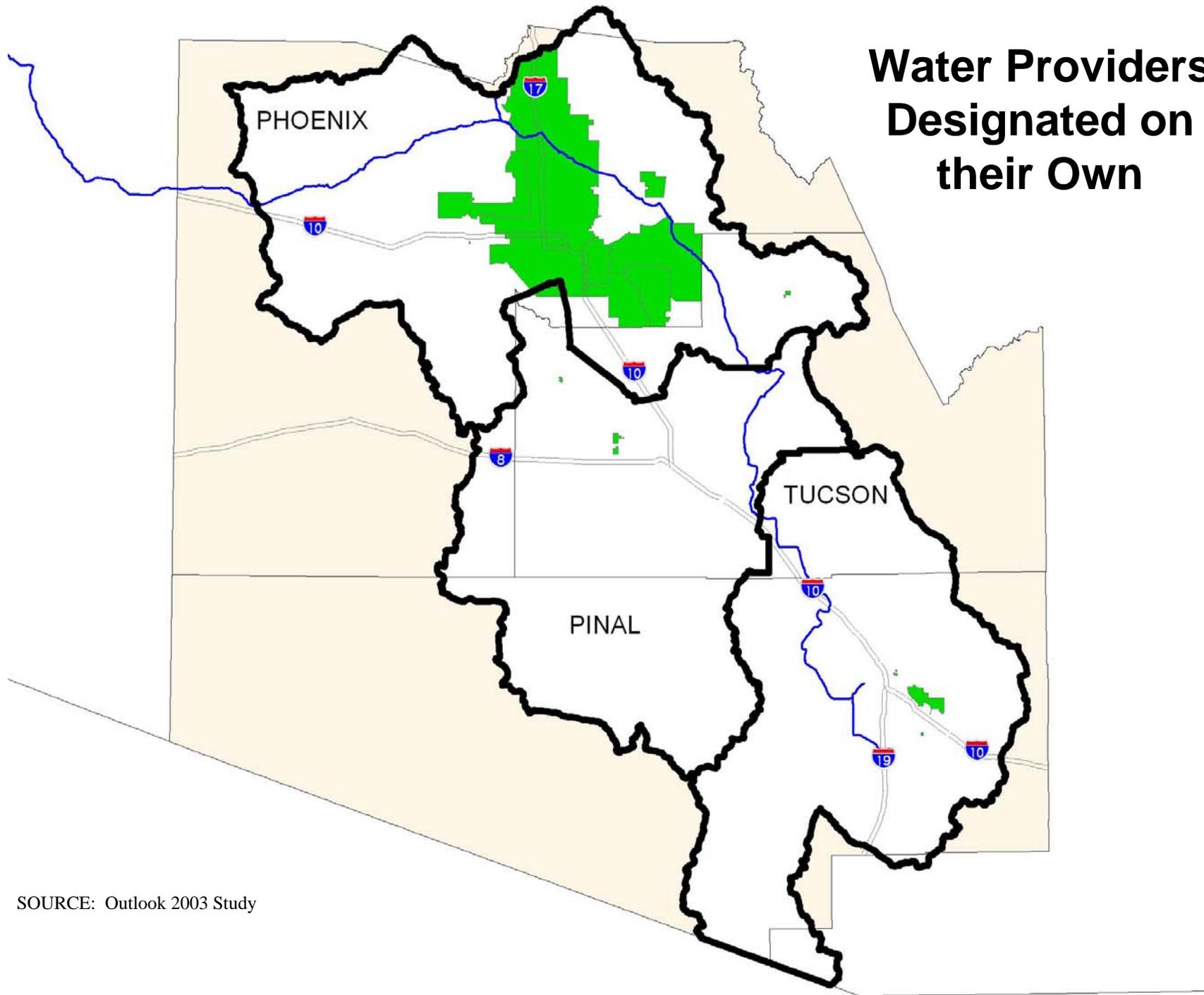
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# Major Assumptions

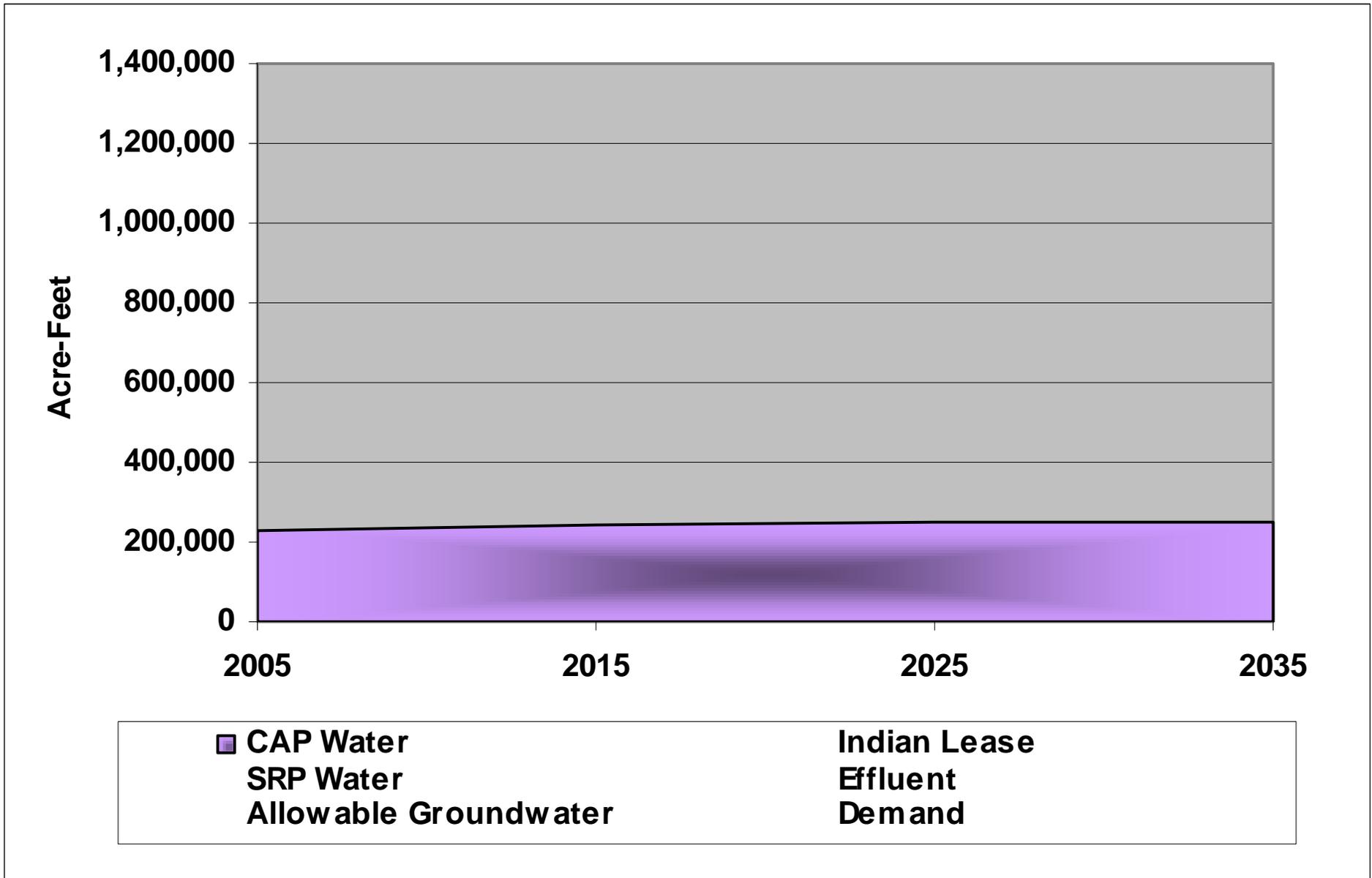
- Normal supply conditions
- Outlook 2003 demand projections
- Effluent reuse 30% of demand
- Groundwater allowance based on assured water supply volumes and 4.3% incidental recharge factor
- Assured water supply volumes for SRP water
- GRIC settlement volumes for GRIC lease and unallocated CAP M&I water

# Water Providers Designated on their Own

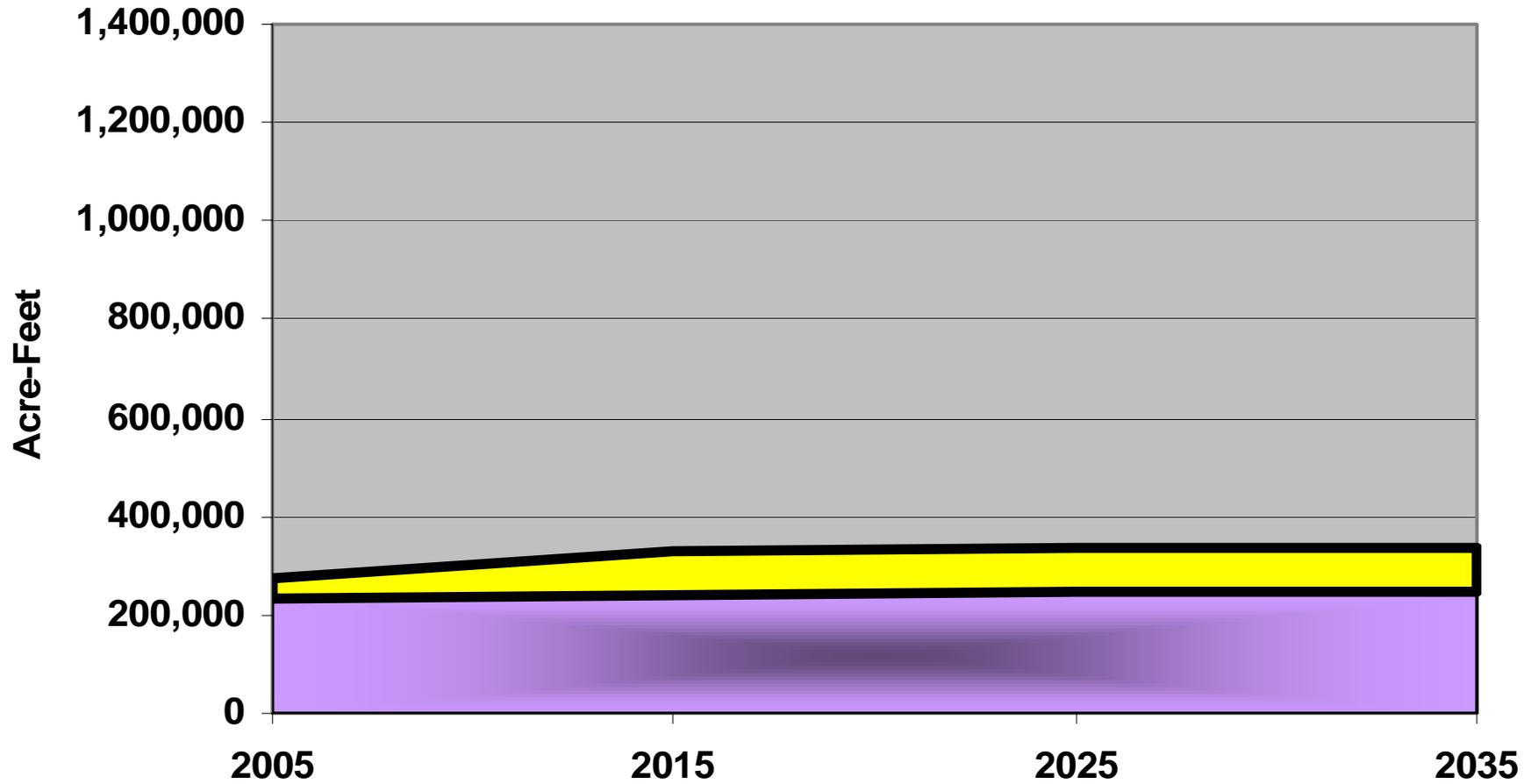


SOURCE: Outlook 2003 Study

# Supply and Demand Comparison – Water Providers Designated on their Own



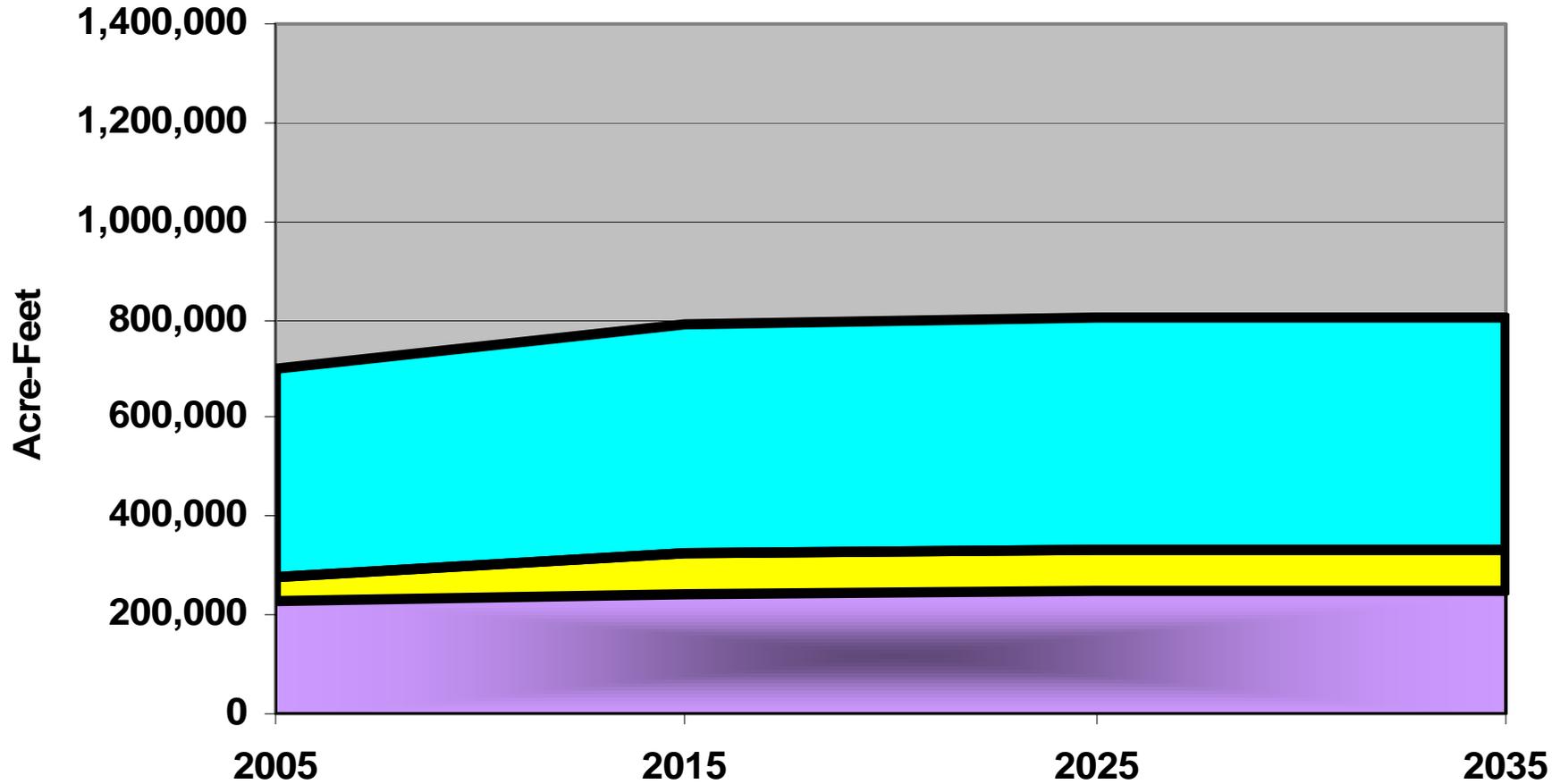
# Supply and Demand Comparison – Water Providers Designated on their Own



■ CAP Water  
■ SRP Water  
■ Allowable Groundwater

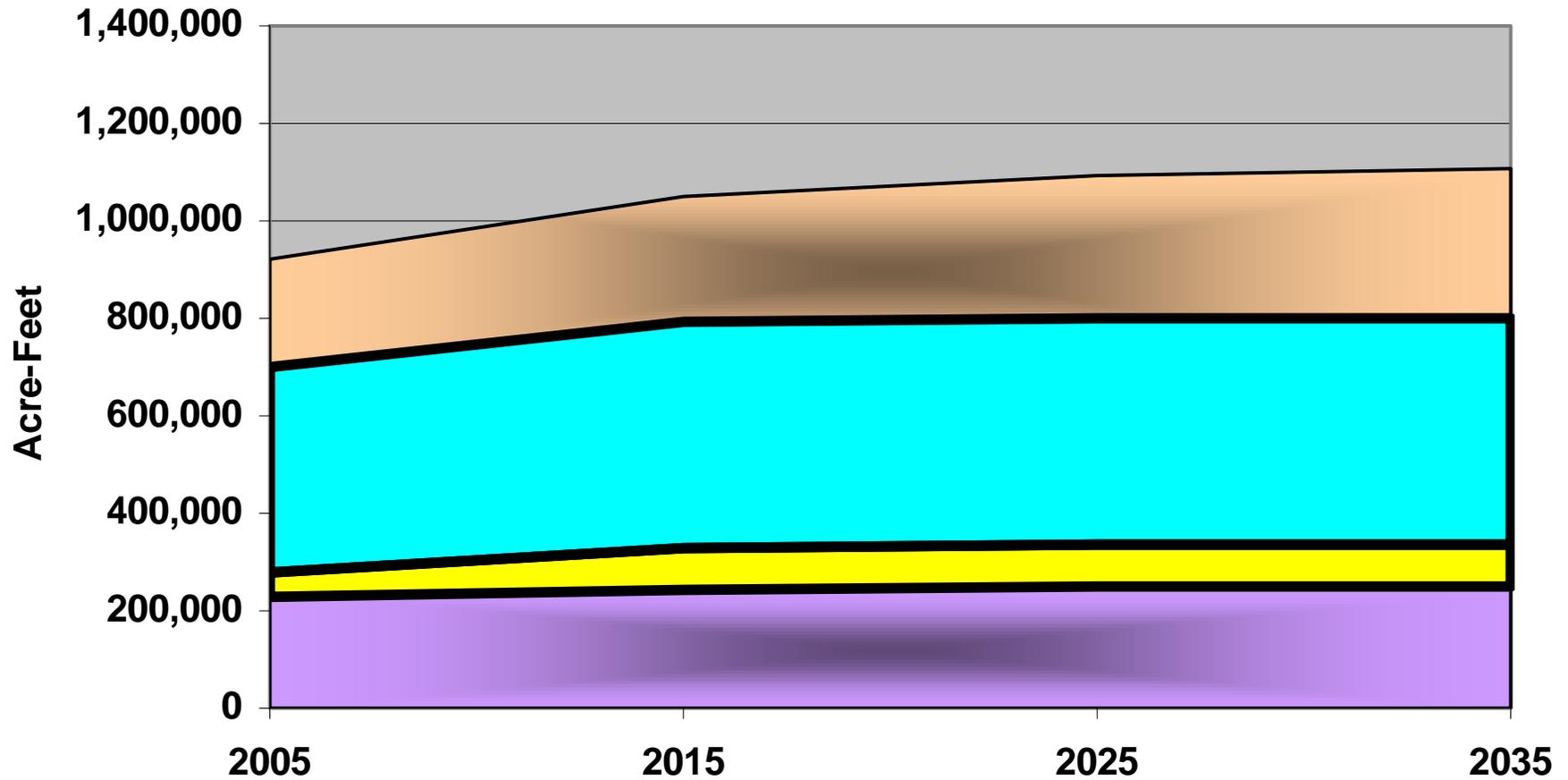
■ Indian Lease  
■ Effluent  
■ Demand

# Supply and Demand Comparison – Water Providers Designated on their Own



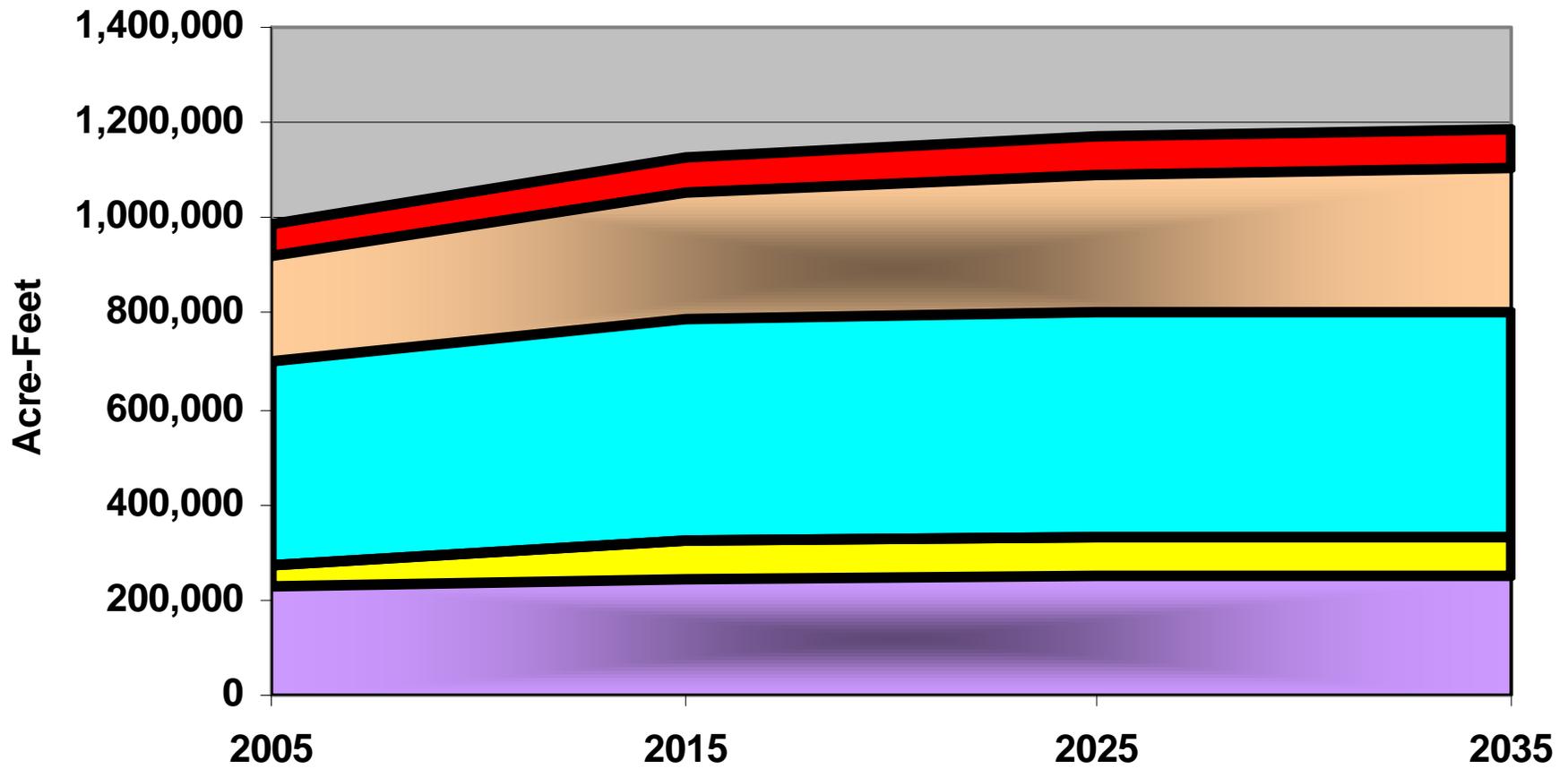
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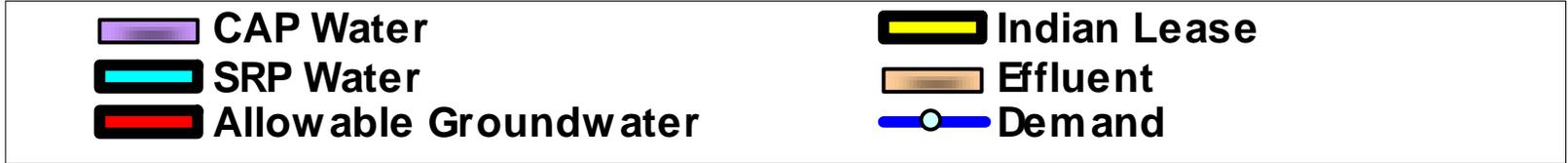
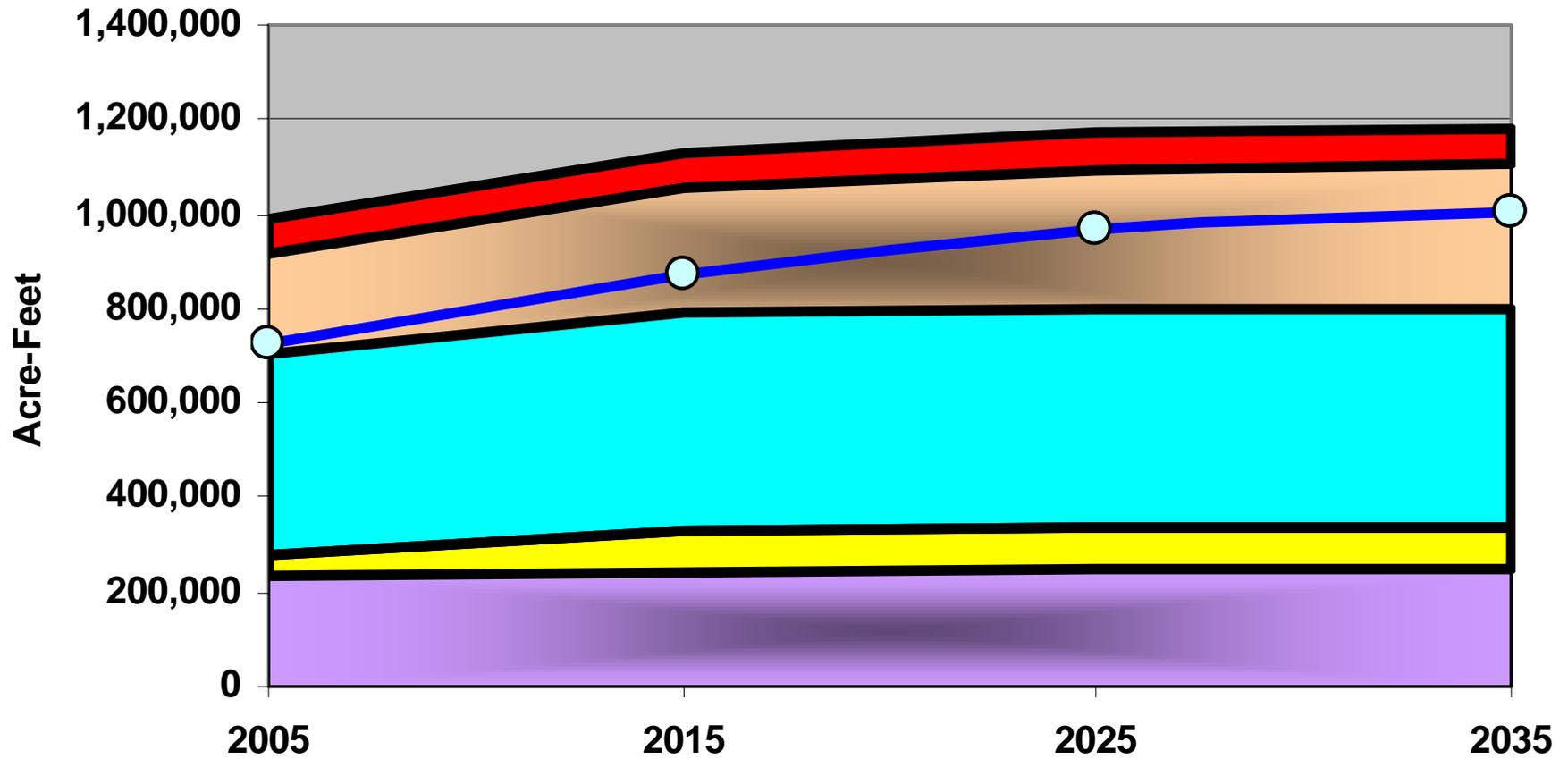


- CAP Water
- SRP Water Allowable Groundwater
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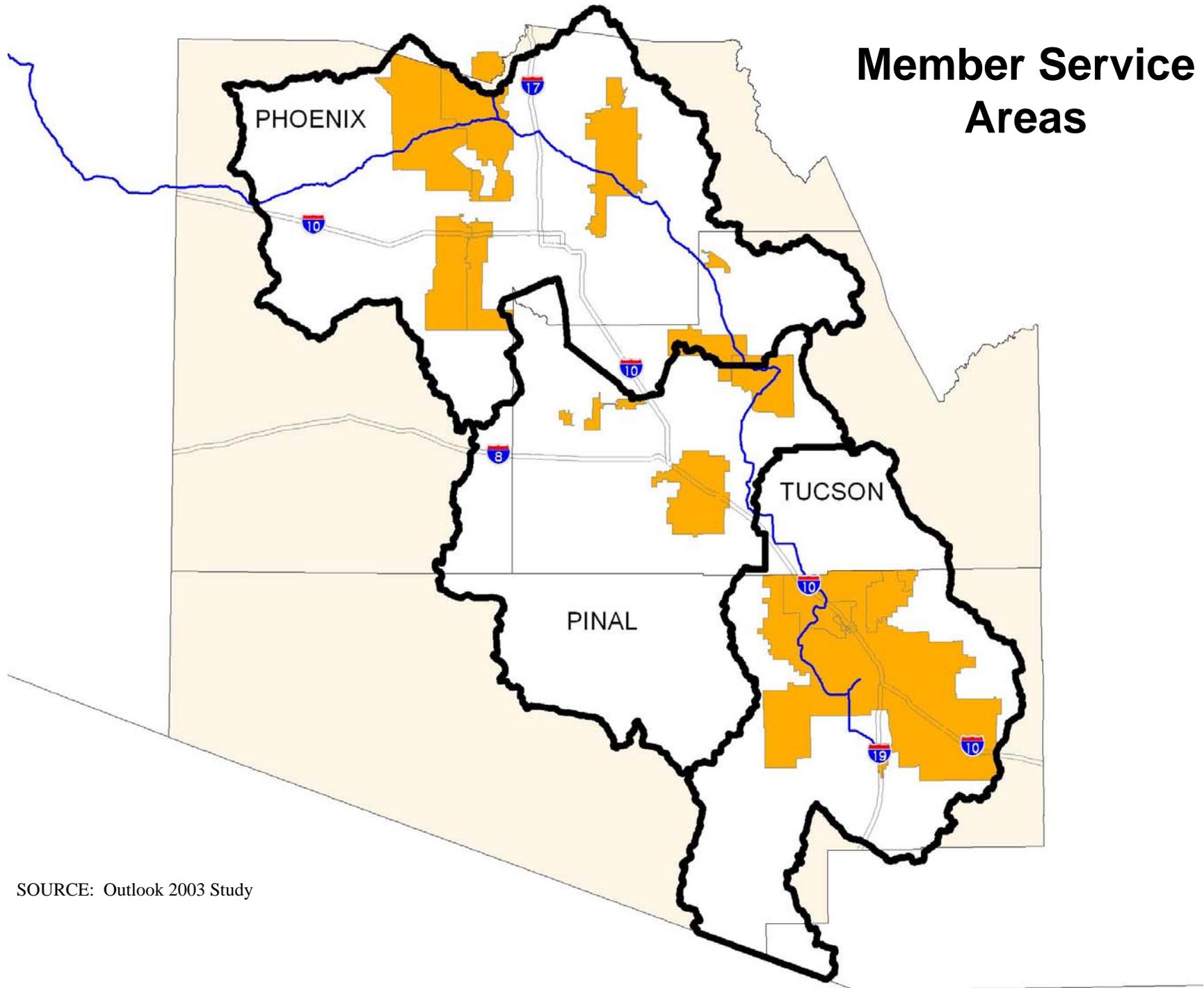
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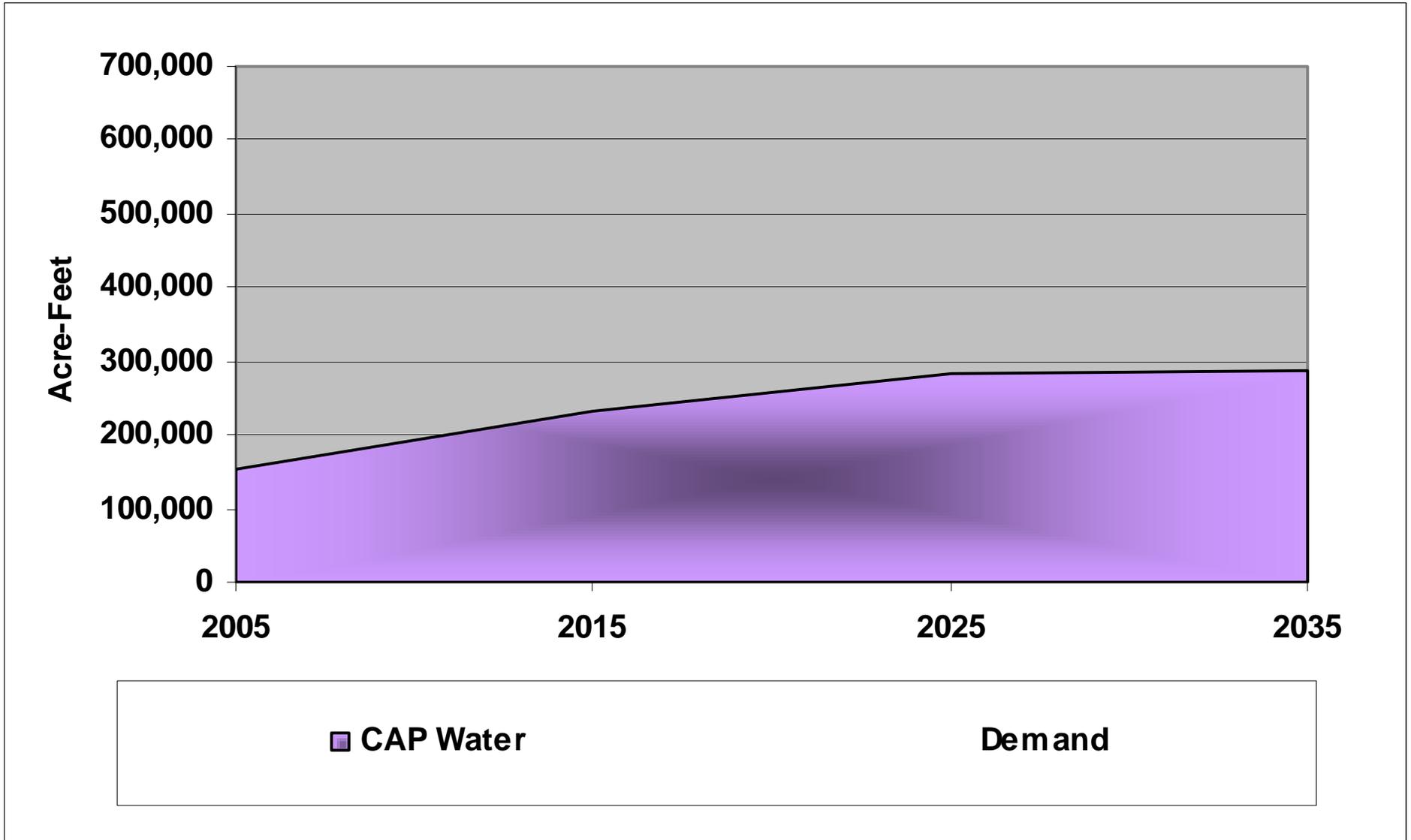


# Member Service Areas

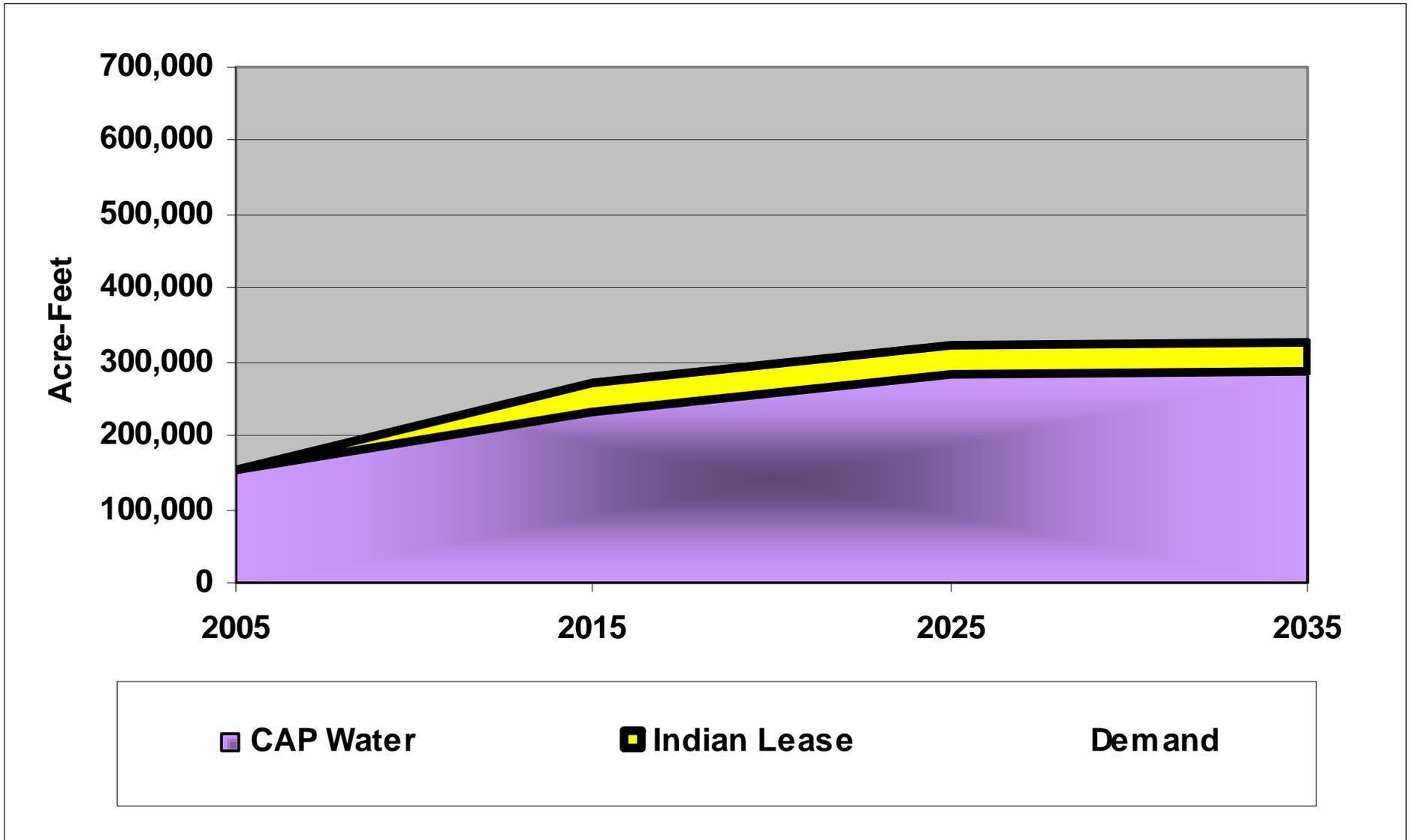


SOURCE: Outlook 2003 Study

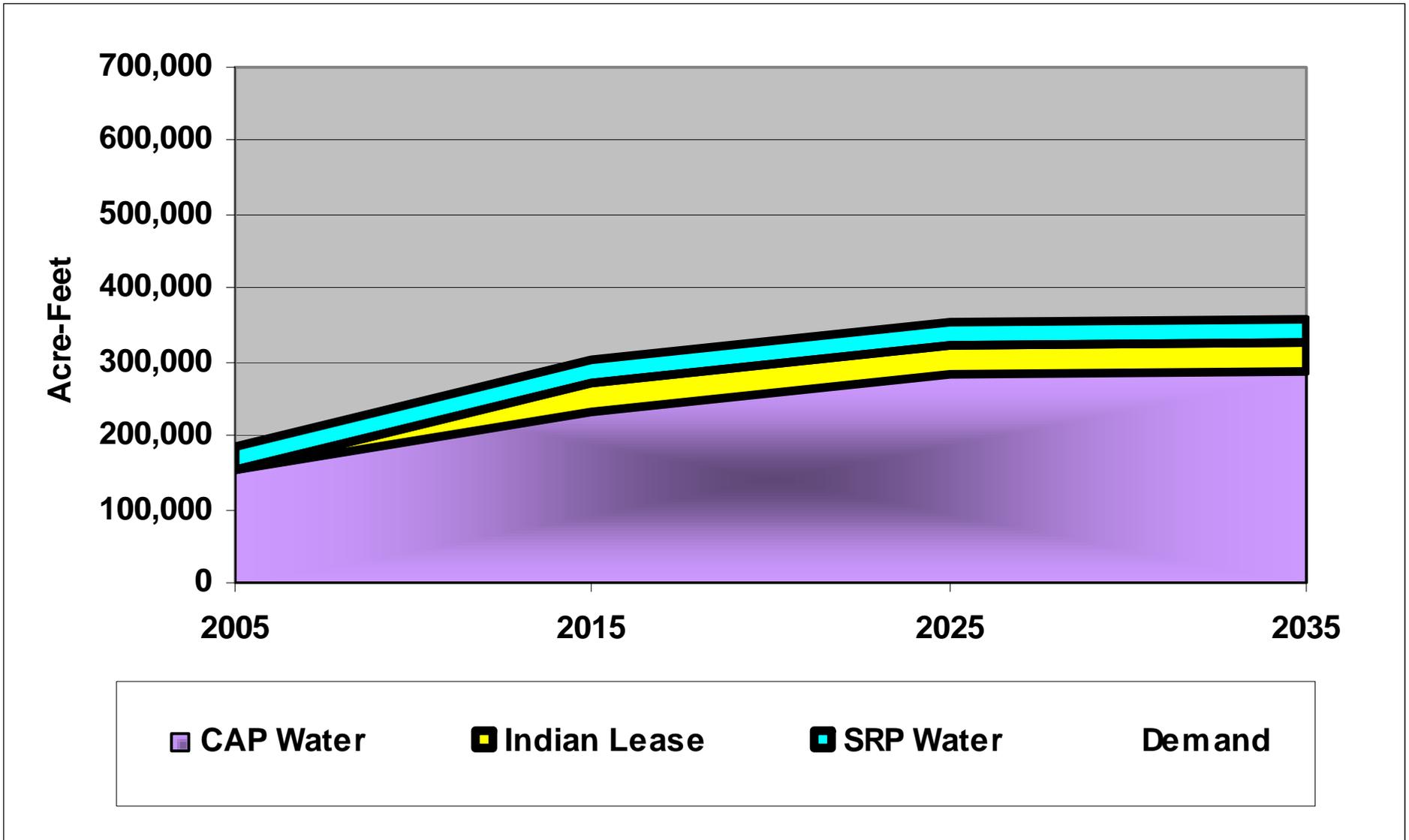
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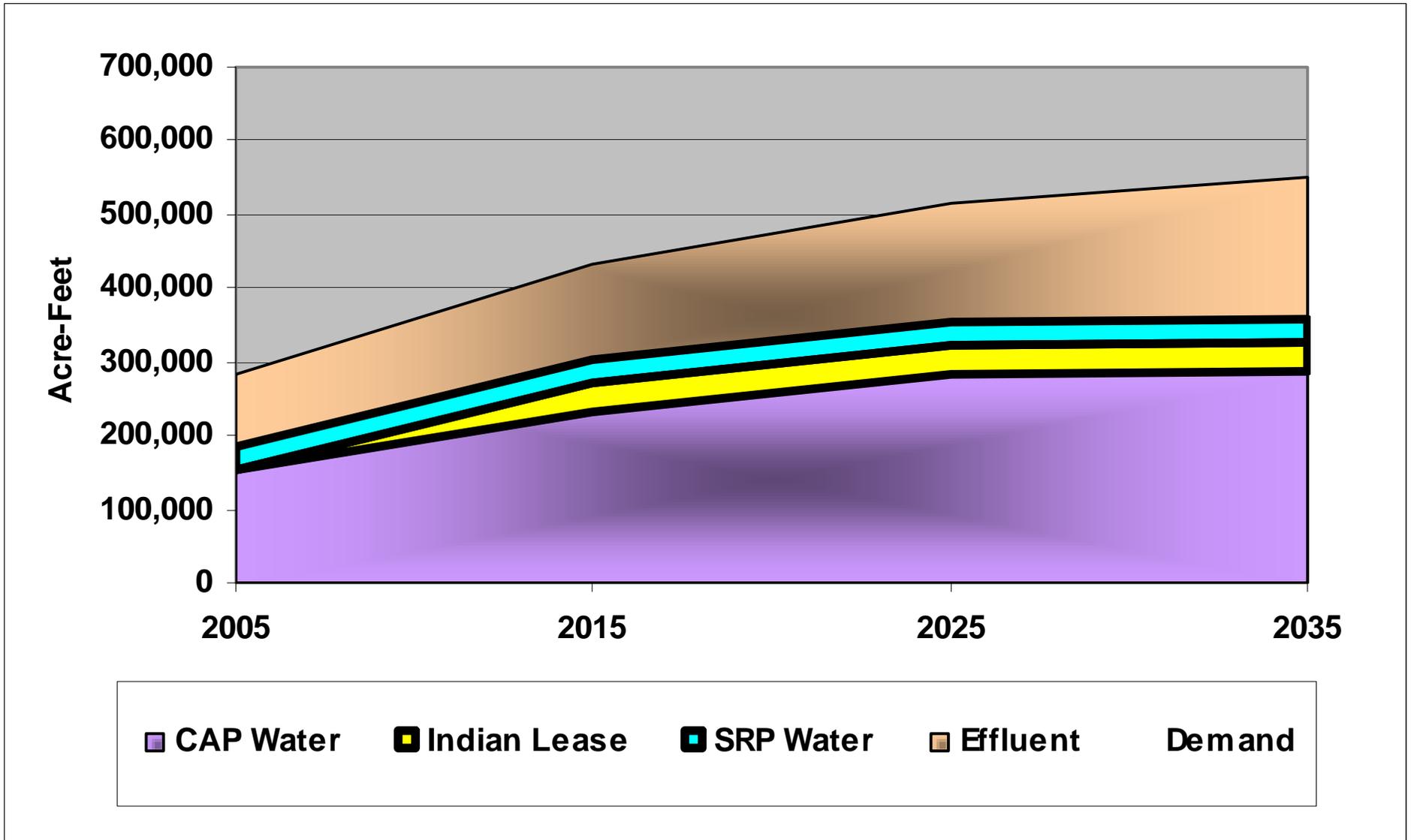
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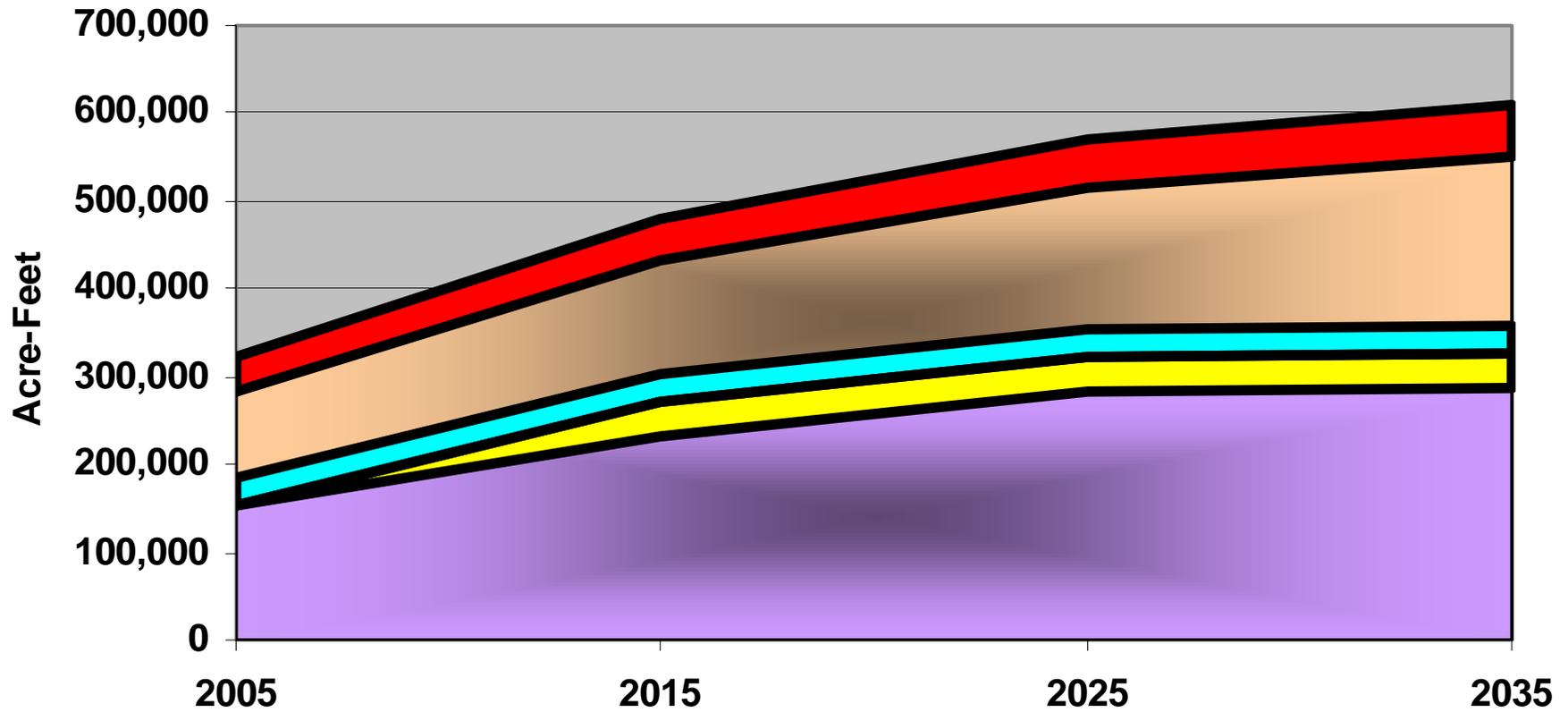
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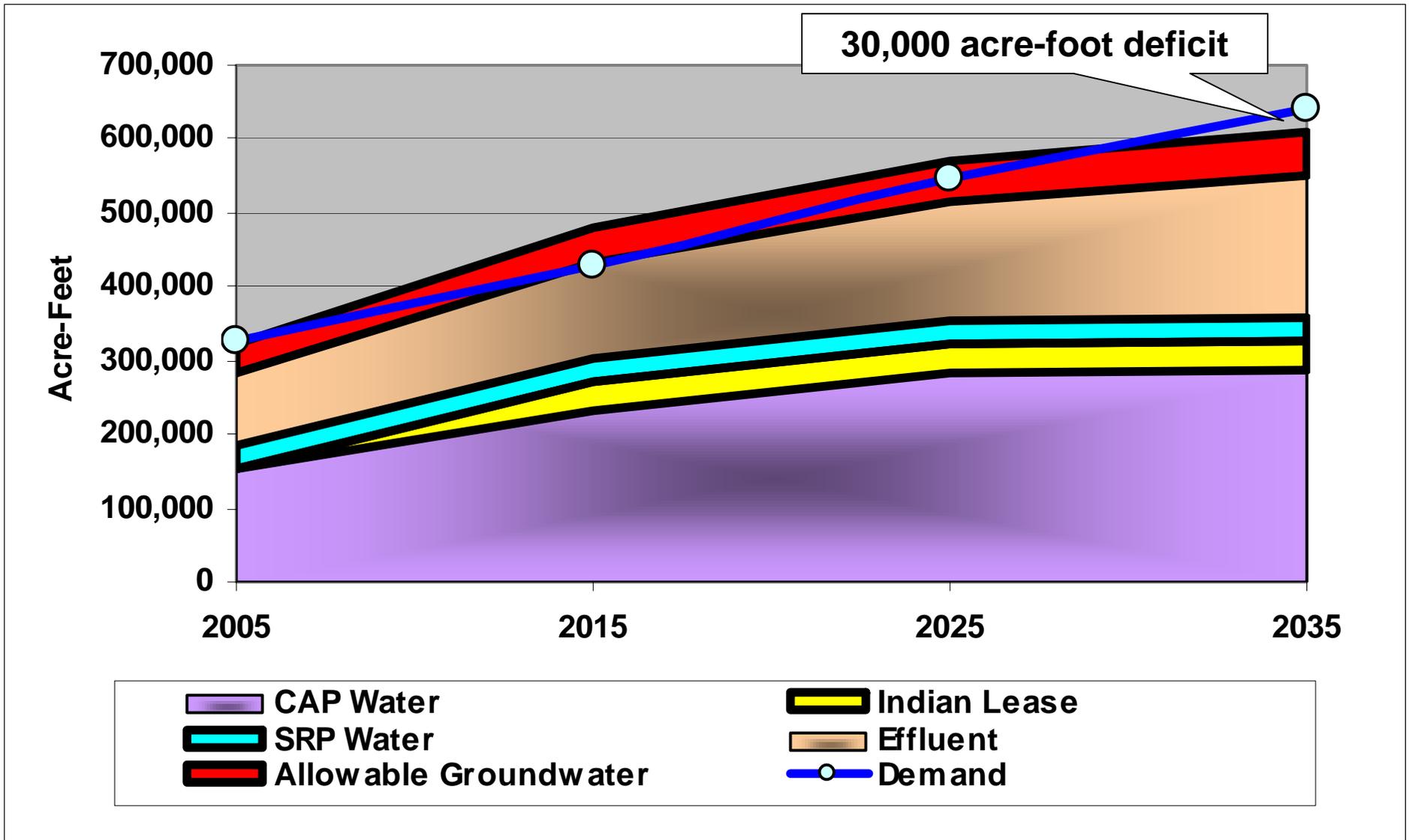


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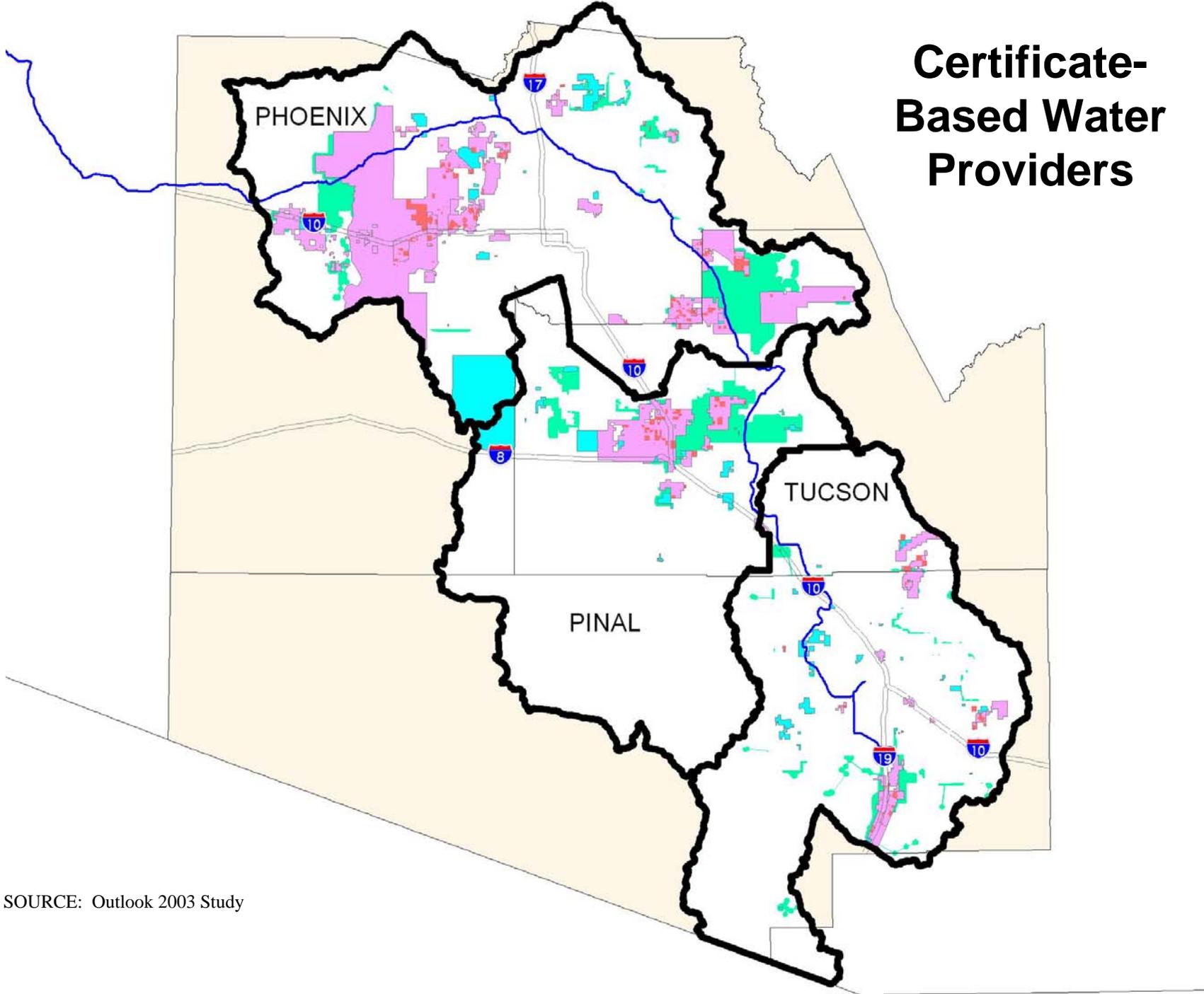


- CAP Water
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# Supply and Demand Comparison – Member Service Areas



# Certificate-Based Water Providers

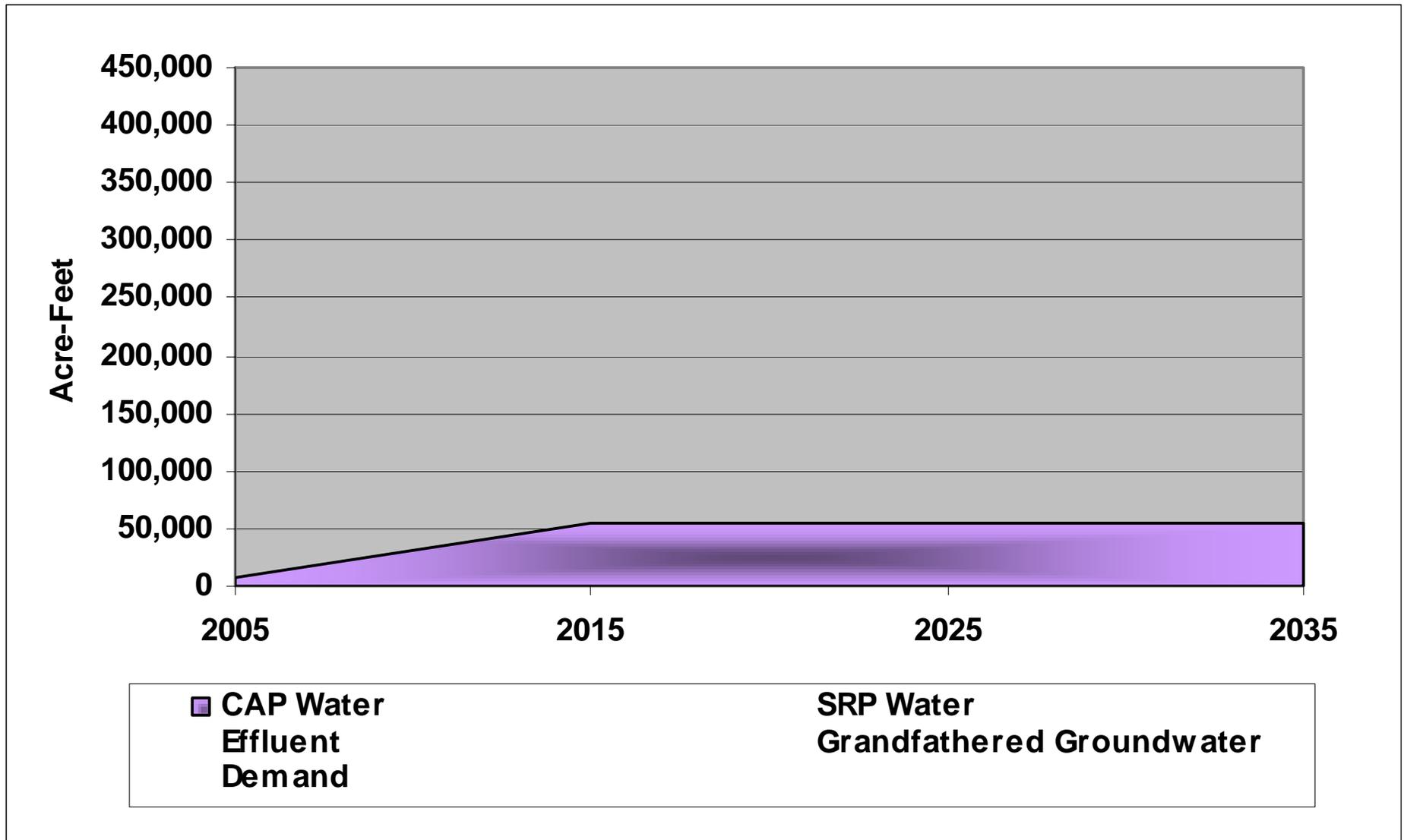


SOURCE: Outlook 2003 Study

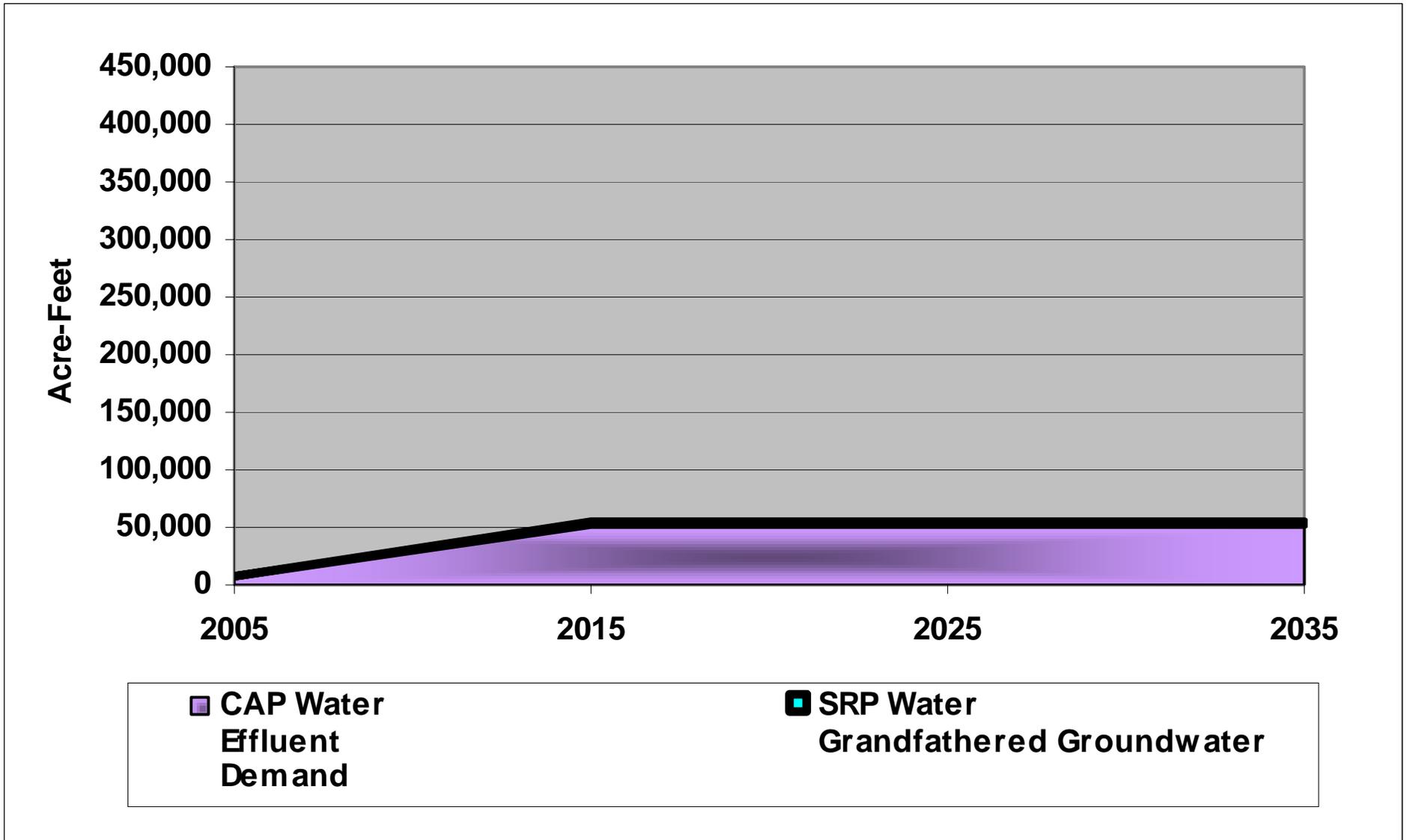
# Special Assumptions

- All the other assumptions hold
- Grandfathered groundwater are the 2000 demands held constant
- Non-residential demand and lost and unaccounted for water is approximately 25% of total deliveries
- All CAP water subcontracts assumed to be in use today by 2015
- Forgot the CAGR's water – so add another 8,000 acre-feet of CAP water in your brain

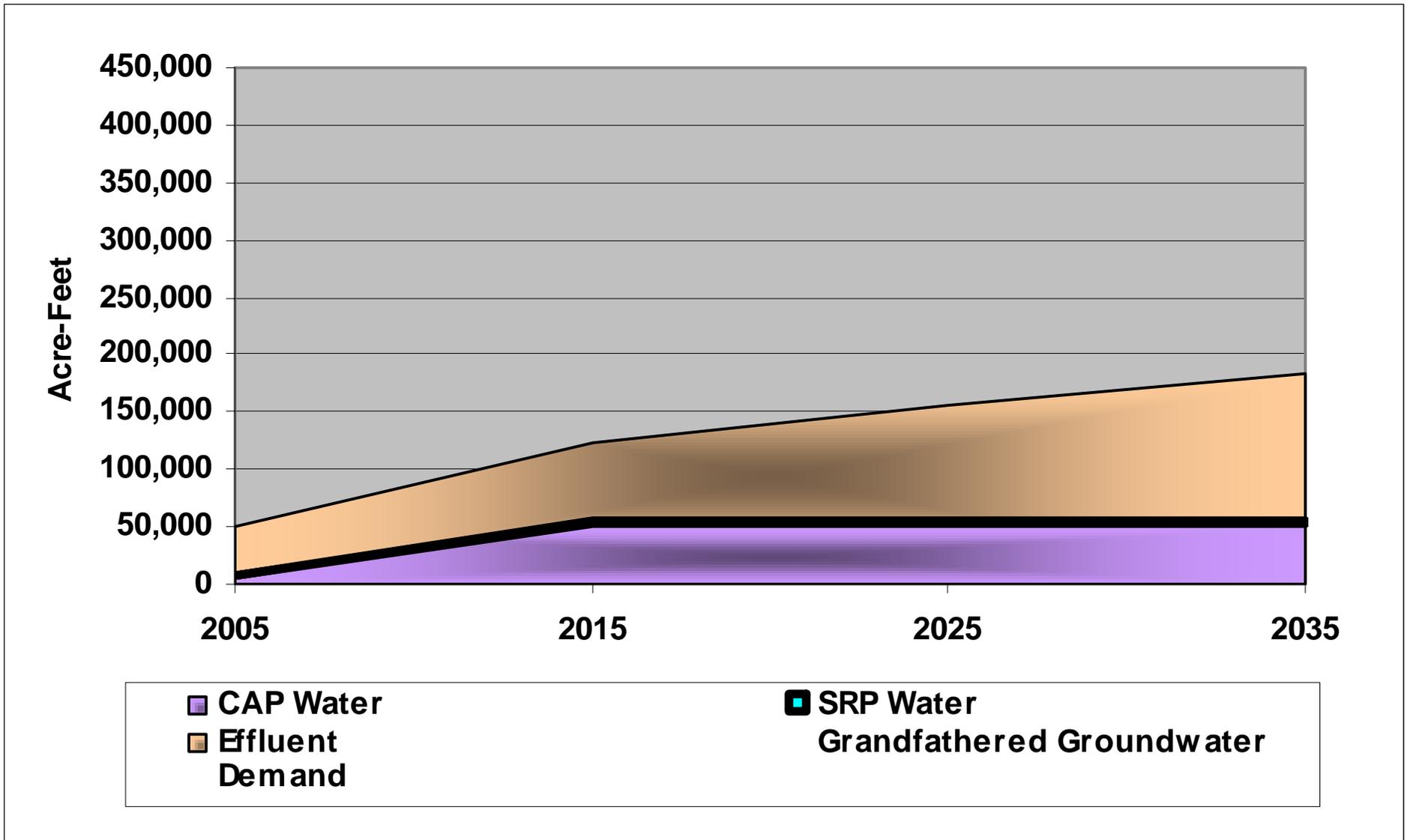
# Supply and Demand Comparison – Certificate-Based Providers



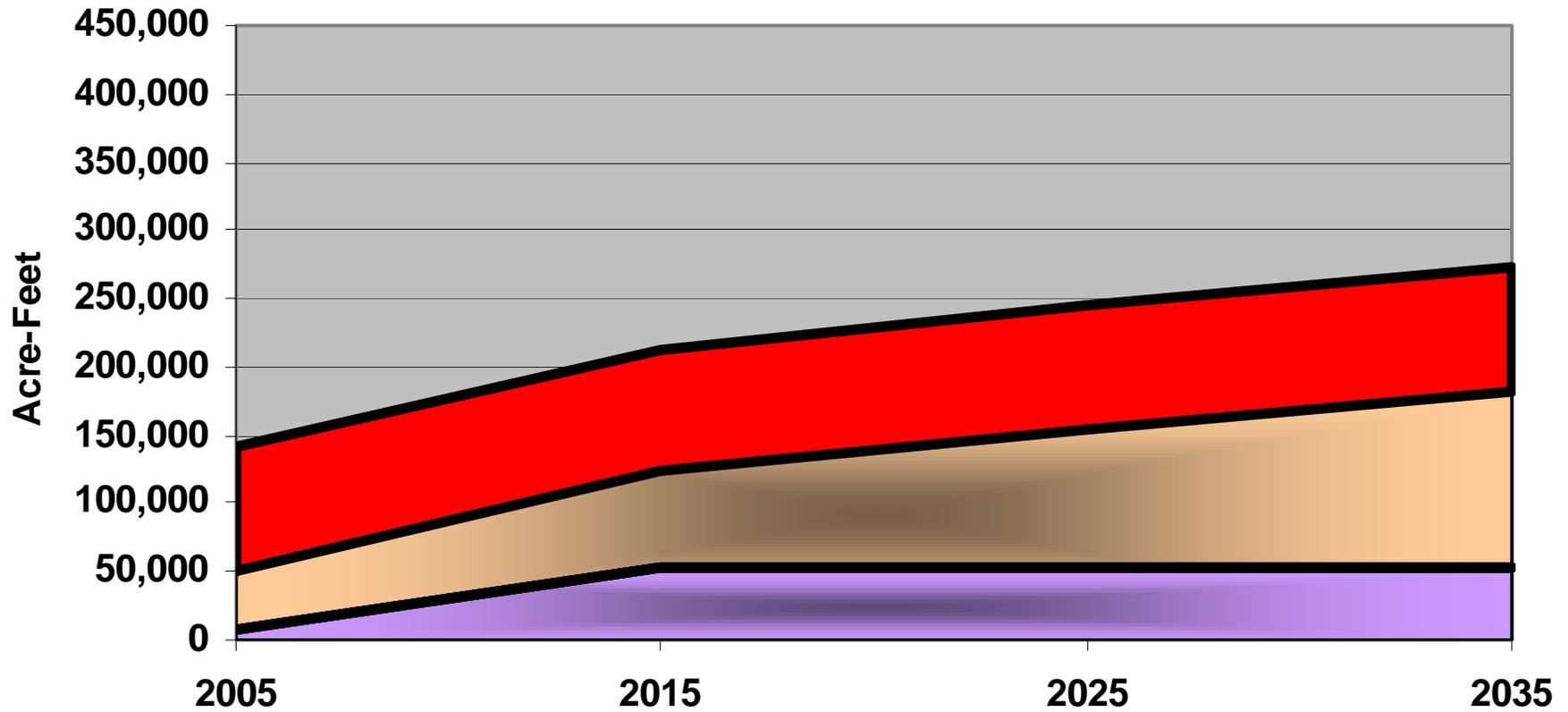
# Supply and Demand Comparison – Certificate-Based Providers



# Supply and Demand Comparison – Certificate-Based Providers



# Supply and Demand Comparison – Certificate-Based Providers



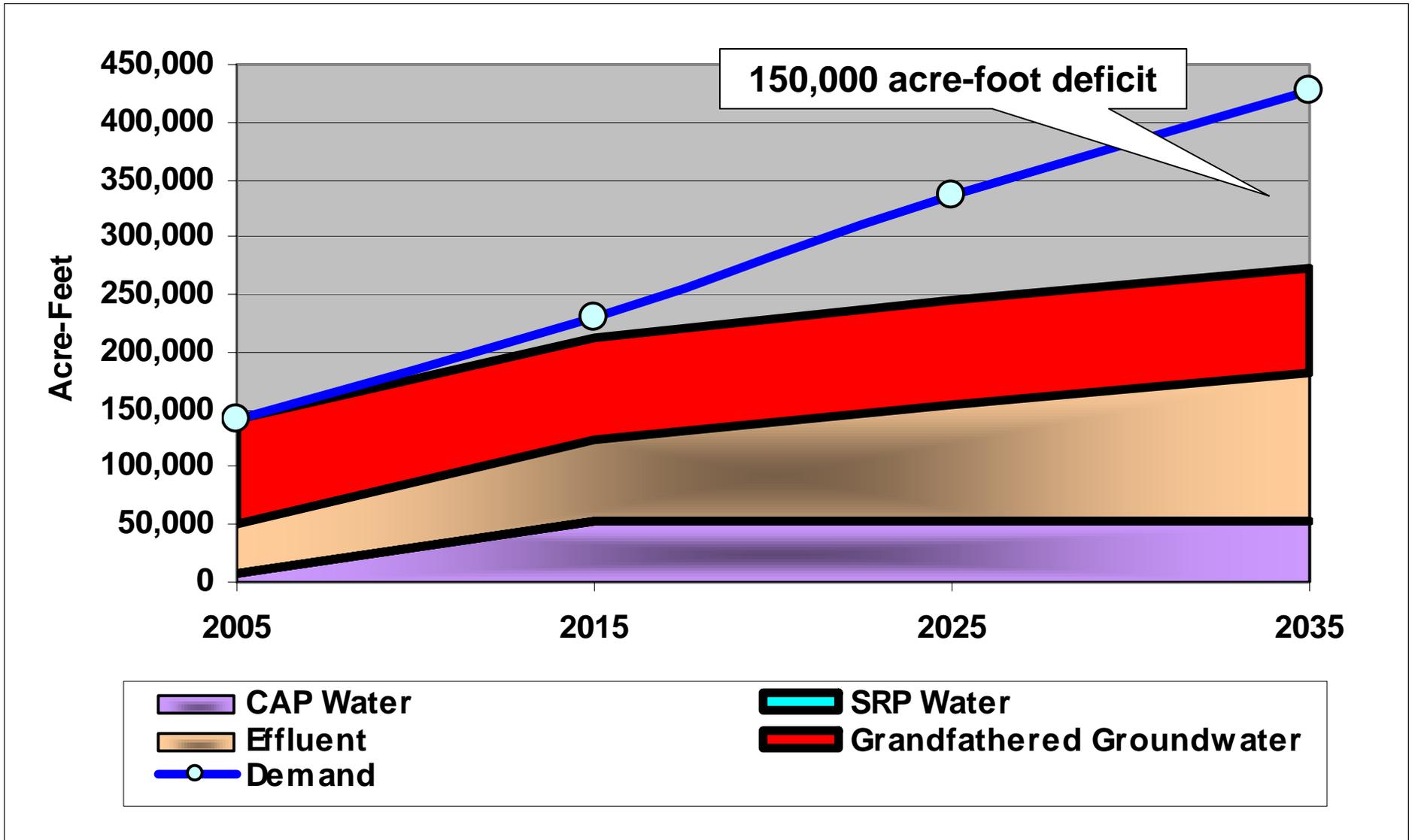
■ CAP Water

■ Effluent Demand

■ SRP Water

■ Grandfathered Groundwater

# Supply and Demand Comparison – Certificate-Based Providers



# Observations

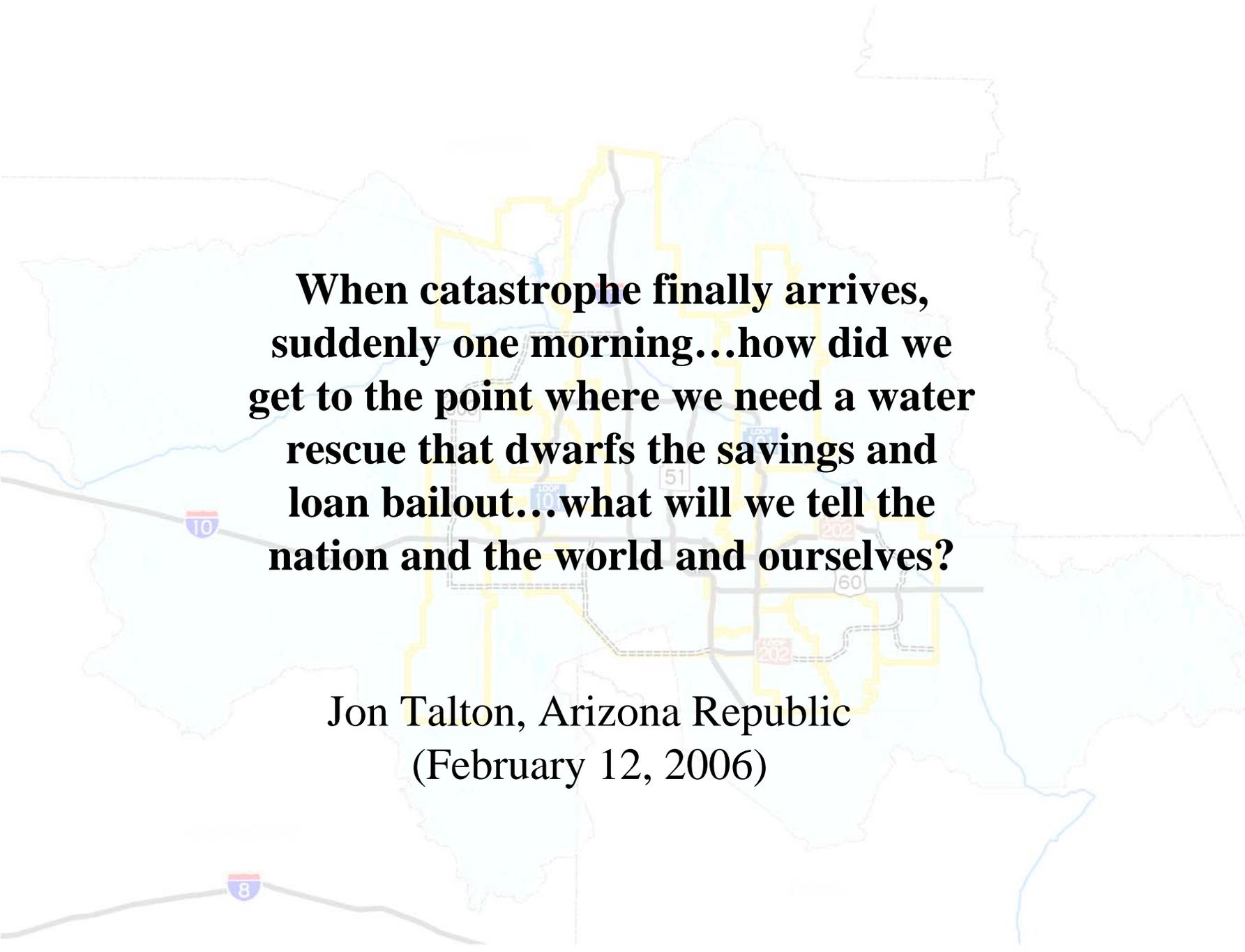
- **Between 6 to 8 million acre-feet of water statewide**
  - Not necessarily where you want it
  - Not easy task to get it where you want
- **Statewide supplies can fuel nearly 3 to 4 times the people here today**
  - 6 million people today
  - 16 and 22 million people potential
- **Growth potential of water providers designated on their own is limited**

# Observations

- **Water providers that are member service areas are better off than water providers serving members lands**
- **There is enough water at the Statewide level for the “haves” and the “have nots”**
- **Economic development of the State is interdependent**
  - **Growth wave is shifting**
  - **Shift in growth wave is unstoppable**
  - **Maturing areas are dependent on the continued economic growth of the state even if it is other areas**

# Observations

- **Creating a water crisis to control growth is bad public policy**
  - Competitive edge
  - Anti-growth agendas
- **Don't plan based on what the world looks like today**
- **Human beings consume less than 1% of all the water on the planet**
- **Fear of lack will drive poor public policy decisions**



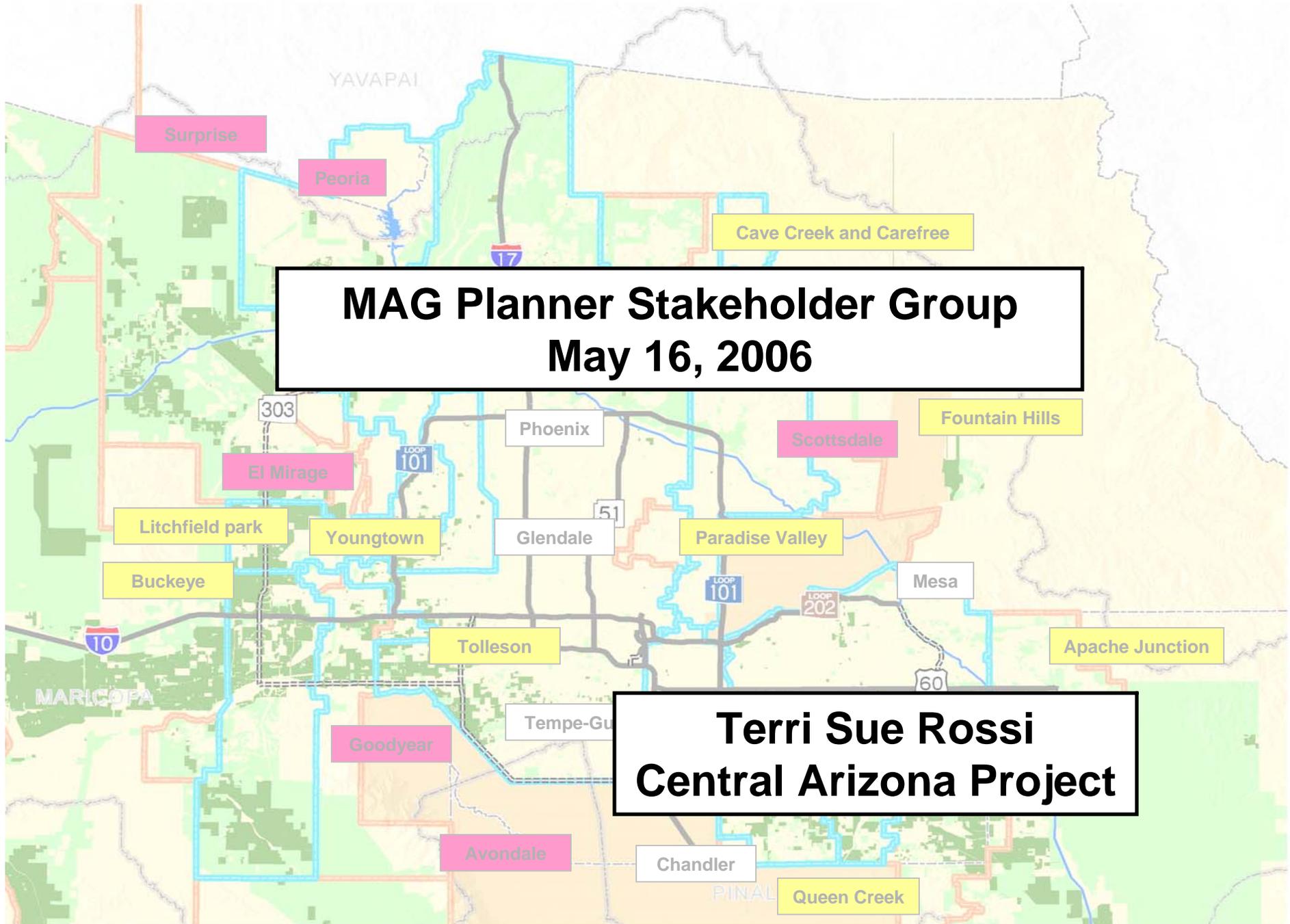
**When catastrophe finally arrives,  
suddenly one morning...how did we  
get to the point where we need a water  
rescue that dwarfs the savings and  
loan bailout...what will we tell the  
nation and the world and ourselves?**

Jon Talton, Arizona Republic  
(February 12, 2006)



**In the end, it got down to fear of lack  
and lack of cooperation. Everything we  
needed was right in front of us. We just  
lacked the vision to see it. So we got  
started later than we would have liked,  
but eventually life went on...**

Future Reporter, Arizona  
Republic (April 7, 2056)



**MAG Planner Stakeholder Group  
May 16, 2006**

**Terri Sue Rossi  
Central Arizona Project**