

An aerial photograph of a city, likely Las Vegas, showing a dense urban area with a grid of streets and buildings. In the foreground, there are green spaces and a winding road. The background features rugged, brown mountains under a cloudy sky. The text is overlaid on the image in a yellow, sans-serif font.

# Constructing Strong Foundations: Municipal Water Use

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CRWUA 2023

# New Study Finds Most Of Earth's Landmass Will Be Phoenix Suburb By 2050

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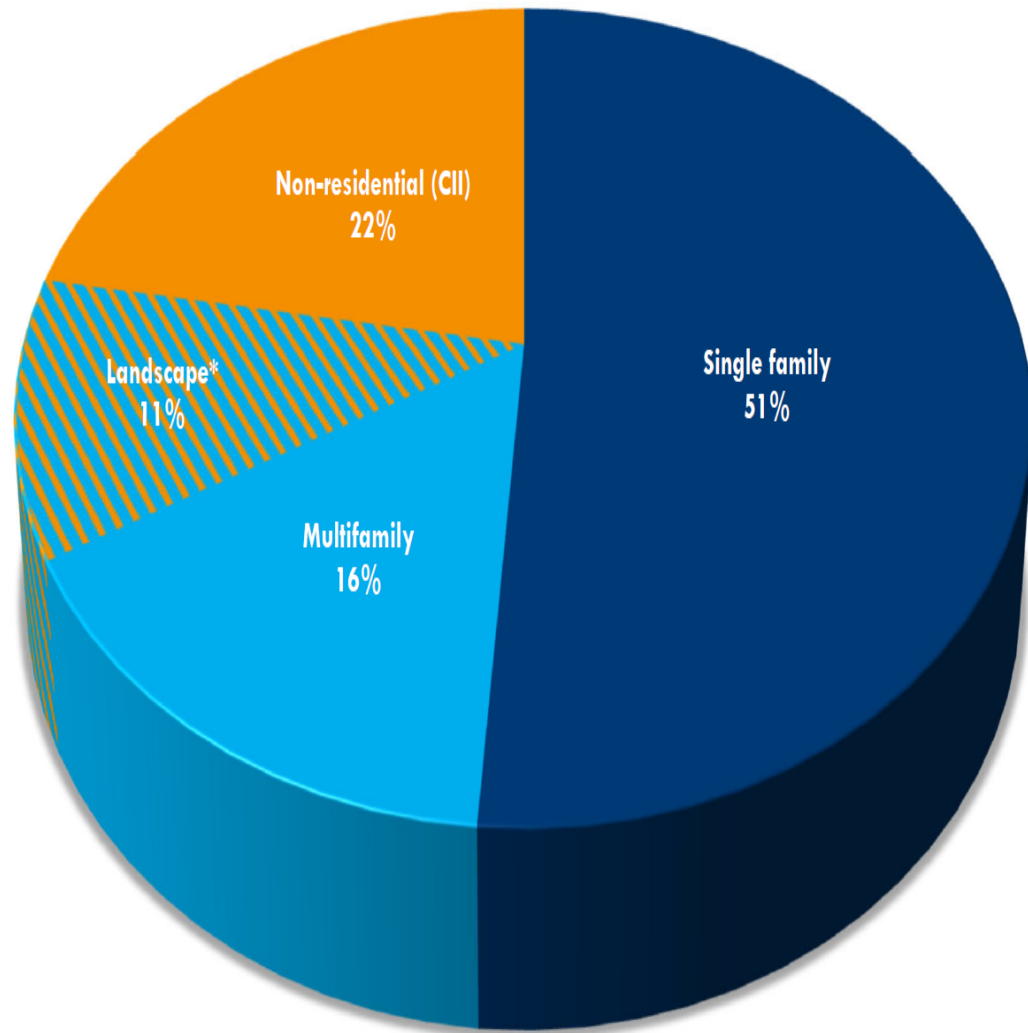


# Overview

- Definitions
- Boundaries
- Water Supply Portfolio
- Use & Trends
- Decoupling
- Business model
- Economic Productivity
- References

# M & I Use – definitions

- Compact Art. II (h): “The term “domestic use” shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power.”
- Reclamation [CU & L report](#) M&I category includes “Mineral Resources,” “Thermal Electric Power,” and “rural, urban, and other industrial uses.”
- Reclamation’s 2015 [Moving Forward report](#) focuses on Urban uses, including residential, commercial, institutional (such as schools), and industrial uses.
- Does *not* include Tribal water use
- Recent journal articles focus on water use trends across cities, esp. >50,000 people
- [“Municipal and Industrial](#) means the use of water by individuals, cities, towns, public or quasi-public districts, private corporations, homeowners associations, or other entities for domestic, municipal, and miscellaneous related purposes as those terms are traditionally and commonly construed, including the use of water for purposes of producing or processing a non-agricultural product or service for sale, including without limitations, such uses as manufacturing, mining, milling, land reclamation, golf course irrigation, snowmaking, and non-hydroelectric power generation; but excepting the agricultural use of water defined herein.”



\*Dedicated landscape meters are found at both CII and multifamily facilities. This is the aggregated total for both water use sectors.

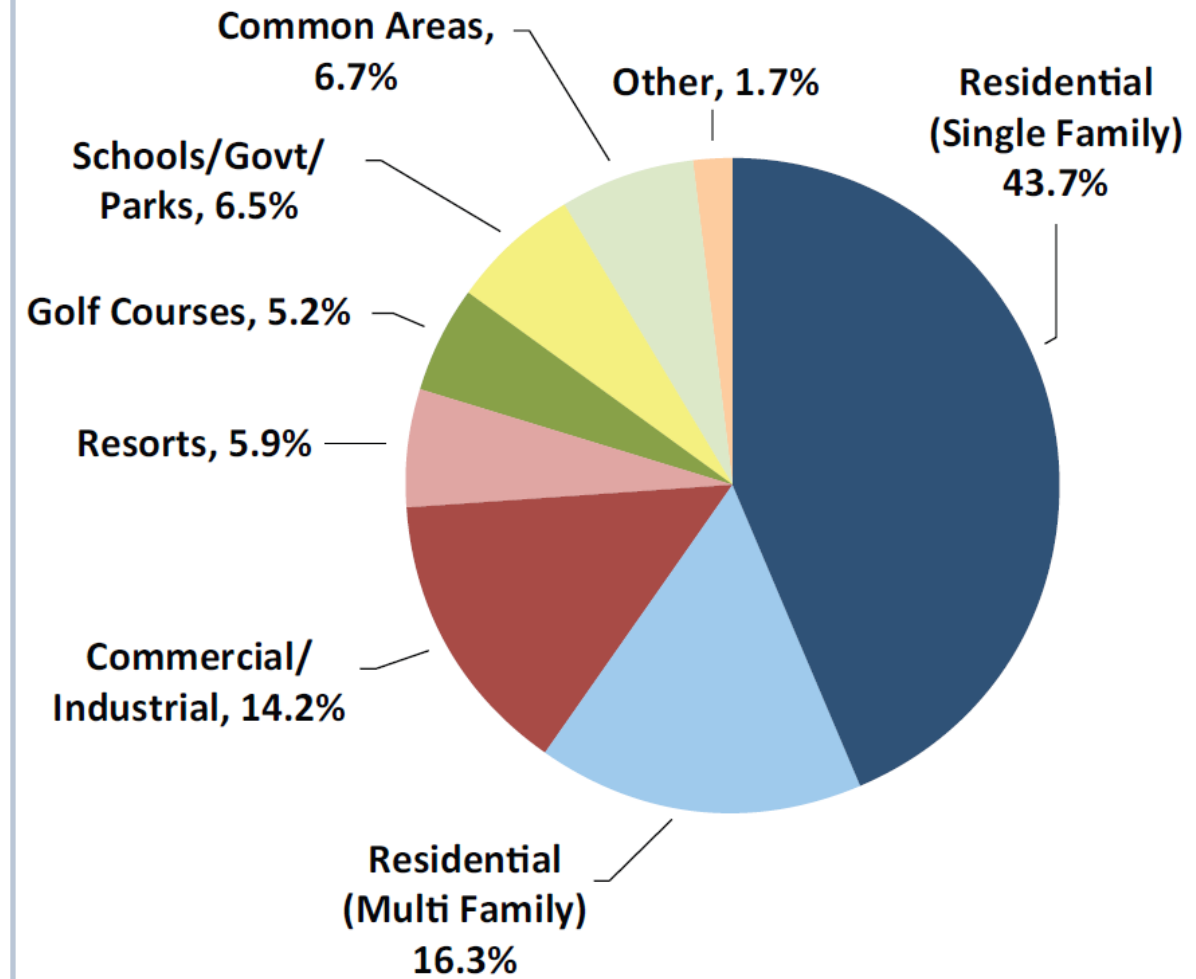
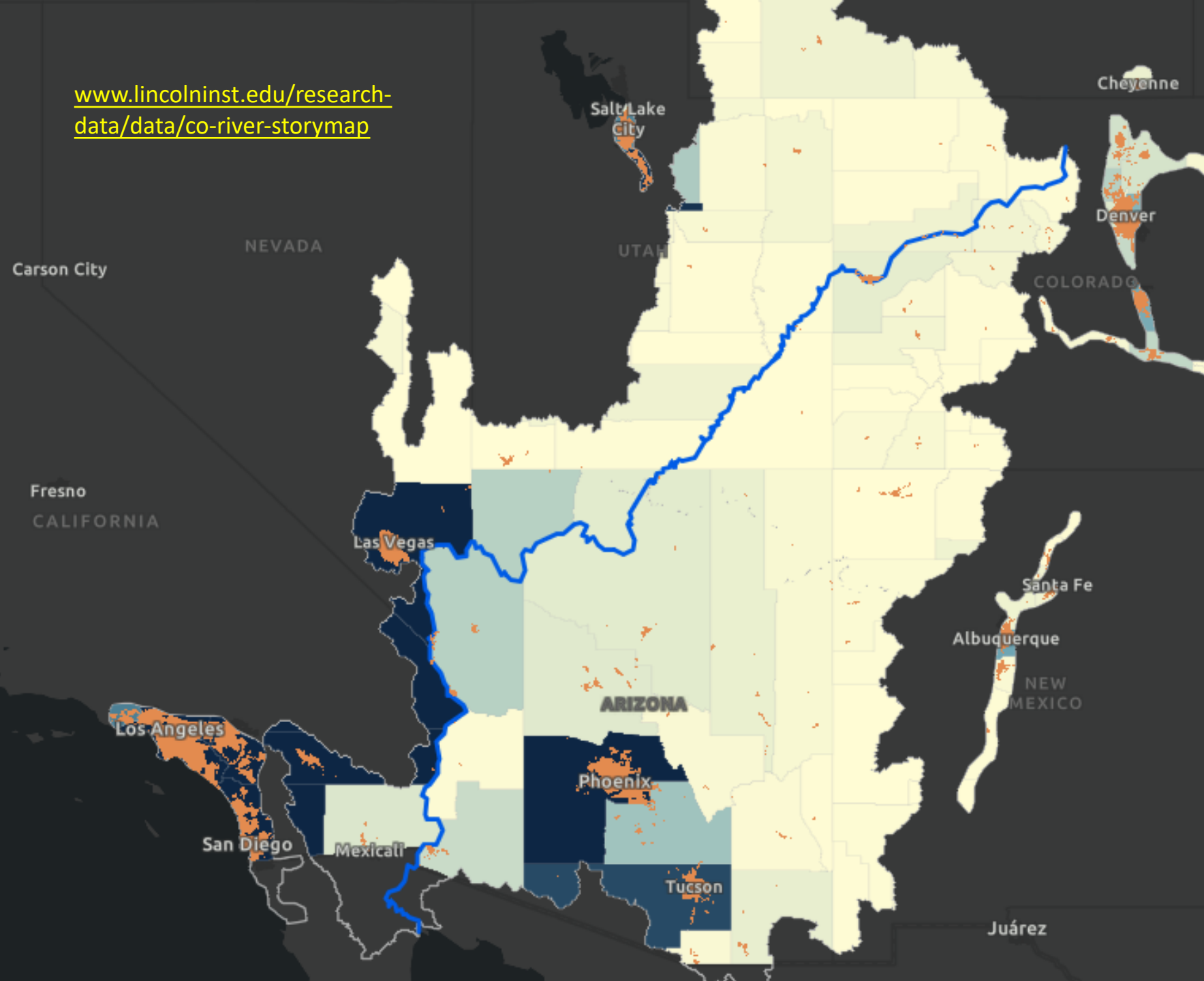


FIGURE 3.4 Southern Nevada Municipal Metered Use (2021)

[www.lincolnst.edu/research-data/data/co-river-storymap](http://www.lincolnst.edu/research-data/data/co-river-storymap)



## Municipal Water Use in the Colorado River Basin

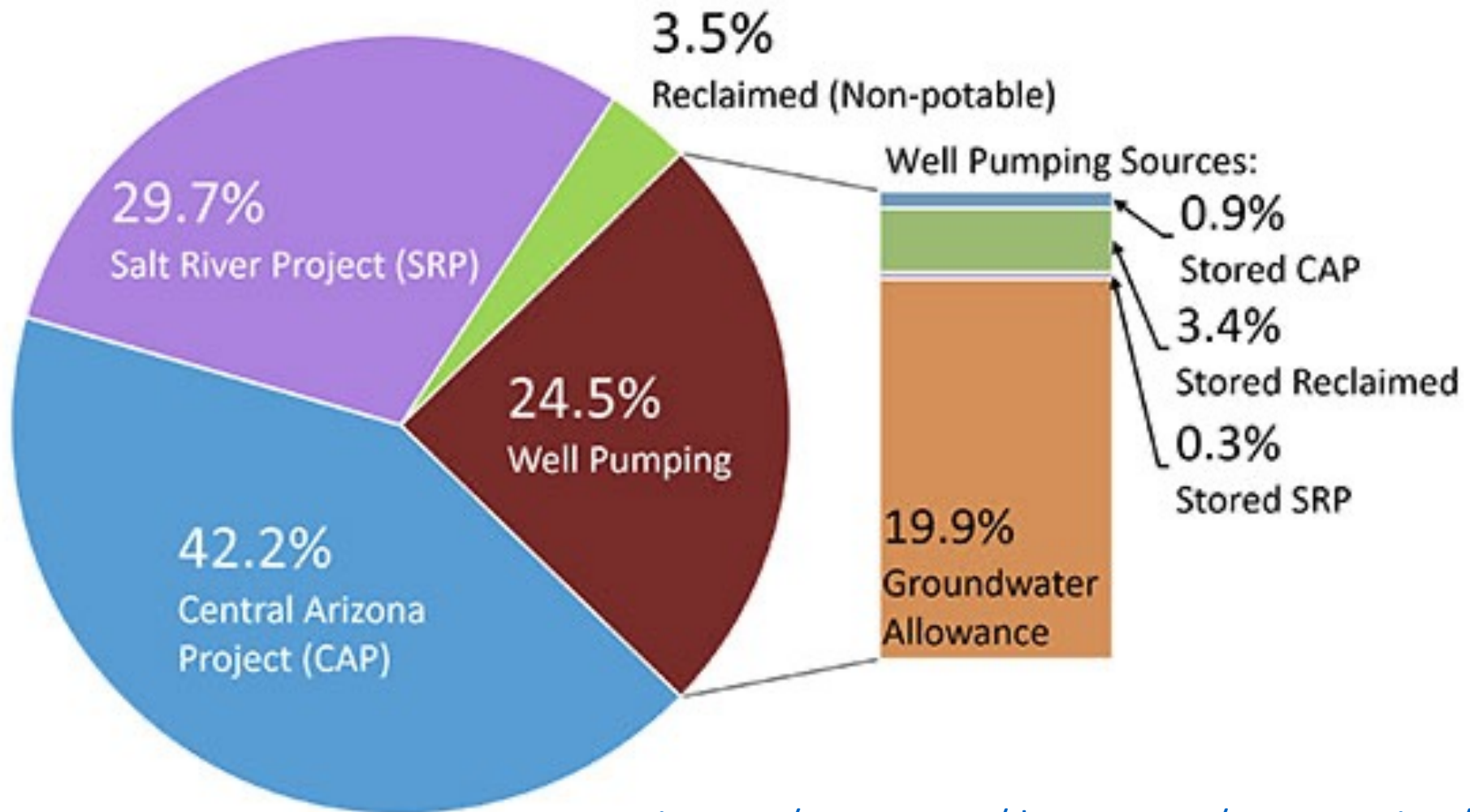
A relatively small amount of land in the Basin is urban and built up, making the overall region more rural. However, 3 of the 13 largest metro areas in the U.S.—San Diego, Phoenix, and Las Vegas—depend on Colorado River water.

Municipal water use is clustered around a few U.S. Census Urban Areas of 50,000+ people (shown in orange) and cities around the Basin. Water use in these more populated areas is reflected in the variations in public water supply usage at the county scale (darker shades of blue indicate more county-level water usage).

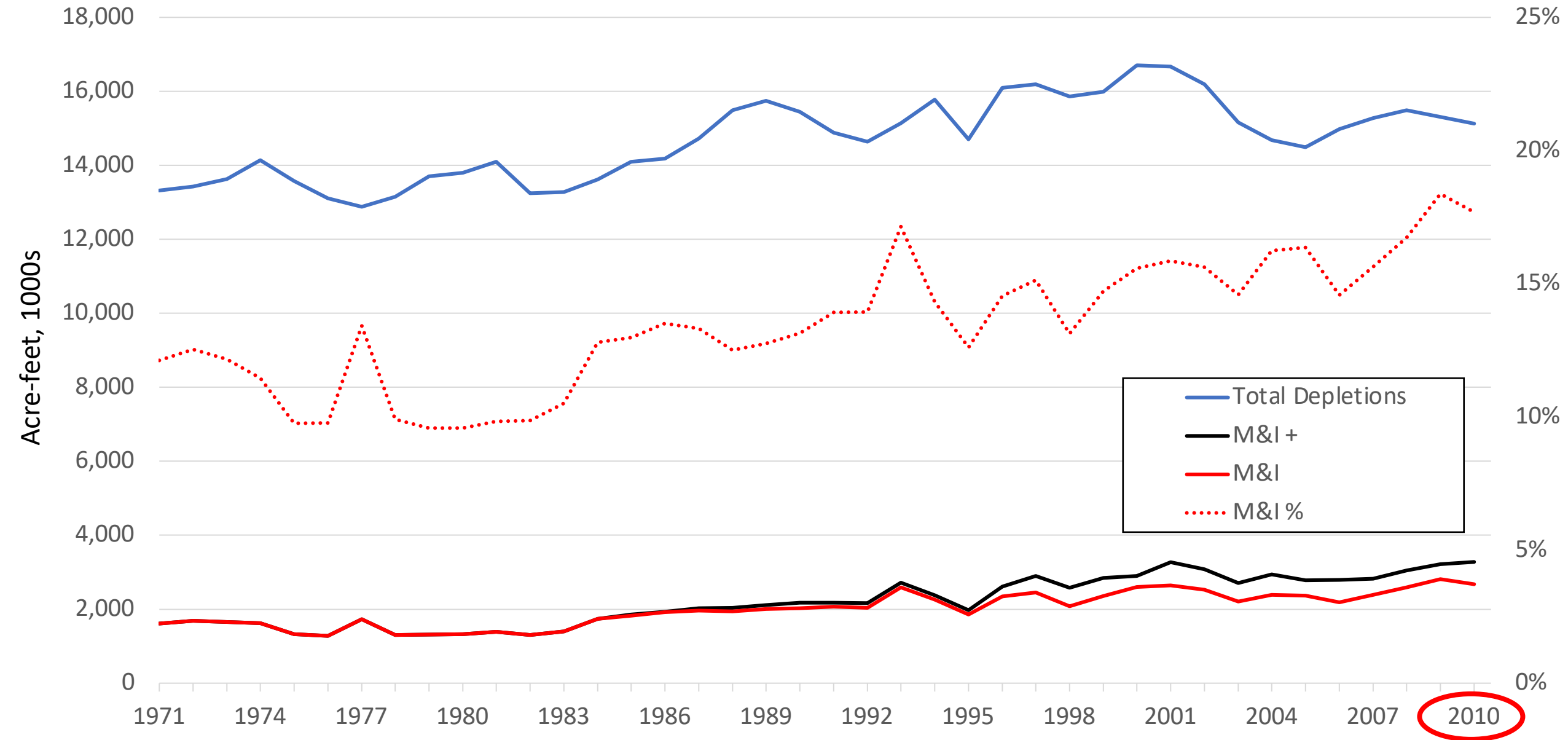
# City of Peoria, Arizona's Water Sources

2022 Total Water Delivered = 11.48 billion gallons or 35,236 acre-feet

\*May not sum exactly due to rounding

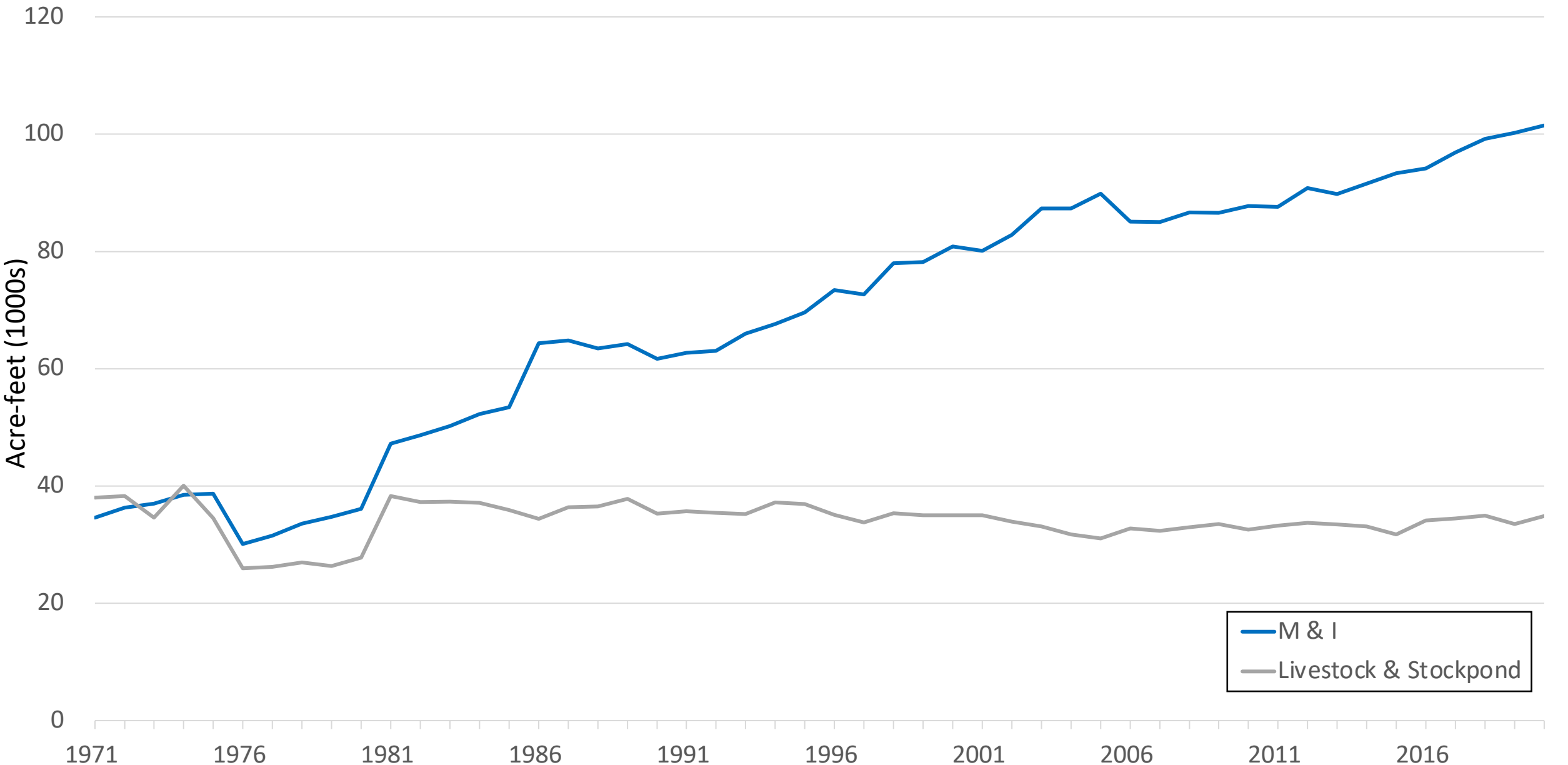


# U.S. Colorado River Water Use, 1971-2010



Source: Reclamation, 2012 CO R Basin Study Tech Report C

# Upper Basin Water Use, 1971-2020 (excludes exports)



Source: Reclamation



Reserva de

**Table 27. Mexico Water Agency Deliveries**

<i>Municipio</i>	1990		2000		2008		Change 1990-2008	
	Total	CO R Basin	Total	CO R Basin	Total	CO R Basin	Total	CO R Basin
Tijuana	53,244	?	65,790	62,200	86,018	82,100	32,774	?
Mexicali	65,559	65,559	70,064	70,064	69,472	69,472	3,913	3,913
<i>Mexicali - non-city</i>	7,925	7,925	9,141	9,141	10,659	10,659	2,734	2,734
Nogales	?		?		20,373	10,800		
San Luís Río Colorado	17,188	17,188	25,953	25,953	24,400	24,400	7,212	7,212
Tecate	?		5,908	4,069	6,591	4,749		
Playas de Rosarito			3,693	3,490	4,179	4,000		
<b>TOTAL (rounded)</b>	<b>&gt;144,000</b>	<b>&gt;90,700</b>	<b>&gt;181,000</b>	<b>&gt;175,000</b>	<b>221,700</b>	<b>206,000</b>		

Note: Given in acre-feet . ? = unknown

Source: [Municipal Deliveries of Colorado River Basin Water](#)

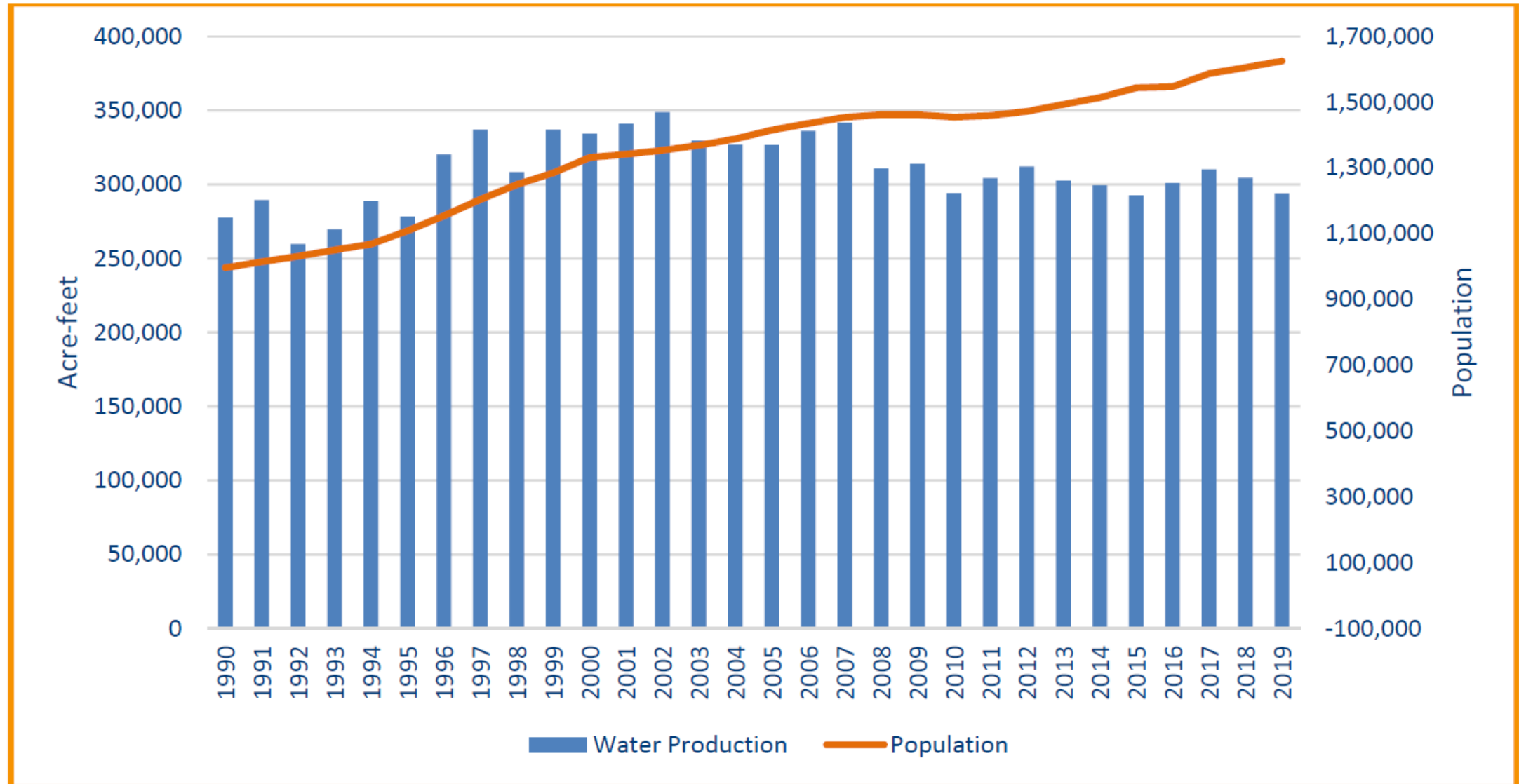


## Managing the Unmeasured – Colorado River

### Key Takeaways

- Despite the severity of the current water crisis in the Colorado River and decades of management, research, and litigation, basic facts about the river, such as the exact number of people it supports, remain unknown.
- A detailed accounting of where and how we use Colorado River water must be prioritized.

[pacinst.org/managing-the-unmeasured-colorado-river/](https://pacinst.org/managing-the-unmeasured-colorado-river/)

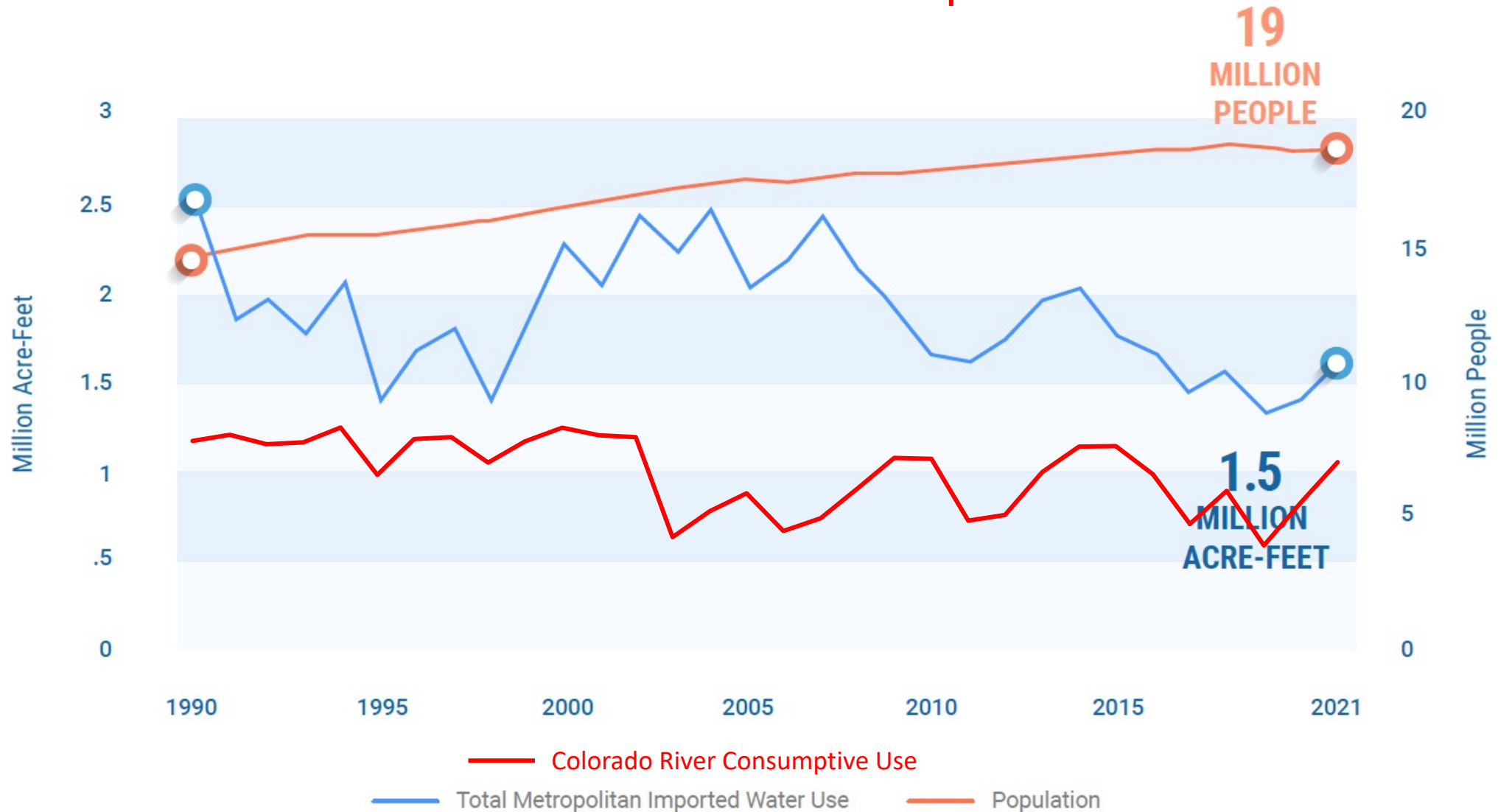


**FIGURE 27. PHOENIX WATER DEMAND AND POPULATION GROWTH, 1990-2019**

# Population Growth vs Metropolitan Imported Water Use

## Metropolitan's Service Area 1990-2021

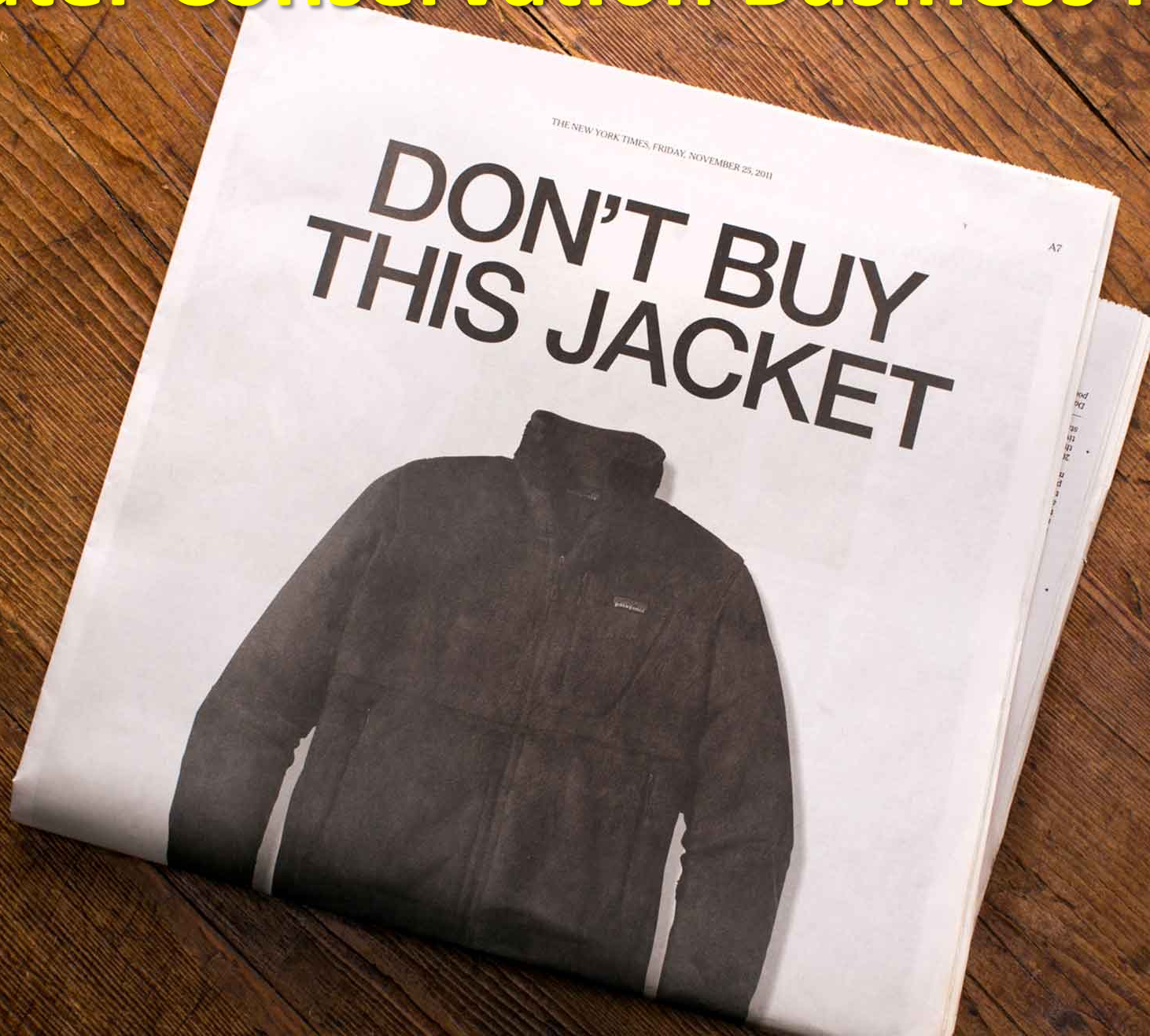
### vs Colorado River Consumptive Use



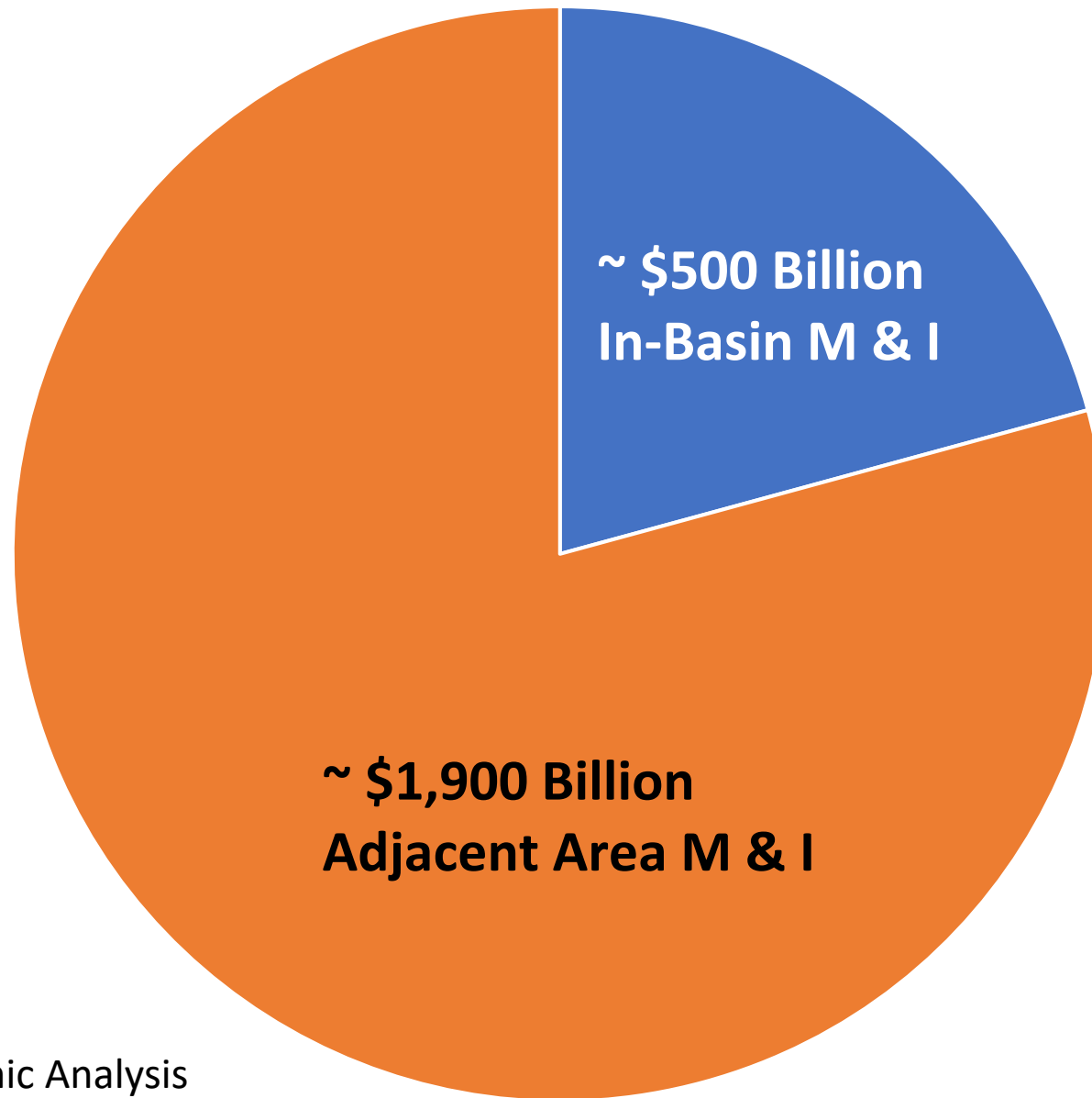
Demand on Metropolitan Imported Water includes consumptive and replenishment demand

Sources:  
MWD 2023 Annual Achievement Report,  
Reclamation annual Decree Accounting reports

# Water Conservation Business Model



# Total Gross Domestic Product, 2021



# Sources

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