



BABBITT CENTER
FOR LAND AND WATER POLICY

A Center of the Lincoln Institute of Land Policy

The Future of Water in the Southwest



The Colorado River Basin

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The Future of Water in the Southwest: Fact and Fiction

Is the Basin Running Out of Water?

- Colorado River Overview
- Economic Powerhouse
- Linking Land & Water Planning – Arizona’s Declaration on building with an Assured Water Supply Certificate



The Colorado River System is Complicated


- The Colorado River provides water to cities, farms, industries, and ecosystems across seven US States and Mexico. Although not the largest river in the US, the Colorado is the *hardest working*.
- 1,450 mainstem river miles
- 246,000 sq mile watershed
- 14 MAF/year runoff
- 10 major reservoirs

Where is the Colorado River Basin?









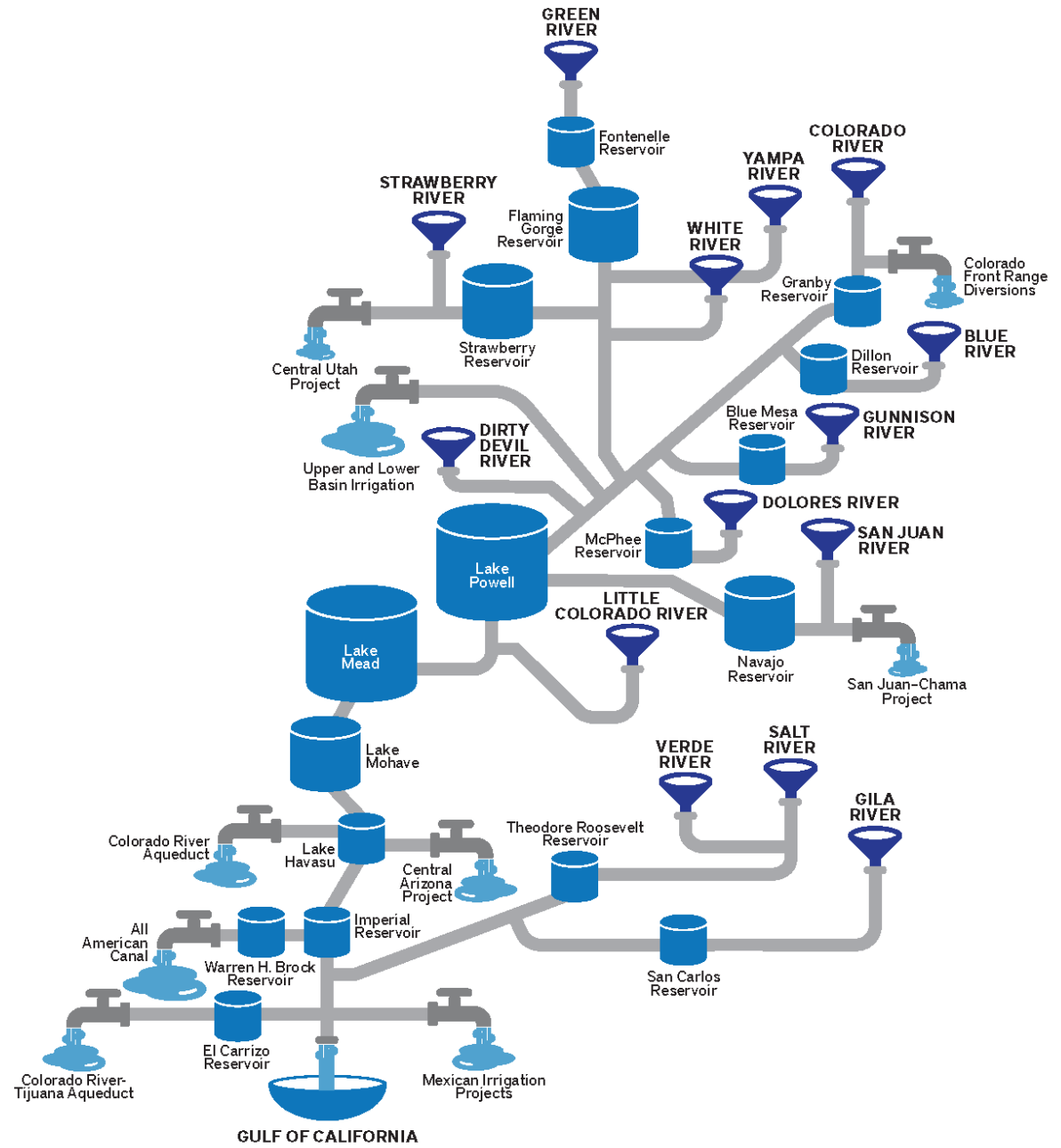
The Plumbing of the Colorado River Basin

KEY TO THE PLUMBING SYSTEM

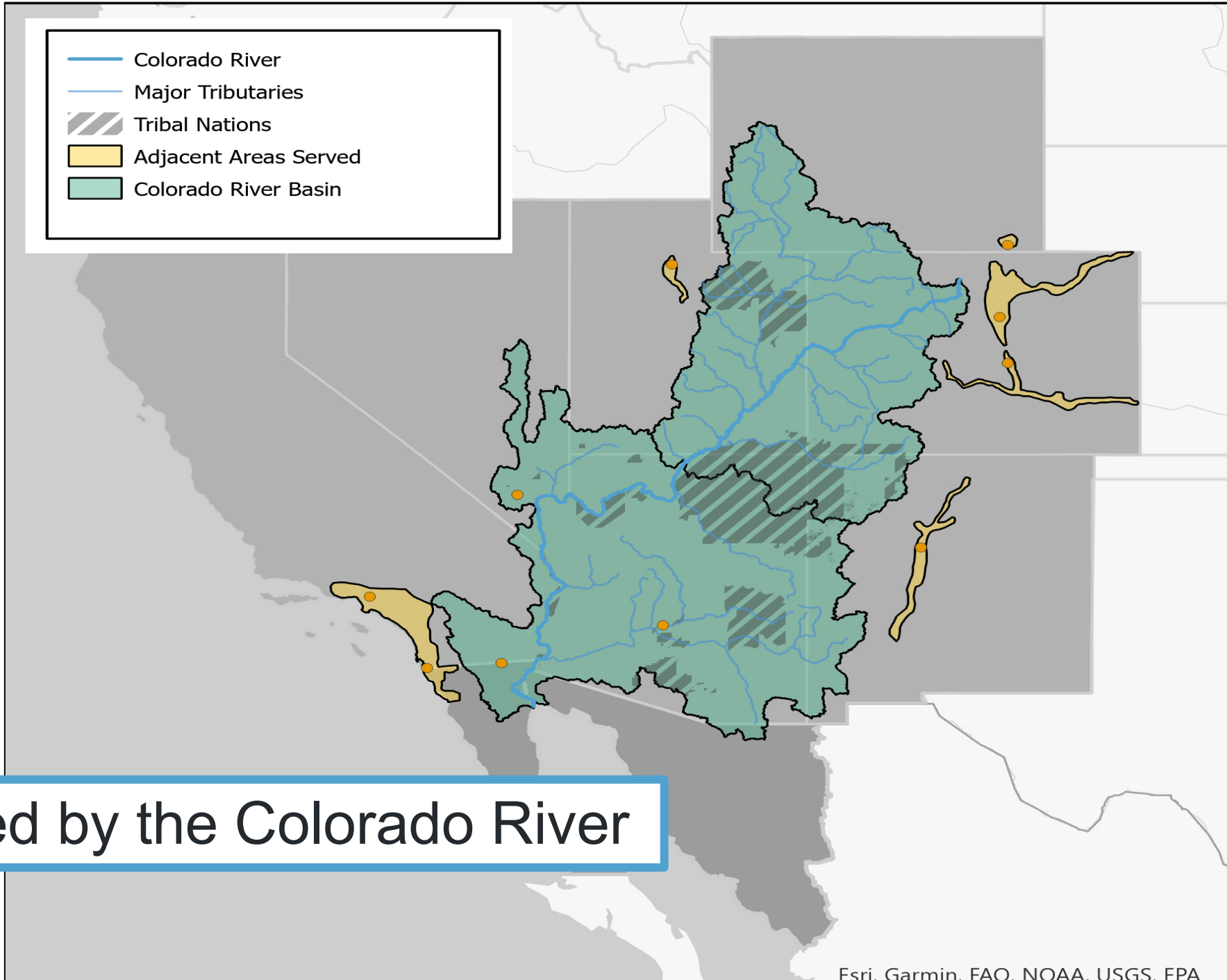
 Significant Tributary

Based on the original concept published by *High Country News*, hcn.org.

Reservoir Storage Capacity In Acre-feet	Water Diversions in Acre-feet
 Less Than 1.5 Million	 0-1 Million
 2-5 Million	 1.1-5 Million
 20-35 Million	 5.1-15 Million



- Colorado River
- Major Tributaries
- ▨ Tribal Nations
- Adjacent Areas Served
- Colorado River Basin



Areas Served by the Colorado River



The Colorado River Basin's impact on 40 million people and the US Economy

- Fuels a regional economy that would, by some accounts, be the fifth-largest in the world if the Colorado River Basin were a separate nation.
- Supports \$1.4 trillion in annual economic activity
 - That's equivalent to about 1/12 of the total U.S. domestic product.
- Includes an estimated 16 million jobs in California, Arizona, Nevada, Utah, Colorado, New Mexico and Wyoming.
- Including all states that rely on the river, it accounts for at least **half** of the gross economic product.
- Even more in specific states:
 - 65% in New Mexico
 - 87% in Nevada.
- The Basin is a **BIG DEAL**



Governor Hobbs Unveils 100-Year Study To Protect Valley Groundwater Supplies and Announces \$40 million Investment in Arizona Water Resiliency Fund – Press Release June 2, 2023



Growing Competition for Colorado River Water Resources



So, is the Colorado River Basin running out of water?

Fact or Fiction?

- “Arizona Is Running Out of Cheap Water. Investors Saw It Coming” **Bloomberg CityLab**
 - *Fiction...ish for the first statement — Hard fact for the second.*
- “Historic Colorado River deal not enough to stave off long-term crisis, experts say” **The Guardian**
 - *Maybe?*
- “Arizona Limits Construction Around Phoenix as Its Water Supply Dwindles” **The New York Times**
 - *True – sort of.*



Arizona has always been forward thinking about water



- Assured water supplies have been a requirement in certain areas of Arizona since 1980 when the law was by codified by Governor Bruce Babbitt.
- Conservation, reuse, water exchanges, and carefully managing the water we do have — groundwater — is how we can ensure water security now and into the future.
- About 80% of the state is home to a growing rural population of about 1.5M people who live where there is no groundwater management — despite groundwater often being the only water supply. As a result, rural residents' wells are drying up or under threat, local farms are going under, and rivers are being depleted.
- Arizonans are paying close attention and are expecting results — water is currently the #1 issue among Arizona voters.

AGRICULTURAL FACTS



Approximately 70% of Colorado River water is used for agricultural purposes



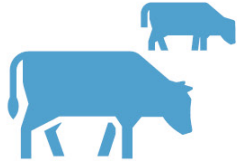
In 2020, ≈6,000 square miles of CRB + AS land was used for crop cultivation



In 2020, ≈1,000 square miles of CRB + AS land is agricultural land that has been left fallow



About 15% of the nation's crops are produced and 13% of the nation's livestock are raised in the CRB + AS



More than half of the cropland and water use in the CRB is dedicated to feeding cattle and horses



Alfalfa alone covers more than a quarter of the total irrigated acreage in the CRB



Irrigated pasture and forage crops in the CRB consume more than 5 maf of water each year



\$23.3B

In 2019, agricultural production and processing industries represented 1.7% of Arizona's GDP, with around \$5 billion in agricultural cash receipts. The highest-value commodities were lettuce, dairy products, cattle, and calves. However, the estimated impact of agriculture on Arizona's economy is about \$23.3 billion

In 2020 the top five crops by acreage cultivated in the CRB were:

	Alfalfa	Other Hay/ Non Alfalfa	Cotton	Corn	Winter Wheat
CRB	1,353,548	570,446	139,161	115,629	87,076
CRB + AS	1,698,262	739,952	139,201	410,404	227,936

How Arizona and other Western States are Tackling a Reduced Supply

- Bipartisan Infrastructure Act is providing serious funds — **\$83M**.
- Voluntary, but compensated reductions by AZ, NV, CA. **Three million acre-feet** over three years.
- AZ Water Resources Dept. was allocated state funds to leave water in Mead. These funds are paying:
 - Tribal Nations — Gila River Indian Community and Fort McDowell Yavapai Nation are leaving 417,000 acre-feet of water in Lake Mead over a two-year period.
 - One-third comes from greater Phoenix water users and providers.
 - Tucson, AZ's second largest city is leaving 110,000 acre-feet behind.
- Additional Arizona Reductions — Not Compensated
 - 592,000 acre-feet mostly affecting agriculture.

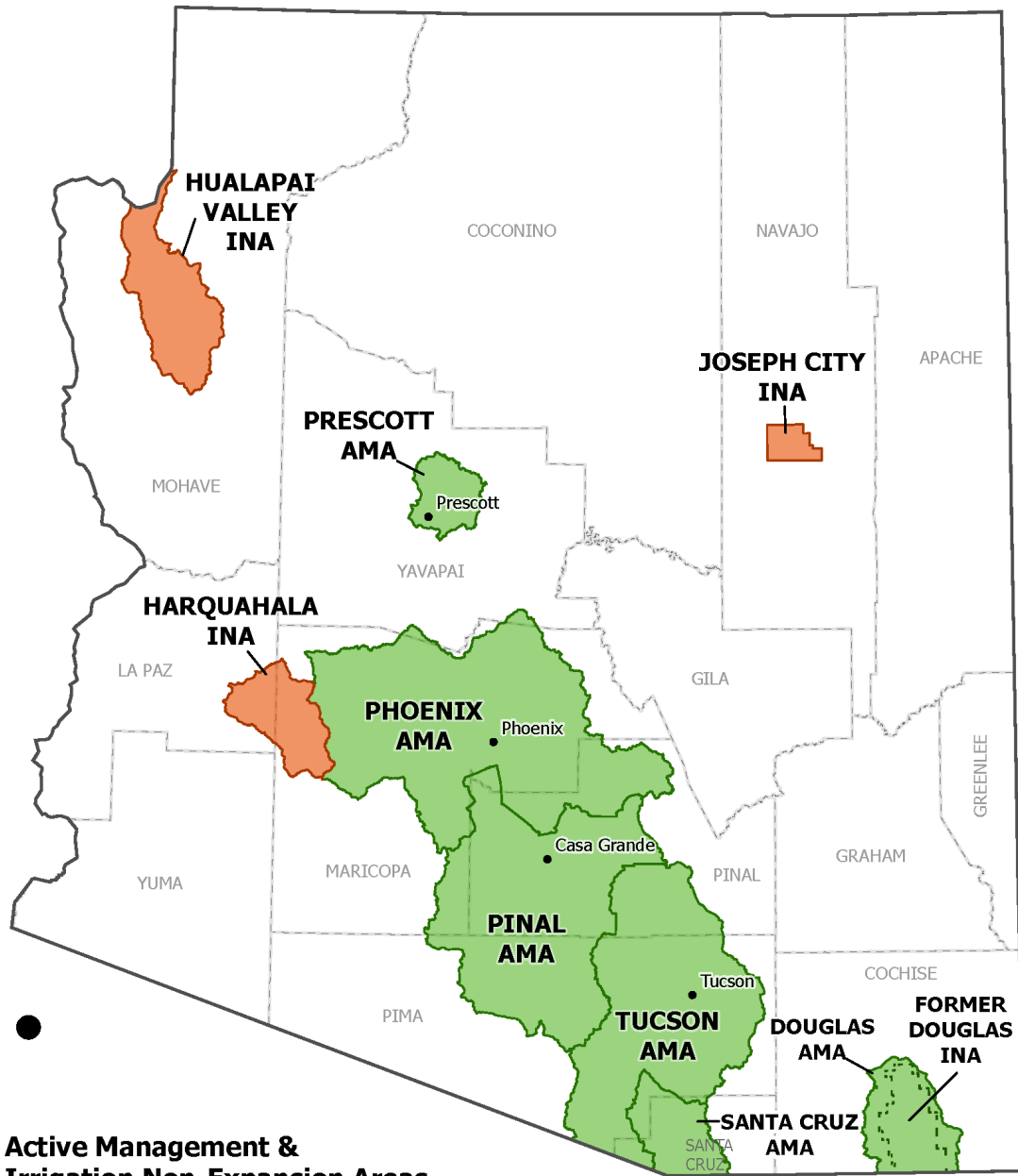
What About Phoenix? Back to those Pesky Headlines....

- Active Management Areas has its hydrology modeled on a regular basis.
- Recent modeling showed a 4% reduction of available water in the next 100 years. This number represents groundwater, not surface water (rivers, streams...).
- Any builder in an AMA must provide an assured water supply certificate.
- This certificate requirement is what caused the mostly hysterical headlines that grabbed national attention.



Active Management Areas in Arizona

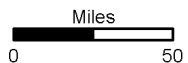
- To build in an Active Management Area, builders must have an Assured Water Certificate from the ADWR.
- Where are the problems?
 - The ex-urban, and rapidly growing areas barely inside the Phoenix AMA are most problematic – east and west of the city of Phoenix.
 - ADWR will no longer issue 100-year certificates for groundwater, though they'll still be available for new housing that relies on other water supplies.
 - Queen Creek and Buckeye rely on purchasing water to meet their demand as they rely primarily on groundwater.
 - The same goes for the Pinal AMA – this AMA is probably the most at risk for slow growth.



Active Management & Irrigation Non-Expansion Areas



ADWR January 2023



- Active Management Areas
- Irrigation Non-Expansion Areas
- - - Former Non-Expansion Areas



So, What's the Good News? And not so good...

Good

Metro Phoenix ranks No. 3 among U.S. cities for most vacant land.

Phoenix proper has a current inventory 80,000 lots that do have a certificate of assured water.

Not so Good

Pinal County, just south of Phoenix will struggle. Known for its affordability, it does not have any other sources of water besides ground water.

The restriction of certificates exempts commercial, industrial, and **build to rent subdivisions.**

An aerial photograph of a vast agricultural landscape at sunset. The foreground is dominated by a grid of dark green fields, likely corn, separated by reddish-brown dirt roads. In the middle ground, there's a small cluster of buildings and more fields. The background features a range of dark, silhouetted mountains under a sky with warm, orange and yellow hues from the setting sun.

The Lincoln Institute, and specifically, the Babbitt Center for Land and Water Policy, are working to secure our water future.

Our Mission

Advance the integration of land and water management to meet the current and future water needs of Colorado River Basin communities, economies, and the environment.

For More Information:

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