



U.S. Bureau of Reclamation's Lower Santa Cruz River Basin Study Planning for Climate Change in the Tucson Basin



Scenarios, Assumptions, and Models

The LSCR Basin Study is tailored to the unique needs of its partners, and will incorporate newly available "dynamically downscaled" climate projections to encompass a wider range of future hydrologic conditions than earlier Basin Studies. Additionally, it will consider environmental water needs in the modeling, option development, and trade-off analysis stages of the Study.

		Growth		
		Slow, Compact	Medium, Official	Rapid, Outward
Climate Emissions	Worse Case	D	E	F
	Best Case	B		C
	Current Climate		A	

Supply-Demand Scenarios

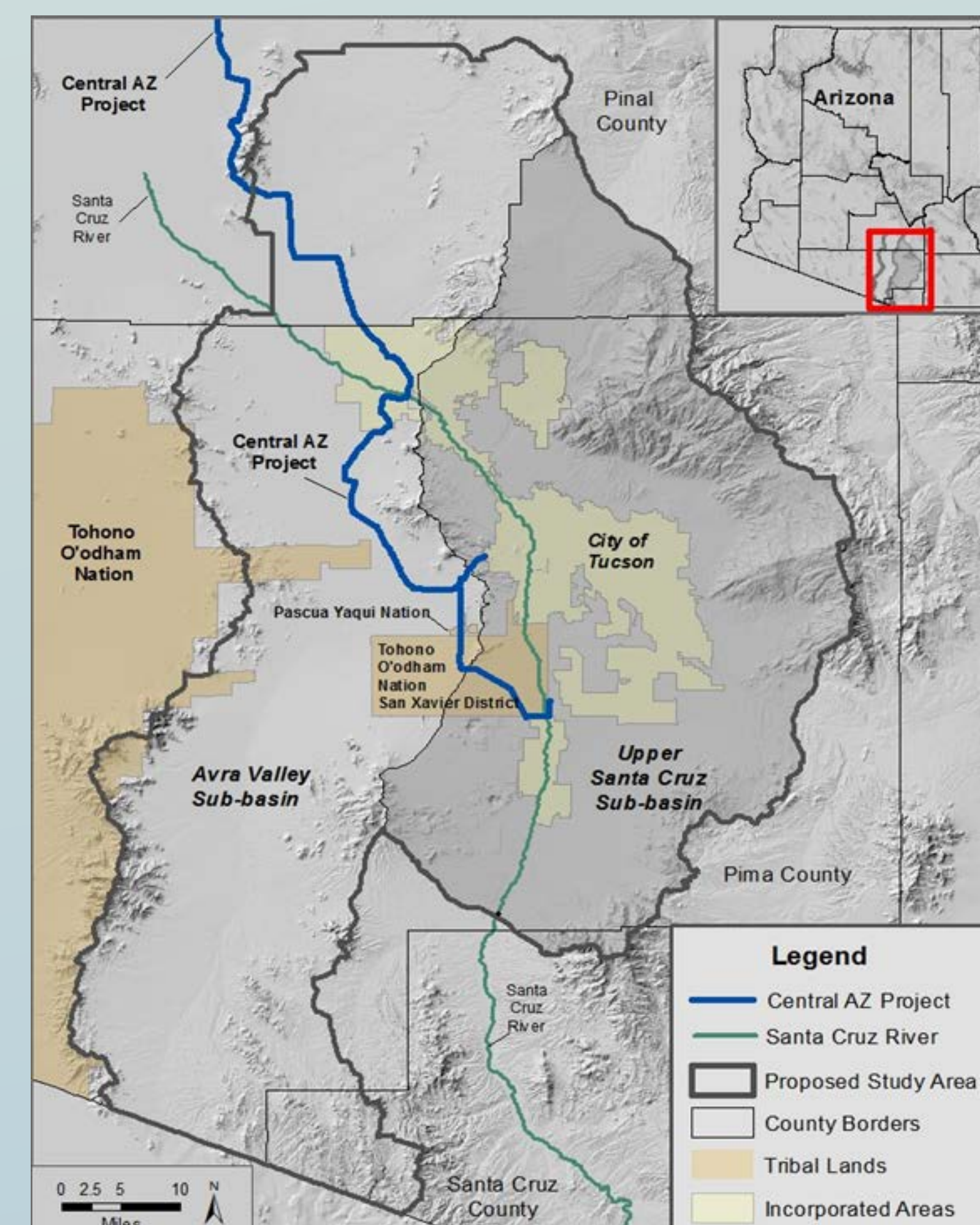
The Basin Study uses scenario planning to project alternative futures:

- A. Base case official growth projections, current climate
- B. Slow compact growth, best case climate
- C. Rapid, outward growth, best case climate
- D. Slow, compact growth, worse case climate
- E. Official growth projections, worse case climate
- F. Rapid, outward growth, worse case climate

What is the Lower Santa Cruz River Basin Study?

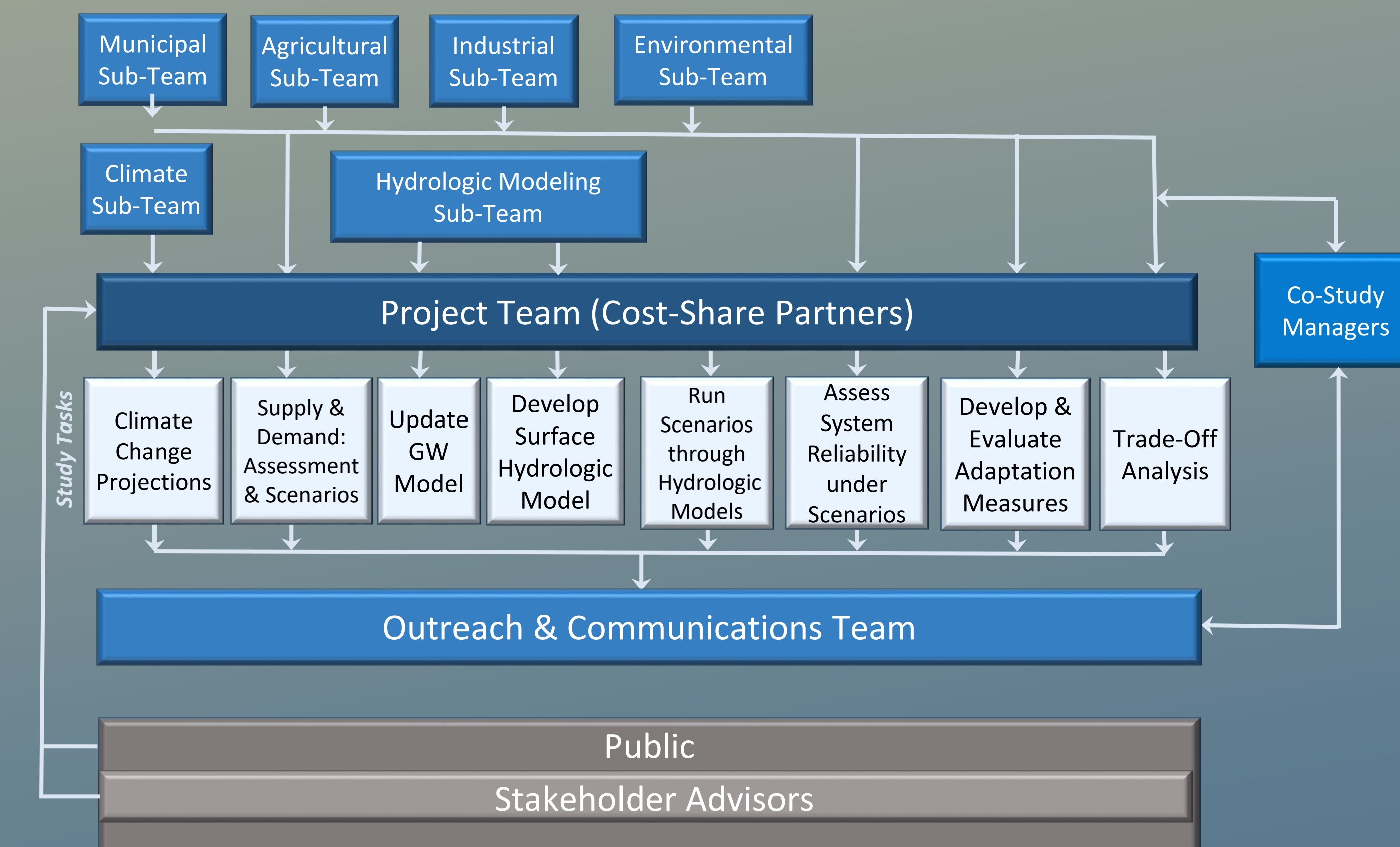
Four year, \$1,435,750 partnership between Reclamation and local cost-share partners to:

- Project supply & demand imbalances (due to climate change and other factors), now through 2060
- Evaluate risks to infrastructure and other systems
- Develop and investigate adaptation strategies (structural and non-structural)
- Perform trade-off analysis



LSCR Basin Study Area is identical to Tucson Active Management Area

Basin Study Management Structure



Local Cost-Share Partners



LSCR Basin Study Objectives

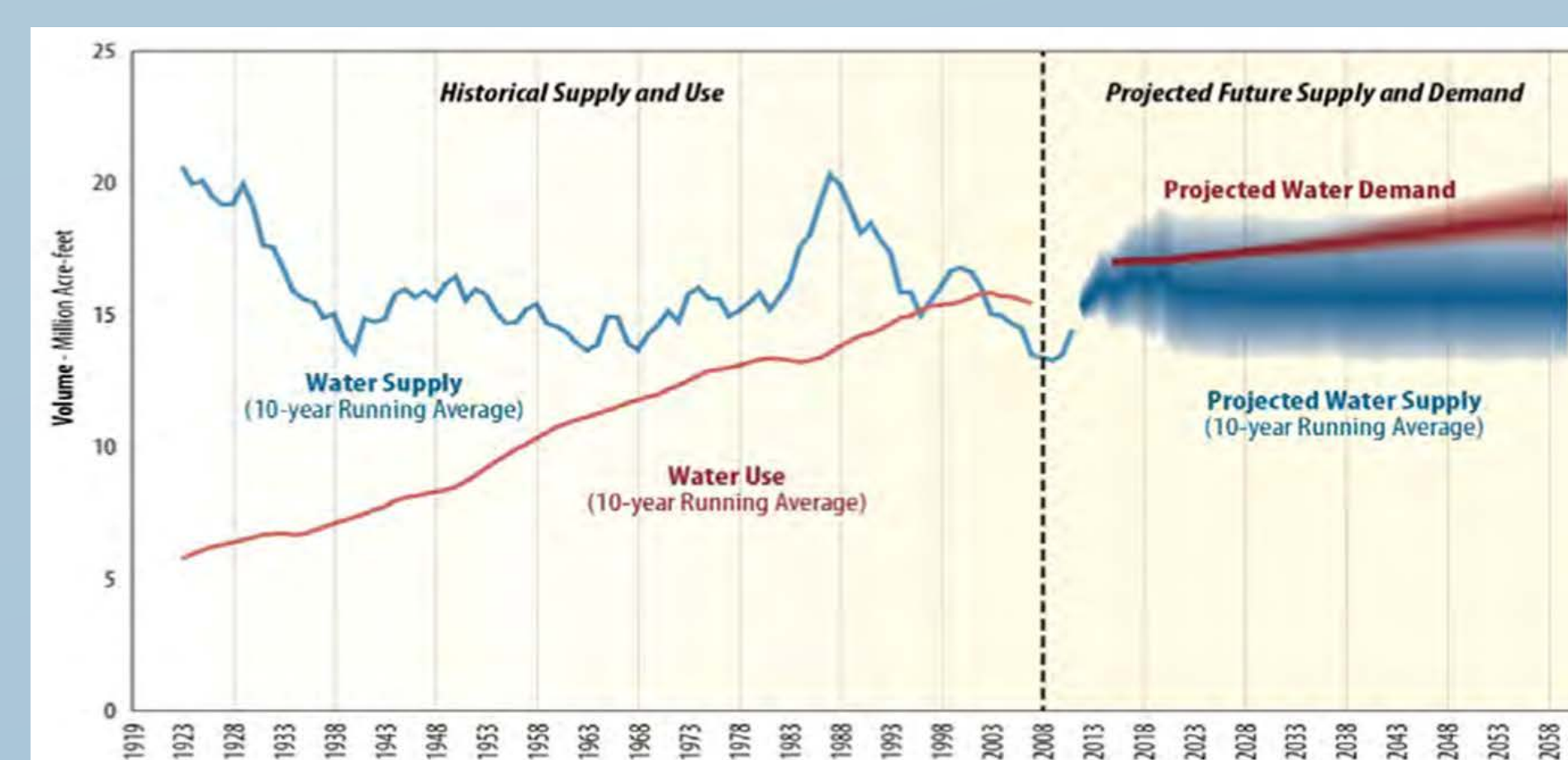
- Identify where physical water resources are needed to mitigate supply-demand imbalances
- Develop adaptation strategies to improve water reliability for municipal, industrial, agricultural, and environmental sectors

Climate Change Trends and Projections

- On average, the Tucson region is expected to get hotter and drier, despite uncertainty about the frequency and intensity of precipitation events. Statewide temperature increases range from 2.5-9.5°F by 2100
- Snowpack and streamflow are projected to decline locally and throughout the entire Lower Colorado River Basin, decreasing surface water reliability for cities, agriculture, and ecosystems. Decreases in CO River peak streamflow range from 10-30% (Harding et al., 2012)
- Reduced surface water supplies will increase regional reliance on non-renewable groundwater

Historical and Projected Water Supply and Demand for the Colorado River Basin

(Colorado River Basin Water Supply and Demand Study, U.S. Bureau of Reclamation, 2012)



(Santa Cruz River near Ina Road, Water Resources Research Center)

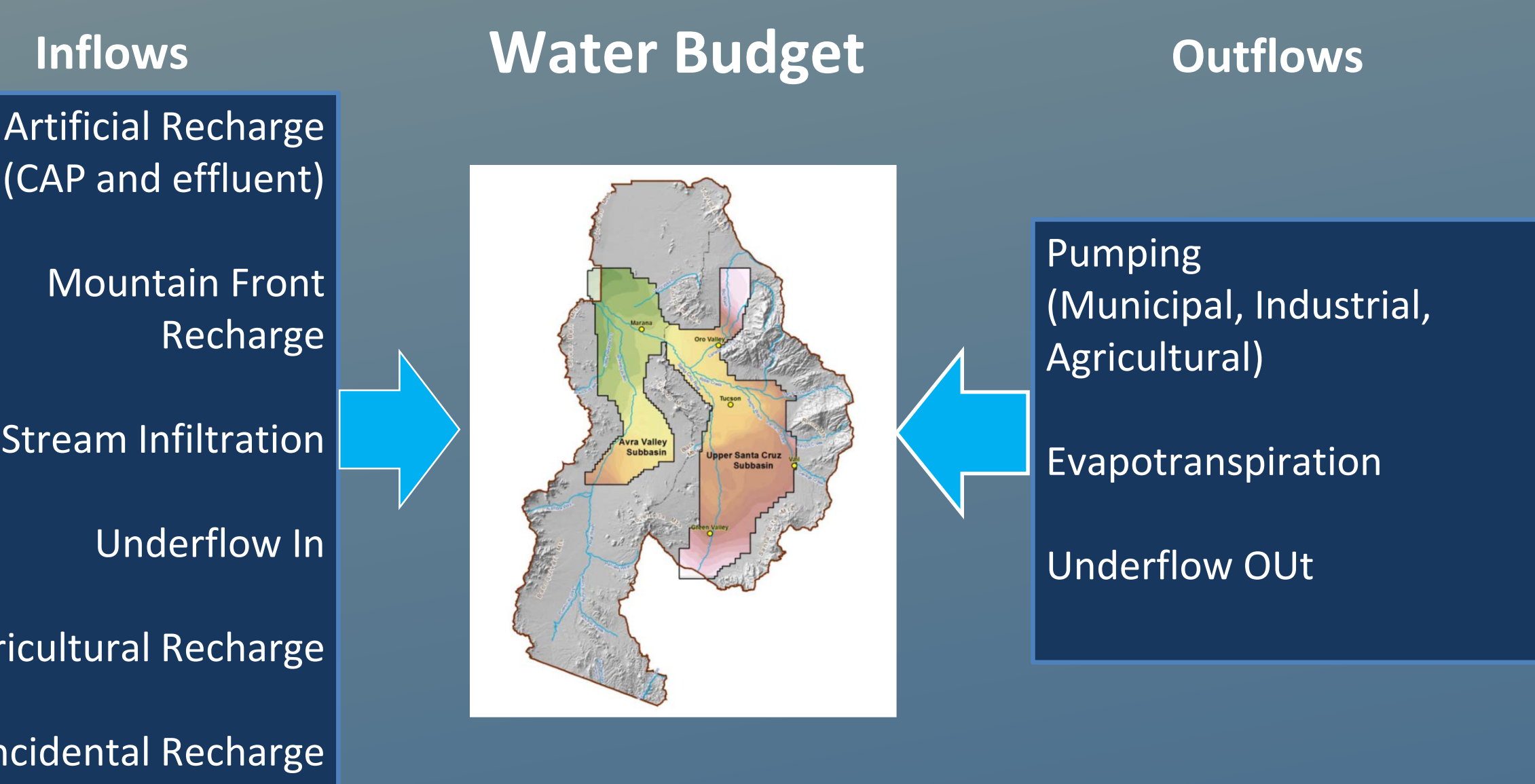
Planning for Alternatives

Although the LSCR Basin Study is a technical assessment and will not offer policy recommendations or commitments, the development of adaptation strategies to address water supply vulnerabilities and preserve groundwater dependent riparian ecosystems is a critical outcome of the study. As these findings could incentivize future adaptation efforts, community input will be strongly sought in this stage of the Basin Study, so as to encourage a wide array of structural and non-structural water management alternatives.

Stay Informed, Get Involved

Visit the LSCR webpage: www.usbr.gov/lc/phoenix/programs/lscrbasin/LSCRStudy.html

Submit questions/comments, or request to be added to the email distribution list: bor-pxa-lscrb@usbr.gov



"Chain of Models"

