

Water Banking & Recovery

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Water Banking & Recovery

- Water banking—recharging water for later use—is an important strategy for dealing with Colorado River shortages
- During shortage, the stored water is pumped from wells (“recovered”) to supplement (“firm”) deliveries of CAP water

Direct Recharge



In Lieu Recharge



Arizona Water Banking Authority

- The state established the AWBA in 1996
- Has stored over 3.8 million acre feet
- Stores for a variety of purposes
 - To firm CAP Municipal & Industrial priority subcontractors
 - To firm certain on-River M&I users
 - To firm a specific portion of the CAP water held by tribes
 - 15,000 AF for the Gila River Indian Community
 - 3,750 AF for White Mountain Apache Tribe (pending)
 - 4,974 AF for future water rights settlements
 - To meet interstate water banking obligations with Nevada

Note: the Federal government has additional firming responsibilities pursuant to the Arizona Water Settlements Act

Credits by AMA & Funding Source

Funding Source	Phoenix AMA	Pinal AMA	Tucson AMA	Total
4-Cent Ad Valorem Tax ¹	1,329,925	187,465	390,334	1,907,724
Withdrawal Fees	293,632	394,896	98,788	787,316
General Fund	42,316	306,968	54,546	403,830
Other Intrastate:				
Indian Firming Appropriation	-	-	28,481	28,481
Shortage Reparation	20,642	60,507	1,227	82,376
GSF Operator Full Cost Share ²	-	14,125	-	14,125
Intrastate TOTAL	1,686,514	963,961	573,376	3,223,851
Interstate - Nevada	51,009	439,851	109,791	600,651
TOTAL	1,737,523	1,403,812	683,167	3,824,502

Funding Source and Purpose

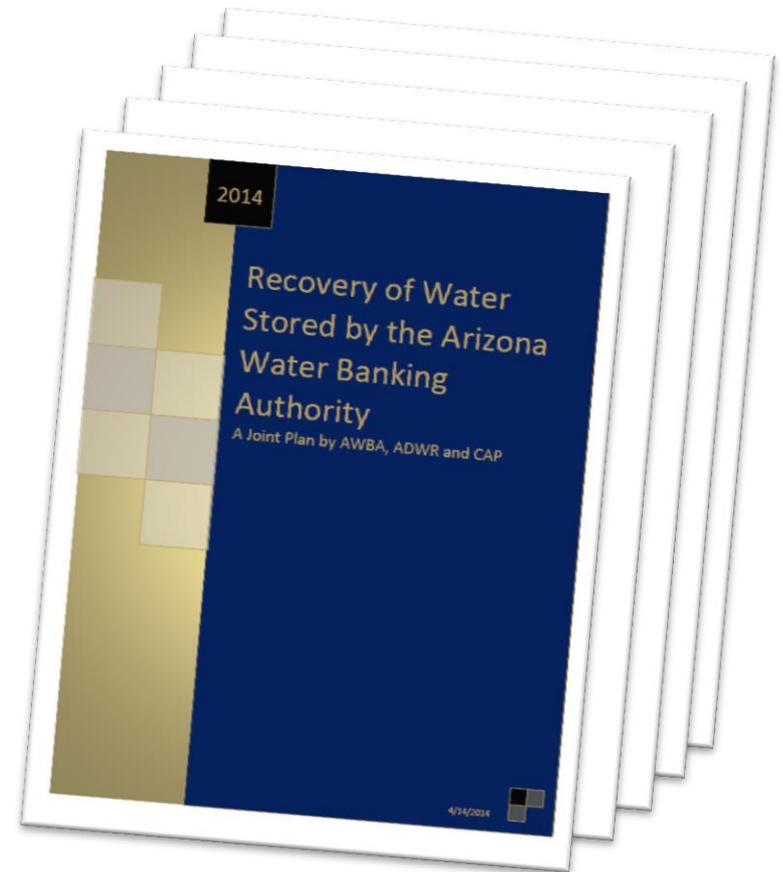
FUNDING SOURCE	Firming M&I CAP	Firming On-River M&I (P-4)	Firming Indian Settlements (NIA)	Fulfilling Water Management Objectives
Ad Valorem Taxes	X			
Groundwater Withdrawal Fees	X		X	X
General Fund	X	X	X	X
Shortage Reparations	X	X	X	X

CAP's Role

- The AWBA is separate from CAP, but there are many connections
 - CAP water is the supply being banked
 - CAP coordinates with AWBA on deliveries
 - CAP provides the largest source of funding
 - Some storage has occurred at CAP's recharge projects
 - CAP has significant responsibilities for recovering the stored water

Recovery Planning

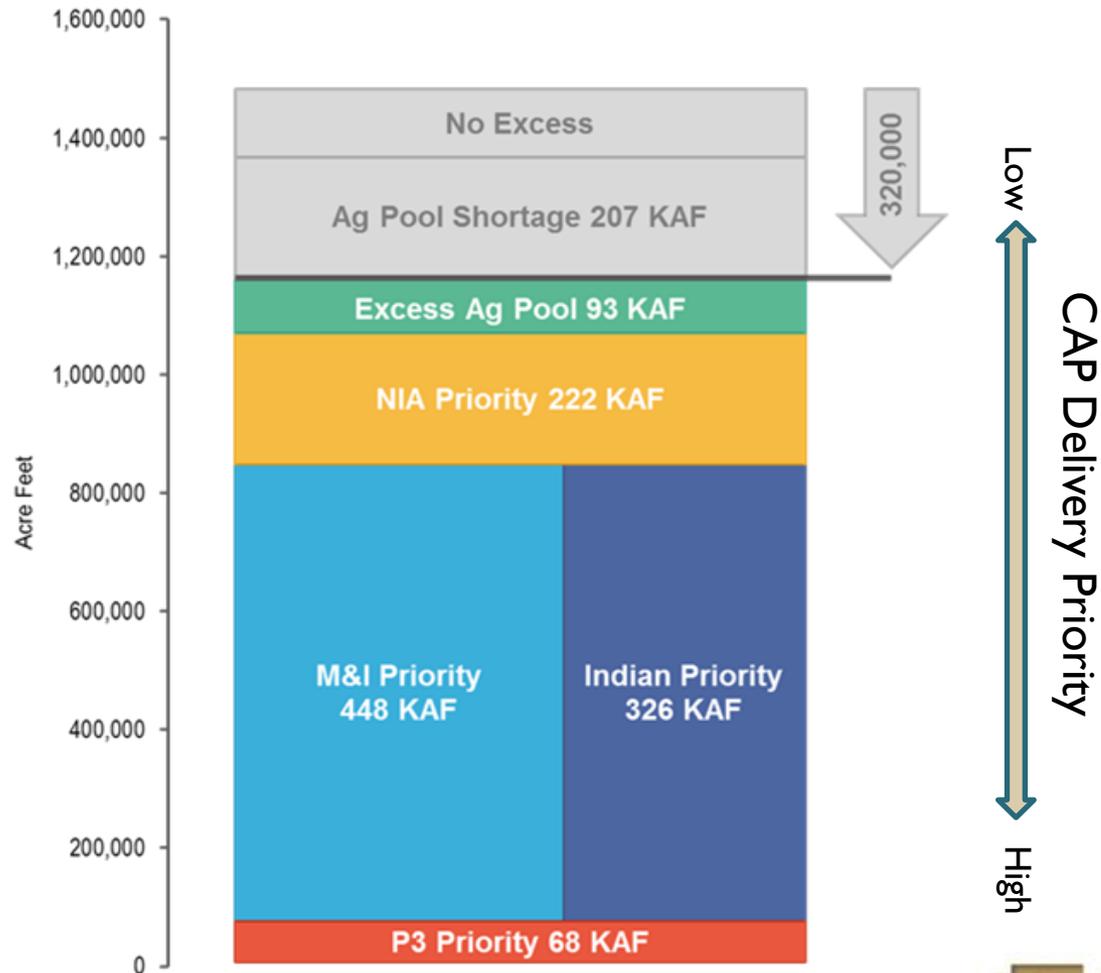
- A Joint Recovery Plan was recently developed by CAP, AWBA and the Arizona Department of Water Resources
- Describes basic framework, methods, timing and volume, and potential partnering opportunities



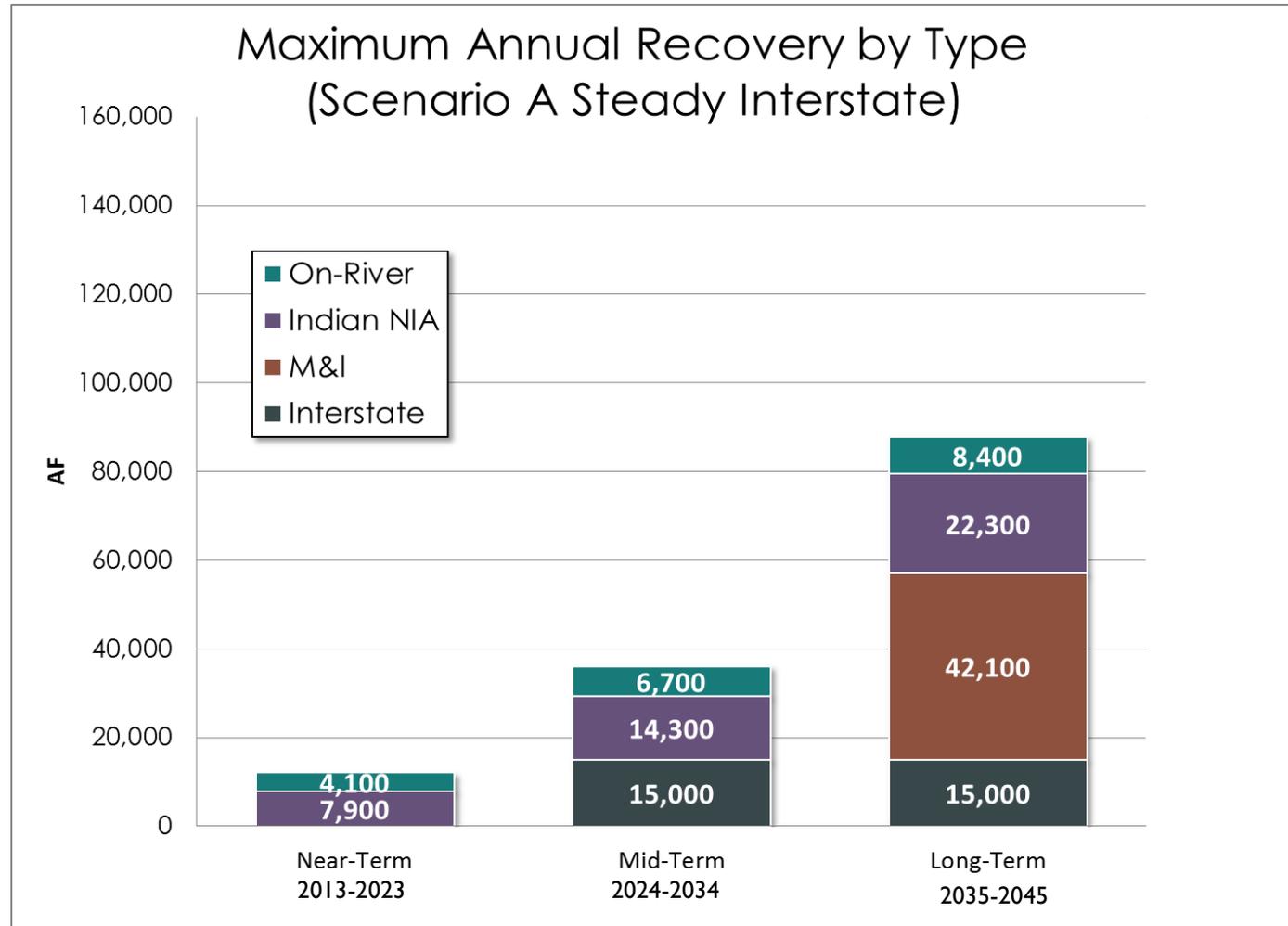
Instate Recovery Triggered...

when the reduction in Arizona's Colorado River supply intersects deliveries to users(CAP and On-River) for which the AWBA has firming goals or obligations

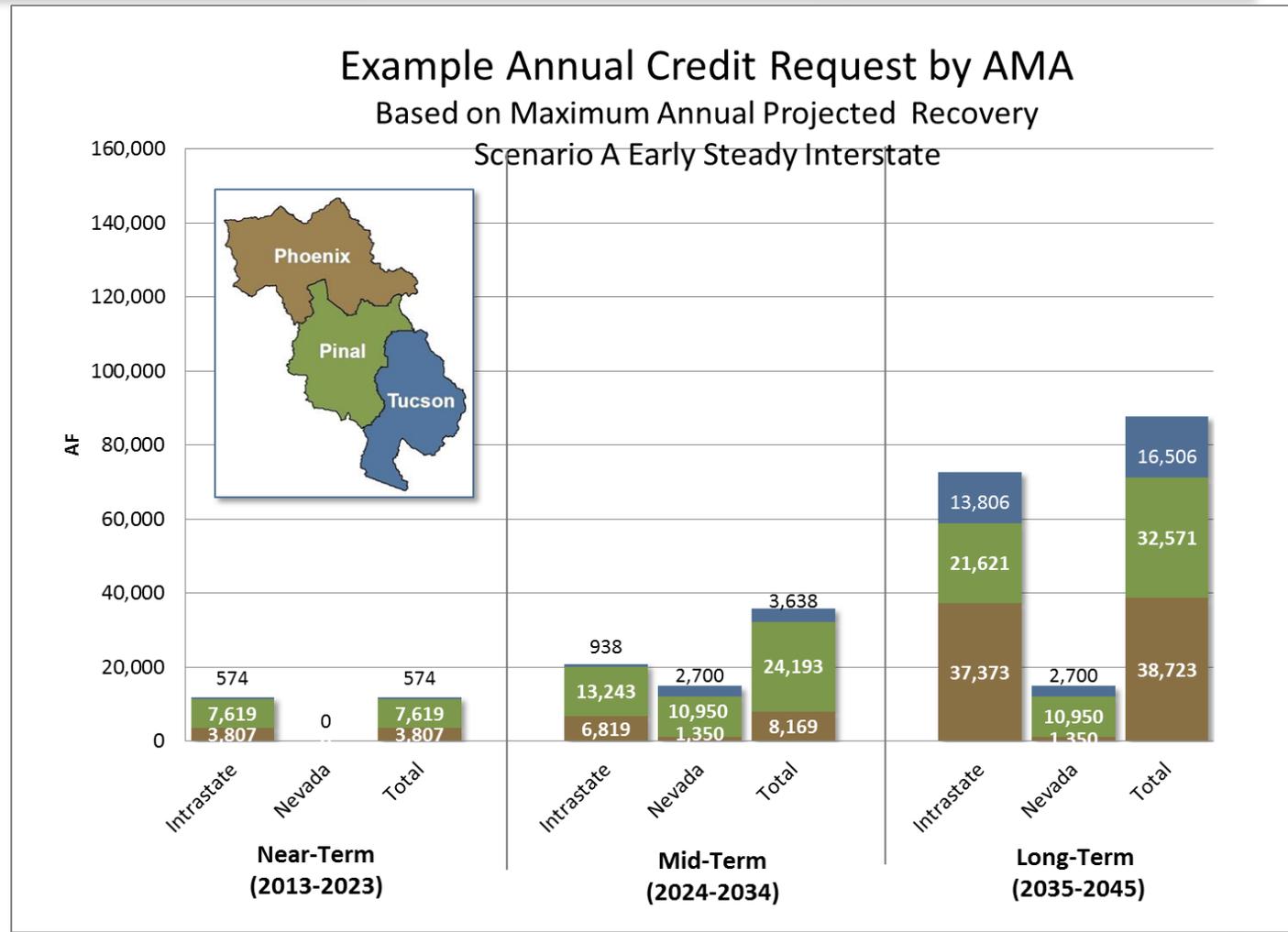
2017 Level 1 Shortage



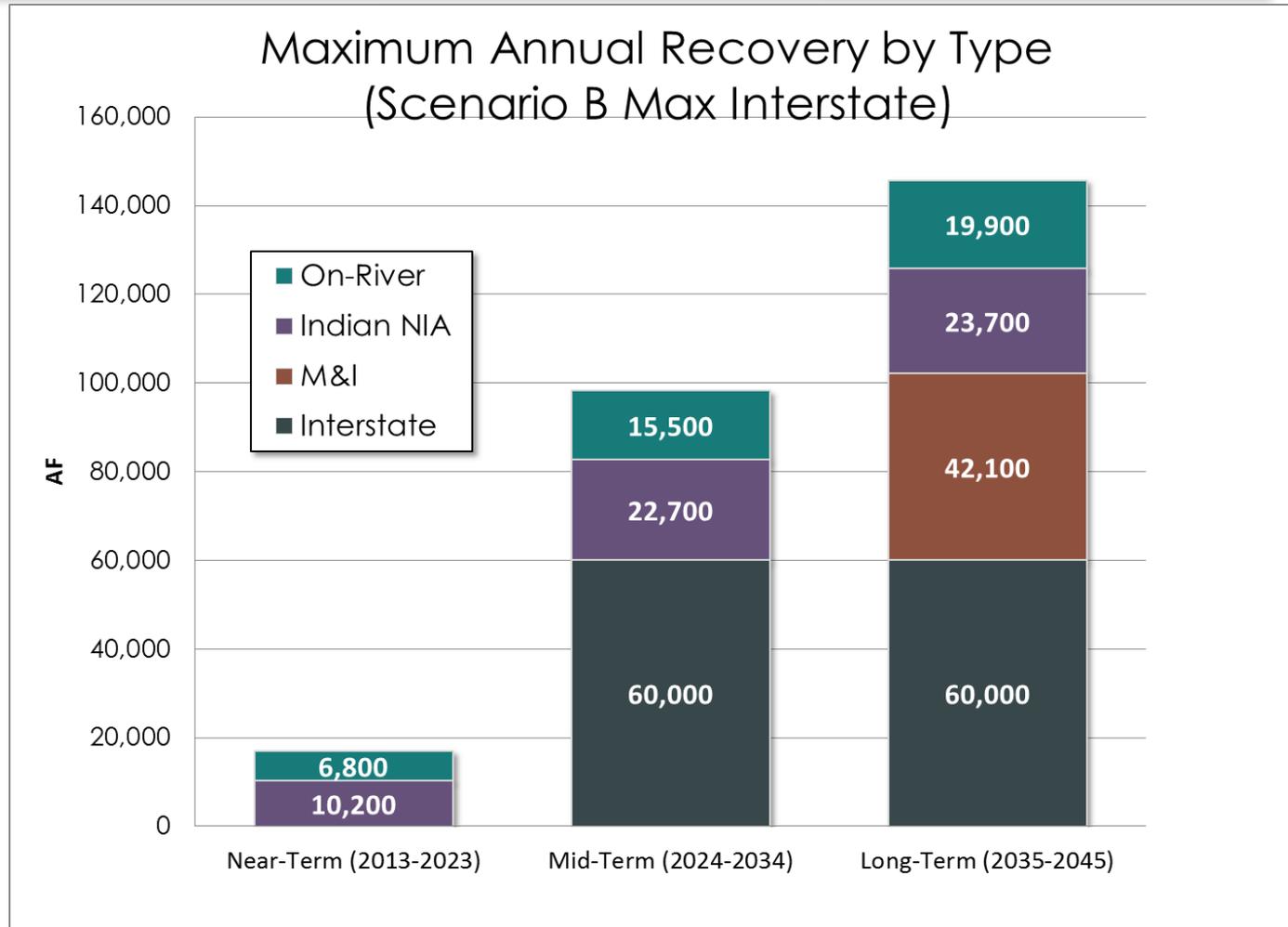
Max Annual Recovery—Scenario A



Max Annual Recovery-Scenario A

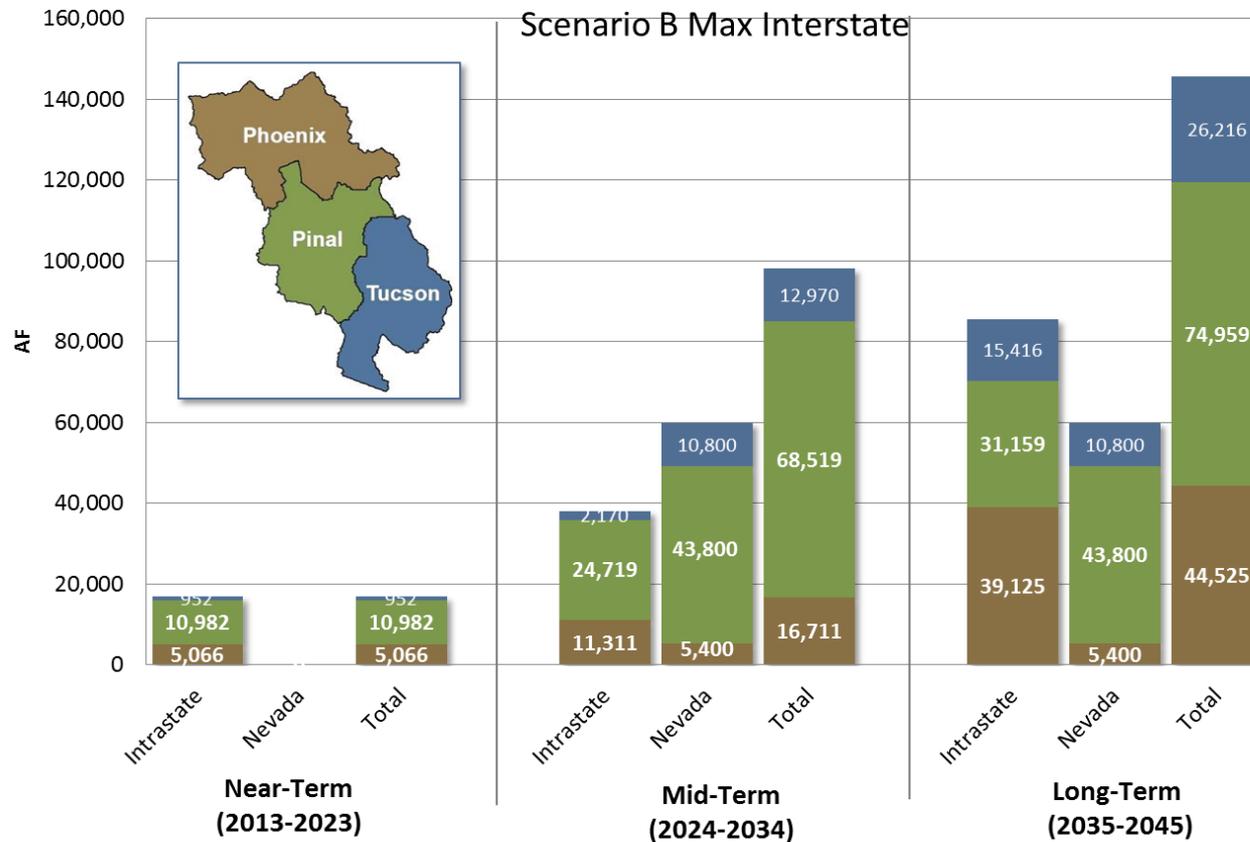


Max Annual Recovery-Scenario B



Scenario B

Example Annual Credit Request by AMA
Based on Maximum Annual Projected Recovery



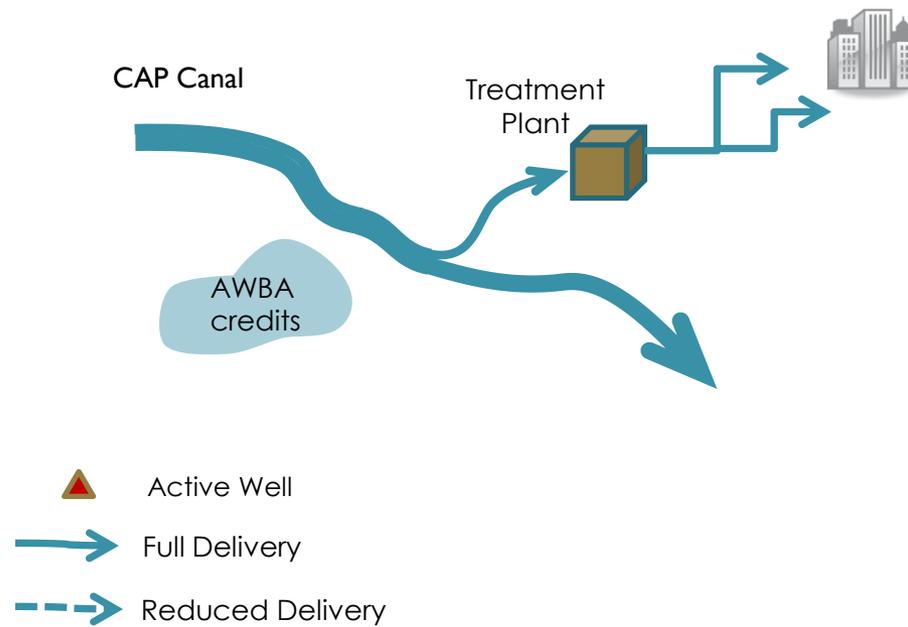
Recovery Partnerships

- Recovery can be accomplished by pumping water directly into the CAP canal, but preferred methods involve voluntary partnerships
- An individual CAP contractor or subcontractor agrees to accept some of their order in the form of previously stored water (credits)
- Recovery partners are compensated

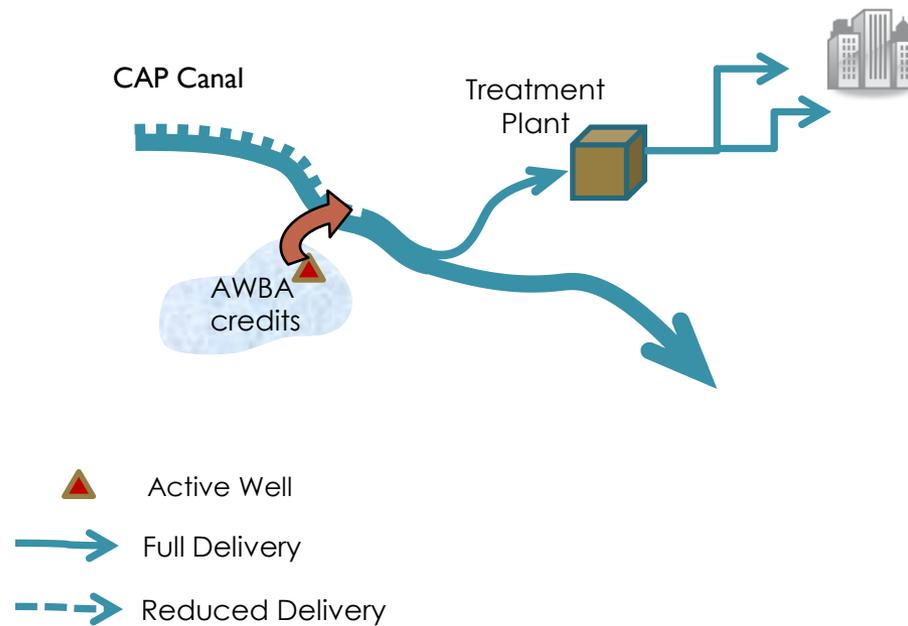
Types of Recovery

- Direct
- Indirect (require partnerships)
- Credit Exchange (require partnerships)

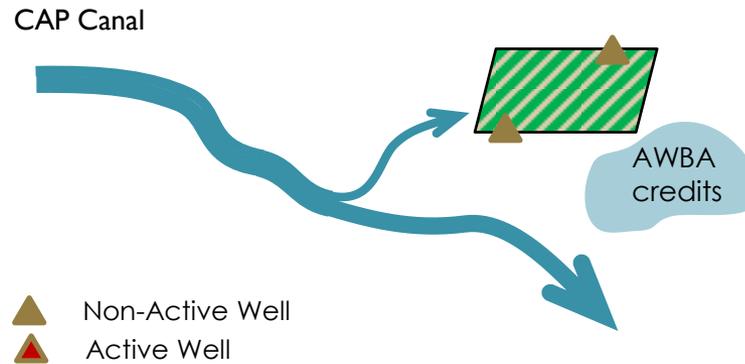
Normal Conditions



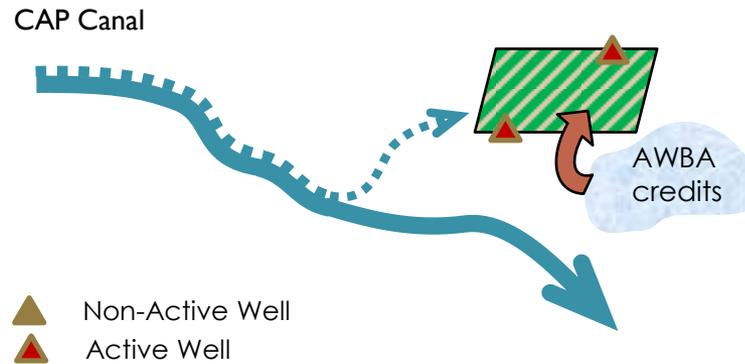
Direct Recovery



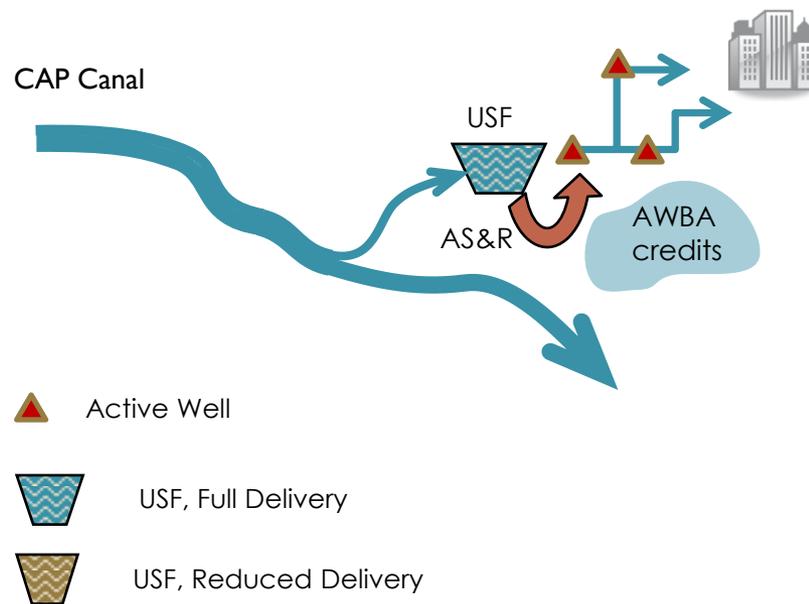
Normal Conditions



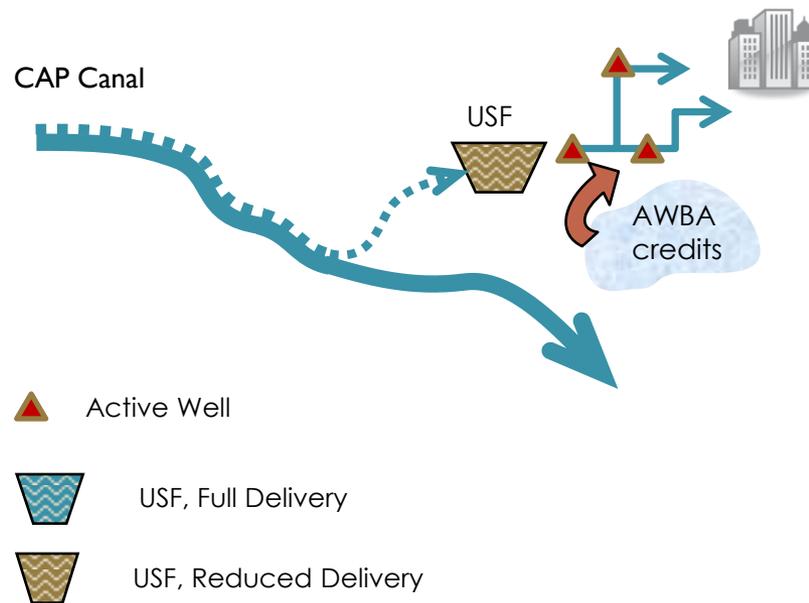
Indirect Recovery, Ag Pool



Normal Conditions



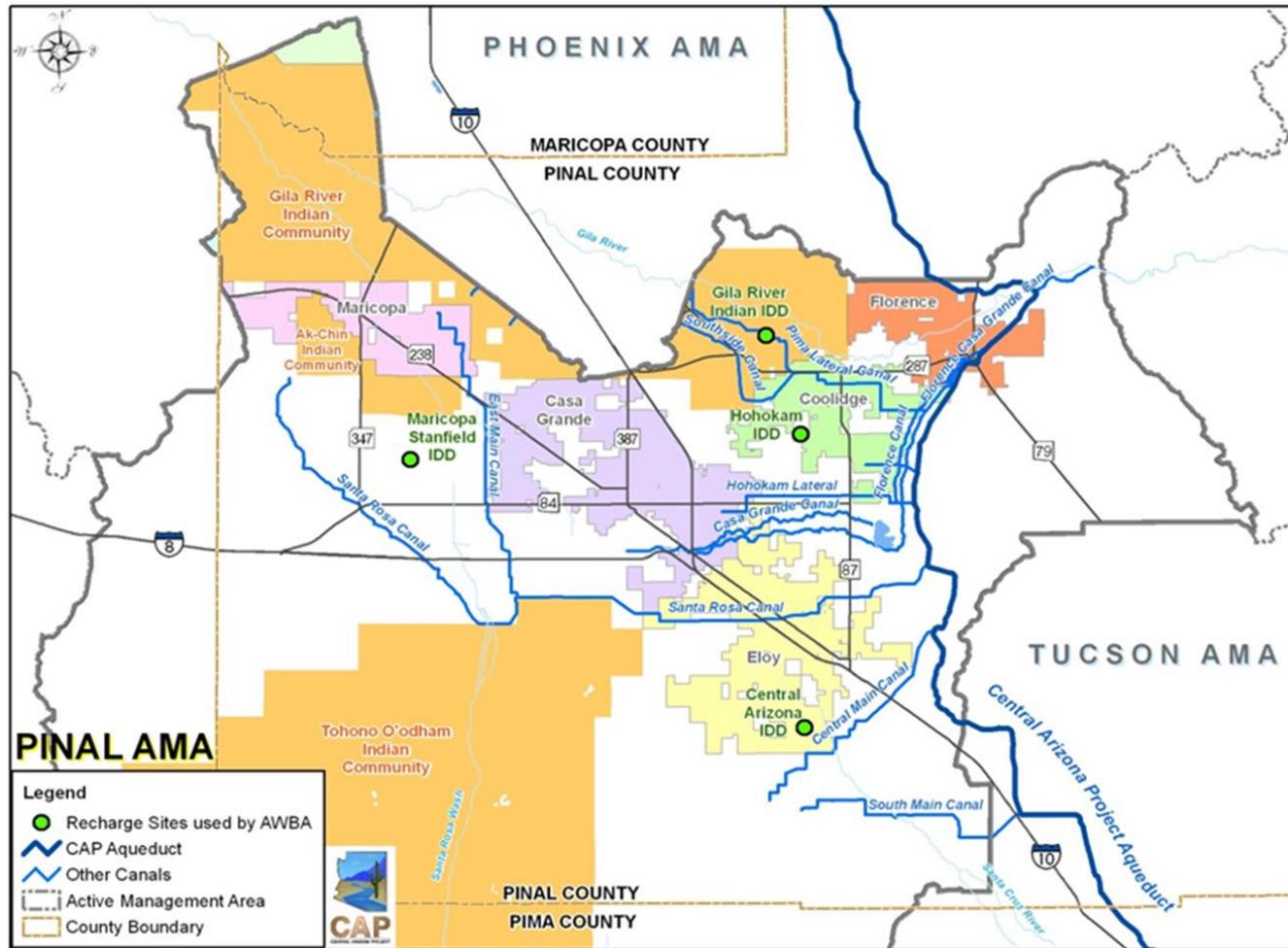
Credit Exchange



Potential Opportunities in Pinal

- Indirect Recovery using Irrigation District wells and the Ag Pool
- Indirect Recovery with subcontractors & contractors using Ag wells and regional conveyance systems (e.g. Santa Rosa Canal)
- Partnering with potential USF developers to create credit exchange opportunities
- Development direct recovery well field(s)

Pinal AMA



Recovery Implementation

- CAP staff are working towards recovery agreements – meeting with interested stakeholders
- Additional technical work
 - Direct recovery studies (pumping into CAP canal)
 - Regional studies

Major Points

- As shortage approaches, water banking & recovery will become more prominent
- AWBA, ADWR and CAP are working to ensure that firming obligations can be met
 - Includes tribal CAP water that the state agreed to firm
- CAP has begun one-on-one meetings with potential partners, and would welcome further discussions with interested parties