

Securing and Protecting Water Rights and Uses in Arizona

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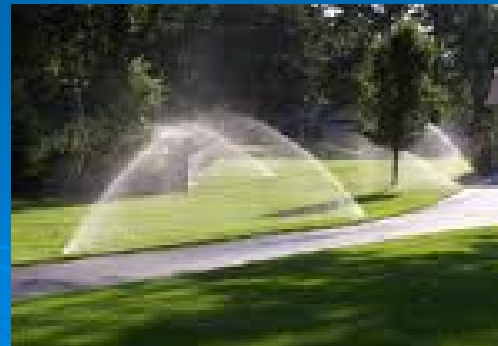
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Arizona is a Desert And a very desirable place to live



Where and How Do We Use Water in Arizona?

- Residential and commercial development – assured water supply.
- Industrial uses
- Agriculture
- Golf courses
- Parks and other public spaces
- Fish, wildlife, natural areas



How Do We Secure the Water We Need?

- To sustain our population and ensure continued opportunities for growth, we need a lot of water.
- How and where can we get that water?
- The answer lies in Arizona's complex system of water rights.



“Neighbors discussing water rights without benefit of watershed planning!”

“Whiskey is for drinking. Water is for fighting over.”

Types of Water Available in Arizona

➤ Four types of water in Arizona:

- In-state surface water
- Groundwater
 - Mainstem uses
 - Central Arizona Project
- Colorado River Water
 - Mainstem uses
 - Central Arizona Project
- Effluent (“Reclaimed Water”).



Basic Principles of Arizona Water Law

- In Arizona, all water is a public resource – not privately owned. Individuals may acquire a right to use water, but they do not own the water directly.
- Surface water is subject to the doctrine of prior appropriation (“first in time, first in right”).
- Groundwater is subject to the doctrine of reasonable use and the Groundwater Code.
- The uncertain boundary between surface water and groundwater is the “subflow zone.”
- Effluent is neither surface water nor groundwater until it is returned to a surface stream or an aquifer.

Water Supply – Units of Measure

- Preferred unit of measure for large volumes of water is the “acre-foot.”
- An acre-foot equals 325,851 gallons.
- Once considered enough for a family of four, now more likely to serve the needs of three, four or five families due to improved conservation.



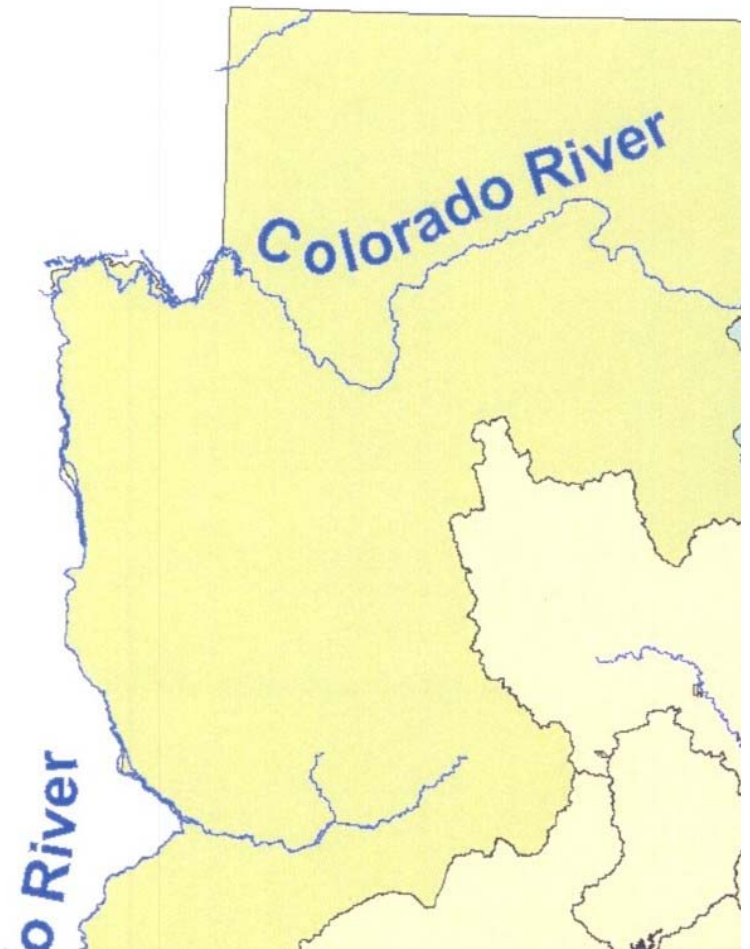
Arizona Water Supply -- Annual Water Budget

Water Source	Million Acre-Feet (maf)	% of Total
SURFACE WATER		
Colorado River	2.8	35.6 %
<i>CAP</i>	1.6	20%
<i>On-River</i>	1.2	16%
In-State Rivers	1.4	17.8%
<i>Salt-Verde</i>	1.0	13%
<i>Gila & others</i>	0.4	5%
GROUNDWATER	2.9	36.8%
RECLAIMED WATER	1.0	9.8%
Total	8.1 maf	

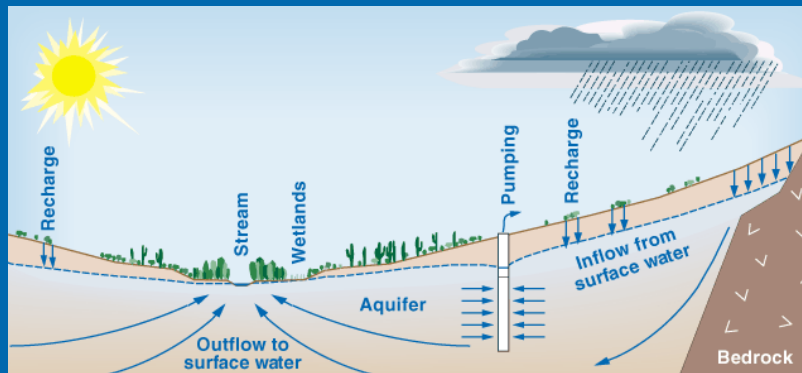
In-State Surface Water

- Includes all water flowing in streams or other natural channels, and lakes, ponds or springs.
- Surface water is subject to “Doctrine of Prior Appropriation.”
 - “First in time, first in right.”
- Once appropriated, surface water becomes “appurtenant” to specific place of use.

ARIZONA STREAM



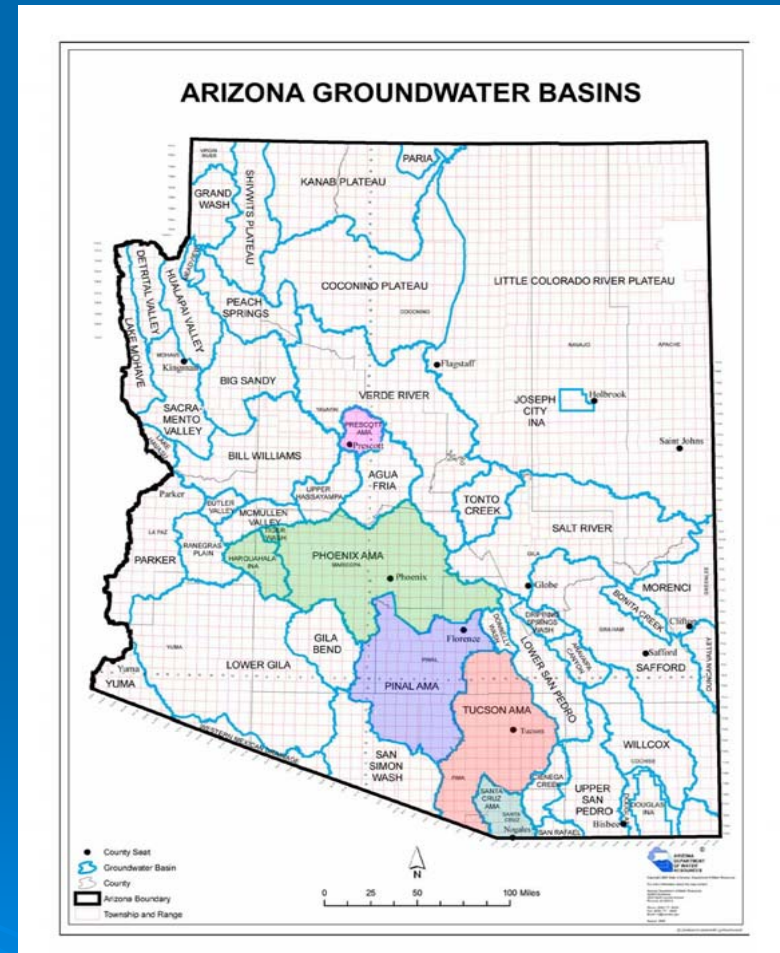
Subflow – Surface Water and Groundwater Interaction



- Subflow is a *legal* concept – no clear lines of demarcation in the real world.
- Subflow concept made necessary by Arizona’s “bifurcated” system of water law.

Groundwater in Arizona

- Groundwater is subject to dramatically different levels of regulation depending on location:
 - In Active Management Areas, restrictive provisions of the Groundwater Code apply.
 - Outside AMAs, “percolating” groundwater is subject to the “Doctrine of Reasonable Use” and transportation restrictions.



Arizona's Groundwater Code

- Most provisions of the Groundwater Code apply only in AMAs.
- Code is generally organized to address:
 - Grandfathered groundwater rights.
 - Service area rights – municipal providers and irrigation districts.
 - Groundwater withdrawal permits.
 - Groundwater management plans and assured water supply.
 - Groundwater transportation.
 - Well construction and regulation.

Groundwater Rights in AMAs

➤ Grandfathered groundwater rights

- Irrigation grandfathered rights:
 - Appurtenant to specific acres.
 - May only be sold or leased with the appurtenant acres.
- Type 1 non-irrigation grandfathered rights:
 - Appurtenant to acres of retired agricultural land.
 - In some cases, water can be used off appurtenant land.
 - Water can be used for any lawful non-irrigation purpose.
- Type 2 non-irrigation grandfathered rights:
 - Not appurtenant to specific lands.
- Extinguishment credits – granted for permanent extinguishment of grandfathered rights.

Groundwater Rights in AMAs

- Type 2 Rights are readily transferable:
 - Can be leased (entire right or partial amount).
 - Can be sold (only entire right).
 - Can be used for any lawful purpose – except rights originally created for electric power generation or mineral processing.
 - Can be withdrawn from any well in an AMA – but for post-Code wells must demonstrate no “unreasonably increasing damage.”
 - Active markets exist in most AMAs. Prices range from \$1,200/AF to \$12,000/AF (Prescott AMA).

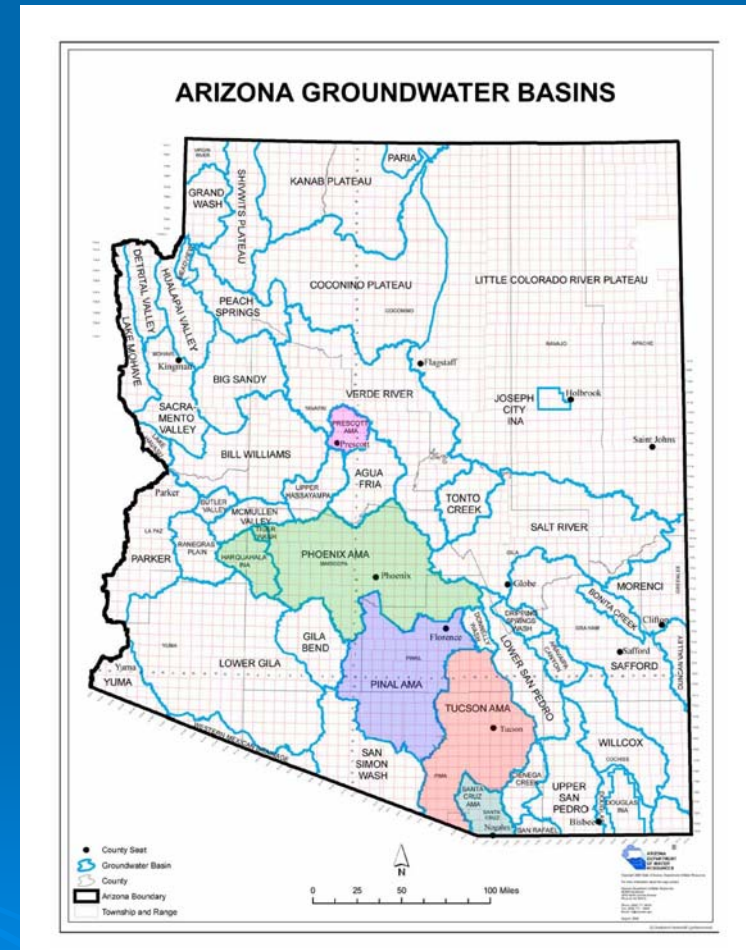
Assured and Adequate Water Supply Programs

- All subdivisions (six or more lots) within an AMA must demonstrate a 100-year assured water supply.
- Adequate Water Supply program applies to subdivisions outside AMAs.
- Water must be shown to be physically, legally and continuously available.
- Subdivisions can either obtain a Certificate of Assured Water Supply (CAWS) or commitment of service from a “Designated” provider.



Groundwater Transportation

- General Rule: transportation allowed within a groundwater basin – no damages.
- Transportation allowed across sub-basins, subject to damage claims.
- No transportation across basin boundaries unless an exception applies.

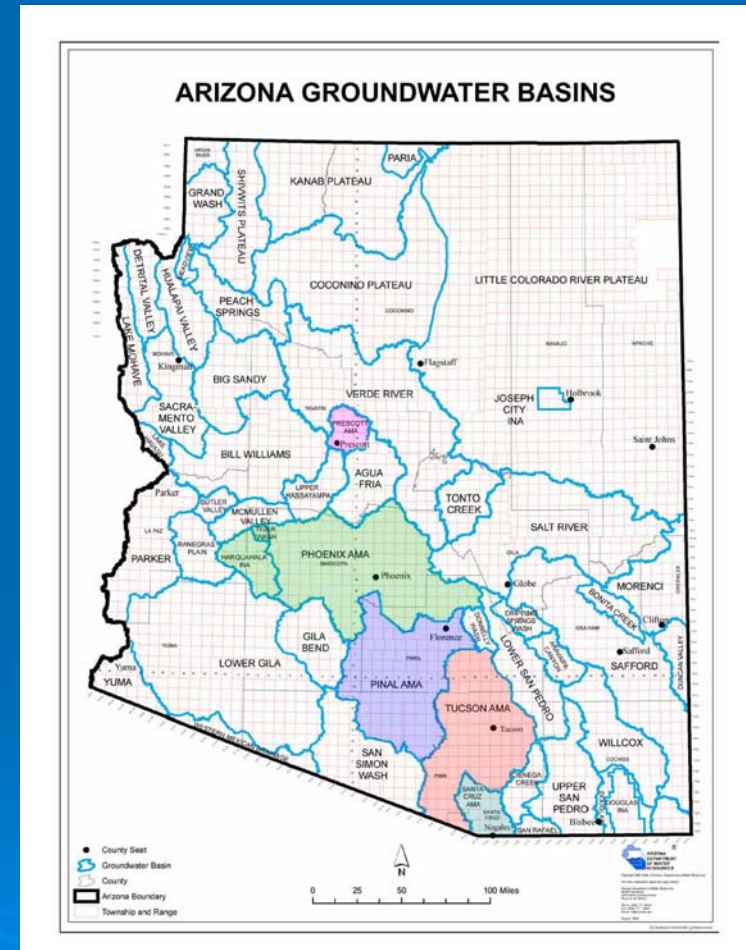


Groundwater Rights Outside AMAs

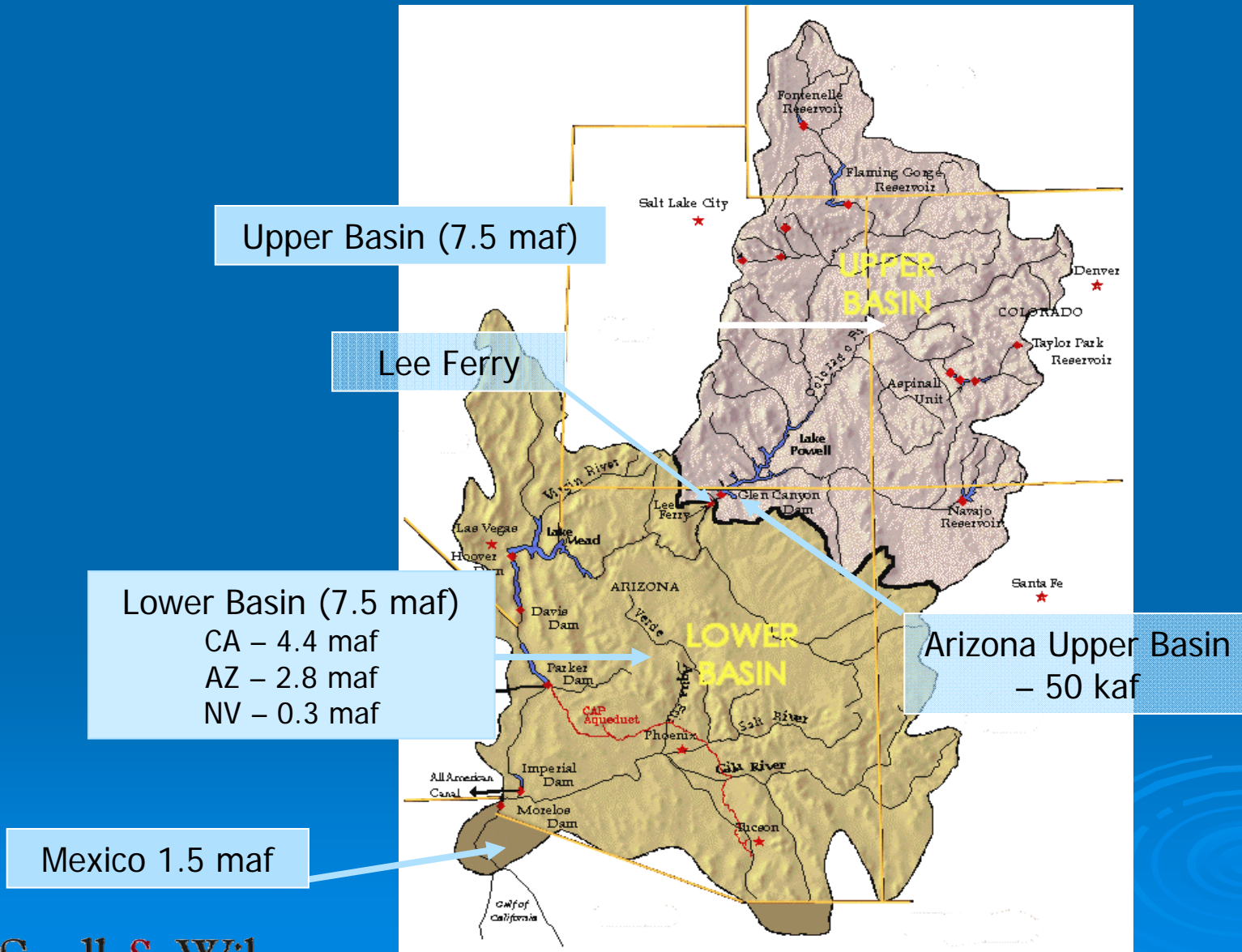
- Doctrine of reasonable use applies, but statutorily broadened by groundwater transportation rules.
- Latest Arizona Supreme Court decision on the subject: *Davis v. Agua Sierra*, 220 Ariz. 108 (2009)
 - Case “involves the potential future use of groundwater that has never been captured and put to reasonable use.”
 - Court described a landowner’s right to access groundwater as “an unvested expectancy insofar as it concerns the potential future use of groundwater that has never been captured or applied.”

Groundwater Importation to AMAs

- General Rule – no transportation of groundwater into an AMA unless a specific exception applies.
- Grandfathered exceptions for municipal “water farms” acquired before the rule was adopted.
- Other exceptions for “historically irrigated acres” in certain basins.



Colorado River Allocations



Colorado River Water Rights

- Arizona is entitled to 2.8 Million AF of Colorado River water – split between mainstem uses (~1.2 MAF) and CAP (~1.6 MAF).
- Water rights are federally administered –
 - subject to the “Law of the River” – a complex compilation of Congressional acts, interstate compacts, court decisions and contracts.
- Must have a contract to use Colorado River water – either with:
 - Bureau of Reclamation, or
 - Sub-contract with CAP.
- Beware of “accounting surface” issues for wells.

Colorado River Priorities

- Colorado River water rights in Arizona have the following priorities:
 - First Priority – “Present Perfected Rights”
 - Second Priority* – Pre-1968 federal reservations of water
 - Third Priority* – Pre-1968 contracts with BOR
 - Fourth Priority – CAP and other post-1968 contracts.
 - Fifth Priority – “Unused entitlement”
 - Sixth Priority – Surplus water

* Second and Third Priorities are co-equal

Colorado River Water Rights

- Mainstem Colorado River water rights are transferrable:
 - Requires approval by Bureau of Reclamation
 - ADWR must be consulted, but does not have formal approval role. A.R.S. § 45-107.
 - ADWR substantive policy statement:
 - Addresses conveyances, assignments and leases.
 - Applicants must provide detailed information for ADWR to evaluate potential harm to other water users.
 - ADWR will not endorse speculative transfers.

Central Arizona Project

- 336 mile canal moves water from Colorado River to Phoenix, Pinal and Tucson areas
- Pumps lift water a total of 2,900 feet from River to Tucson
- Capacity > 1.6 MAF
- Long-term CAP contracts limited to 1.415 MAF



Central Arizona Project Contracts

- CAP allocations are transferrable under some circumstances
 - Must have CAWCD approval.
 - Preference for use within same water service area or at least same AMA.
 - Transferring entity may not profit – prior capital costs reimbursed plus 5% and “cost of money.”



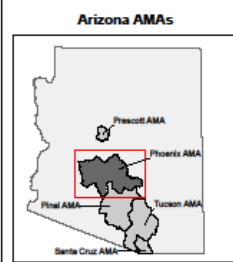
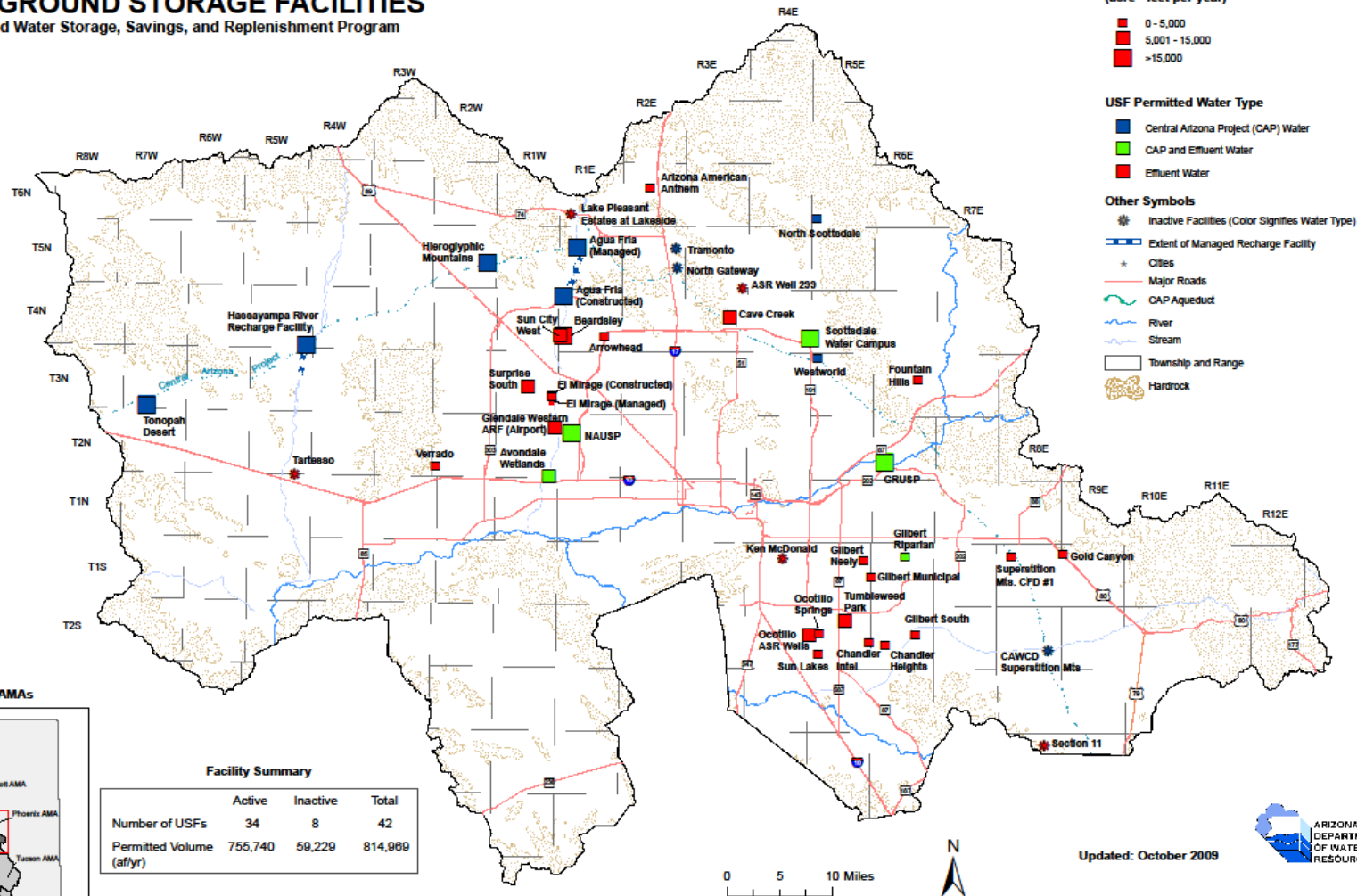
Underground Water Storage

- Underground water storage provides a means to store and protect water supplies for future uses.
- Storage requires permits issued by ADWR:
 - Underground Storage Facility (USF) permits
 - Groundwater Savings Facility (GSF) permits
 - Water Storage permits
 - Recovery Well permits



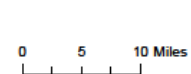
PHOENIX ACTIVE MANAGEMENT AREA UNDERGROUND STORAGE FACILITIES

Underground Water Storage, Savings, and Replenishment Program



Facility Summary

	Active	Inactive	Total
Number of USFs	34	8	42
Permitted Volume (af/yr)	755,740	59,229	814,969



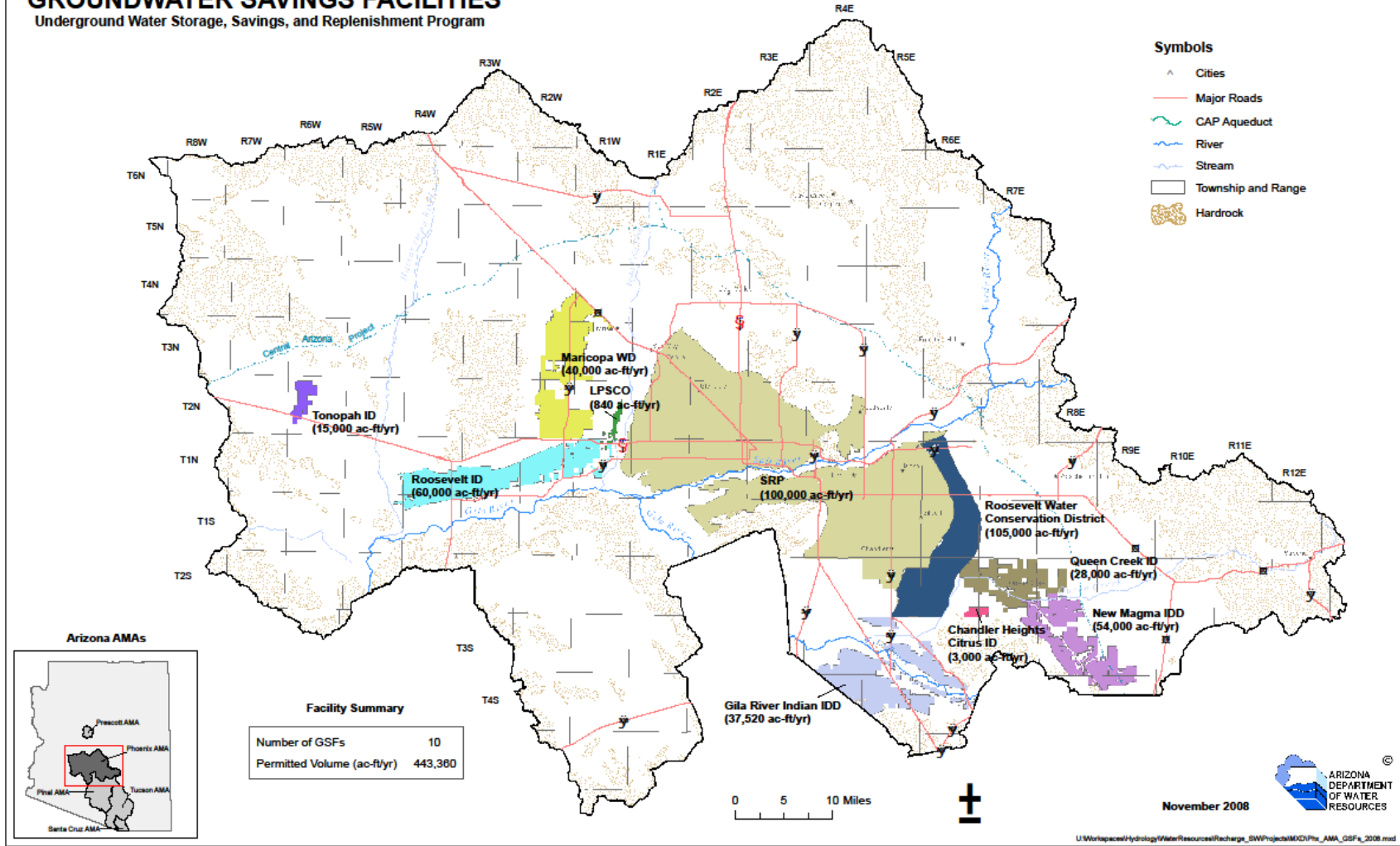
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PHOENIX ACTIVE MANAGEMENT AREA GROUNDWATER SAVINGS FACILITIES

Underground Water Storage, Savings, and Replenishment Program



Long-Term Storage Credits

- Long-term storage credits can be earned for “water that cannot reasonably be used directly.”
 - Usually 95% of water stored, with some exceptions.
- Credits retain their legal character (e.g., CAP water or effluent) even when commingled with groundwater.
- Can be pledged to an assured water supply.
- Can be recovered for later use – sometimes outside the area of “hydrologic influence.”

Central Arizona Groundwater Replenishment District

- CAGRDR was created as an efficient means of satisfying portions of the Assured Water Supply program.
- Enrollment of subdivisions or municipal service areas allows use of mined groundwater – to be “replenished” by CAGRDR.
- CAGRDR must adopt “Plan of Operation” to ensure adequate water will be stored to replenish mined groundwater.
- Concerns regarding:
 - Replenishment at locations far from groundwater pumping.
 - Does CAGRDR lead to inefficient growth?

Effluent

- Effluent – defined as water collected in a sanitary sewer for treatment in a regulated wastewater treatment facility. A.R.S. § 45-101(4).
- Effluent is neither surface water nor groundwater until discharged to a stream or an aquifer. *Arizona Public Service v. John F. Long*.
- Effluent is not owned by cities or towns, but they are free to use or dispose of it as they see fit, subject to potential regulation by the legislature.



Effluent

- Effluent is available for a wide variety of uses:
 - Industrial (e.g., Palo Verde).
 - Golf courses/“turf facilities.”
 - Artificial lakes.
 - Recharge to earn long-term storage credits.
 - Irrigation of non-food crops.
- Effluent supply grows with population.
- “Yuck” factor currently places practical limit on some uses of effluent.



Summary of Water Rights and Uses in Arizona

- Water is a scarce and valuable commodity in Arizona (remember, it's a desert).
- In-state surface water – doctrine of prior appropriation applies.
- Groundwater – doctrine of reasonable use, Groundwater Code, and restrictions on transportation apply.
- Subflow – the uncertain boundary between surface water and groundwater.
- Colorado River Water – federally administered, distributed by State entities (e.g., CAP).
- Effluent – minimal regulation, growing uses.