

Post 2025 AMAs Committee
May 26, 2020

Committee Roadmap



Compile

Generate list
of challenges
Categorize &
Refine



Analyze

Analysis &
deep dive of
priority issues



GWAICC

Present findings
to Council for
review and
buy-in

Solutions/Strategies

With mandate from
GWAICC, develop
solutions/strategies for
identified priority issues

2021

Target December 2020

List of Challenges (so far)

- Exempt Wells
- AMA Data Collection
- Unreplenished Groundwater Pumping
- Aquifer/Sub-basin Groundwater Management
 - Hydrologic Disconnect
- CAGR D
 - Limits for Enrollment
 - Uncertainty of sufficient supplies for future replenishment
- Groundwater Recharge for Streams and Wildlife
- Orphan Water



Issue Briefs

Objective – Succinctly explain the issue to inform that a solution or strategy is needed to address the challenge.

Issue “Brief” – short paper to describe issue to Governor’s Water Council

- Provide an objective overview

- Utilize facts, when possible

- Understandable / Clear information



Issue Briefs

In effort to make progress on Issue Briefs

- Drafted Three Issue Briefs
- Distributed & Received Comments from Committee Members
- 2nd Draft of the Three Issue Briefs
- 5/26 - To review and discuss so these briefs can be finalized



Issue Brief – Hydrologic Disconnect

Issue Statement

The storage and recovery of water supplies in hydrologically disconnected areas within AMAs has the potential to create or worsen localized groundwater depletion.

Similar issues may arise in the context of hydrologically disconnected pumping and replenishment to meet requirements of the Assured Water Supply Program.



Issue Brief – Hydrologic Disconnect

Background

- Overview of the regulatory framework for:
 - Recharge and recovery
 - Pumping and replenishment
- Provides flexibility for water users to encourage use of renewables and meet AWS requirements
- Recovery/Replenishment does not have to be hydrologically connected to the area where water is stored/pumped



Issue Brief – Hydrologic Disconnect

Potential consequences

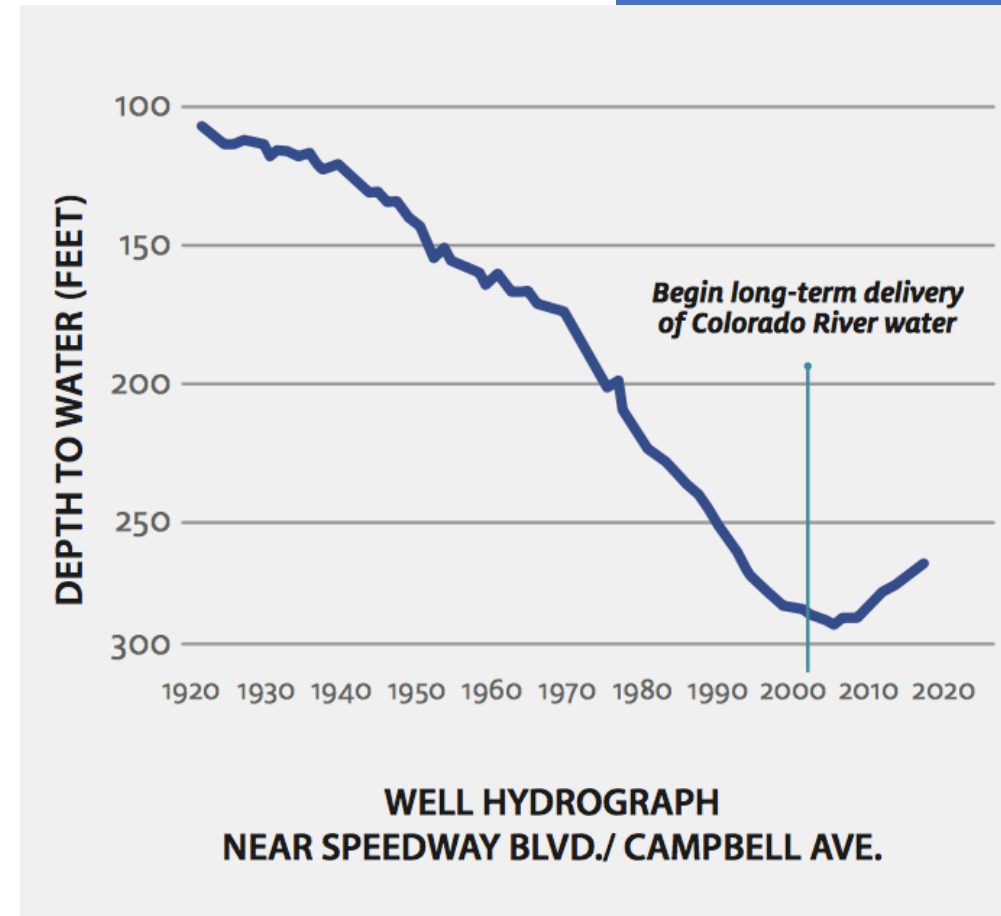
- Can drive localized groundwater depletion and associated negative impacts
- Imbalances in areas where groundwater is declining and other areas where groundwater levels are problematically rising
- Positive scenarios – e.g., recharging in a cone of depression & recovering in a waterlogged area



Issue Brief – Hydrologic Disconnect

Example of Hydrologic Disconnect Mitigation

- Groundwater levels in central Tucson have significantly recovered after pumping was shifted to the area of CAP water storage
- Subsidence rates have also measurably decreased



Issue Brief – Hydrologic Disconnect

Existing Policies & Efforts to address the Issue

- Existing regulatory framework and programs include:
 - ADWR well spacing and recovery siting requirements
 - AWS Program encourages recovery in AOI
 - CAGR required to replenish in East/West Phoenix AMA when possible

The impacts and circumstances surrounding the Hydrologic Disconnect are variable.

Any suggested solutions will need to be flexible to account for local needs and situations



Issue Brief – Hydrologic Disconnect

Discussion

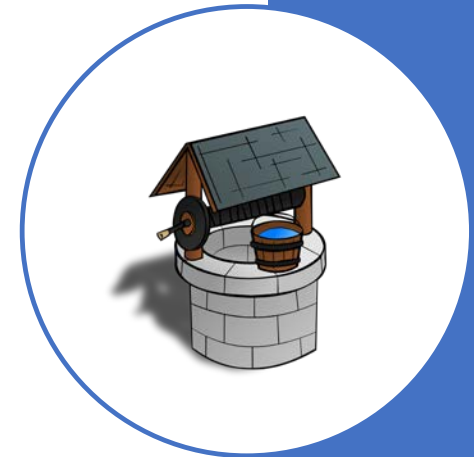
- Are there substantive points that have not been included?
- Does this brief provide enough of a foundation of understanding on the Issue so we can begin the next step to explore what actions we may want to propose?



Issue Brief 2nd Draft – Exempt Wells

Issue Statement

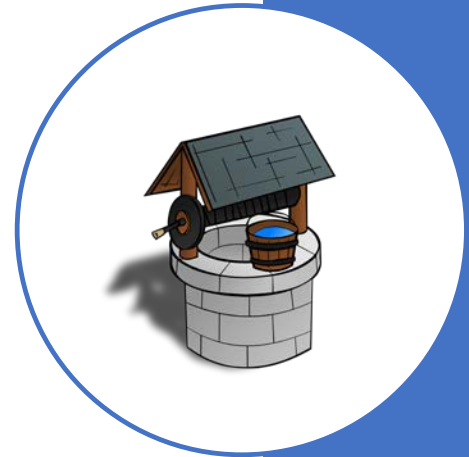
Exempt wells may disproportionately contribute to groundwater overdraft in the Prescott Active Management Area (AMA), placing aquifers in that AMA at greater risk for long-term viability.



Issue Brief 2nd Draft – Exempt Wells

Background

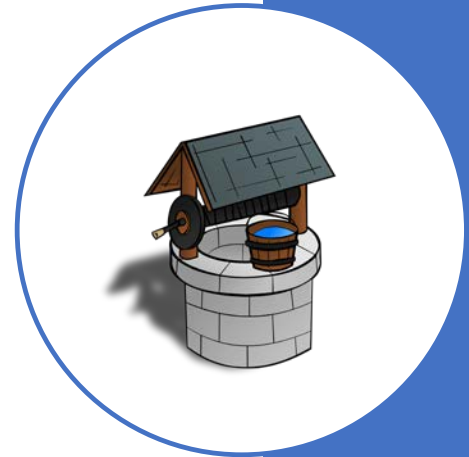
- Wells pumping 35 gallons per minute or less to serve non-irrigation uses are generally exempt from groundwater regulations, including metering, water use reporting and water conservation requirements.
- Exempt well owners are not required to demonstrate physical or legal availability of the groundwater supply.
- Exempt wells are not subject to ADWR's well spacing rules, though their location may have an impact on the siting of non-exempt wells.



Issue Brief 2nd Draft – Exempt Wells

Background – Prescott AMA

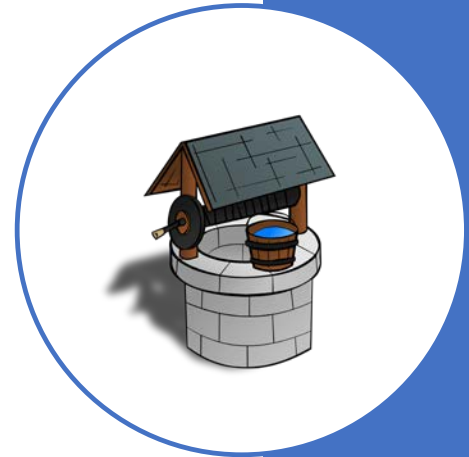
- Currently over 12,900 exempt wells in the Prescott AMA, serving over 25,000 people.
 - Prescott AMA contains 30% of the exempt wells in all five AMAs but represents only 3% of all AMA land area
- ADWR estimates ~2,500 AF of exempt well withdrawals each year based on the number of people in the AMA that are not served by municipal water providers.
- Potential pumping capacity of Prescott AMA exempt wells is over 150,000 acre-feet per year.



Issue Brief 2nd Draft – Exempt Wells

Issues

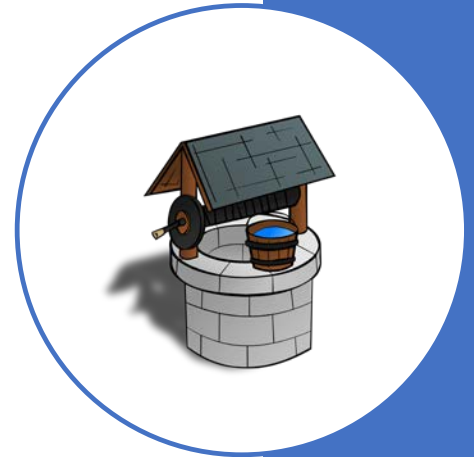
- Exempt wells do not provide any assurance of a long-term water supply.
- Could impact the ability to meet AMA management goal of safe-yield.
- Exempt wells are afforded protections from the spacing requirements placed on other wells, yet they remain unregulated.



Issue Brief 2nd Draft – Exempt Wells

Discussion

- Are there substantive points that have not been included?
- Does this brief provide enough of a foundation of understanding on the Issue so we can begin the next step to explore what actions we may want to propose?



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

Issue Statement

In Arizona's active management areas (AMAs), unreplenished groundwater withdrawals by all water-using sectors, combined with a lack of sufficient incentives to either reduce withdrawals or mitigate the impacts, may limit the State's ability to meet the AMA long-term groundwater management goals.



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

Definition

Unreplenished groundwater withdrawals refer to groundwater that is legally withdrawn **without requirement or obligation** to artificially replenish or replace that volume of water back.



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

Agricultural Sector –

- Irrigation Grandfathered Groundwater Rights (IGFRs)
 - Including GSF water utilization

Industrial Sector –

- General industrial use permits
- Type 1 and Type 2 non-irrigation GFRs



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

Municipal Sector –

- Pre-1995 Subdivisions
- Groundwater Allowance
- Extinguishment Credits
 - From IGFRs, Type 1 or Type 2 non-irrigation GFRs
- Exempt Wells
- Remediated Groundwater



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

	Active Management Area				
Sector and Type	Prescott	Phoenix	Pinal	Tucson	Santa Cruz
GROUNDWATER DEMAND					
5-Year Average (2012-2016)					
Agricultural Sector	1,939	623,307	611,059	101,784	10,134
Groundwater	1,939	350,586	422,694	76,666	10,134
GSF Accounting	-	179,935	124,841	24,909	-
Tribal	-	92,786	63,524	209	-
Municipal Sector	12,970	226,061	30,996	36,345	6,448
Large Designated Providers	4,584	54,040	9,671	12,290	3,121
Large Undesignated Providers	5,098	89,468	16,290	16,560	2,845
Small Providers	1,062	3,688	1,521	4,046	313
Large Untreated Providers/Urban Irrigation	-	68,690	21	-	-
Domestic Exempt Well Demand	2,227	10,175	3,494	3,450	170
Industrial Sector	1,592	107,024	18,273	57,107	1,161
Sand & Gravel	316	11,311	570	3,855	150
Mining	-	30	-	35,995	-
Turf	976	58,972	4,016	10,773	886
Electric Power	-	11,617	-	1,591	-
Dairy	-	11,216	9,414	131	-
Cattle Feedlots	-	85	1,755	-	-
Other	300	13,793	2,518	4,762	125
TOTAL All Sectors	16,501	956,392	660,329	195,236	17,743



Issue Brief – Unreplenished Groundwater Withdrawal

	Active Management Area				
Sector and Type	Prescott	Phoenix	Pinal	Tucson	Santa Cruz
OFFSETS TO GROUNDWATER DEMAND					
Agricultural Sector					
Incidental Recharge	1,419	467,183	250,668	22,036	2,375
Municipal Sector					
Replenishment (CAGR)	-	35,942	394	2,796	-
Incidental Recharge	-	67,968	1,461	6,401	-
Industrial Sector					
Incidental Recharge	238	9,149	786	5,322	148
TOTAL All Sectors	1,657	580,241	253,308	36,555	2,524
UNREPLENISHED GROUNDWATER DEMAND*					
Agricultural Sector	520	156,125	360,391	79,748	7,758
Municipal Sector	12,970	122,151	29,142	27,148	6,448
Industrial Sector	1,354	97,875	17,487	51,785	1,013
TOTAL All Sectors	14,844	376,150	407,021	158,681	15,219

*Average Unreplenished Demands are not the same as average Overdraft because they do not include natural recharge components.



Issue Brief 2nd Draft – Unreplenished Groundwater Withdrawal

Discussion

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Next Steps

