

Eloy and Maricopa-  
Stanfield Basin Study



— BUREAU OF —  
RECLAMATION



# Arizona Eloy Maricopa-Stanfield Water Basin Stakeholder Consultation Workshops

May 17th and 18th, 2021

Facilitated by:

Alisa Oyler

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## Workshop Description

<b>When</b>	May 17 and 18   1pm to 4pm Az MT (PST)
<b>Who</b>	Roughly 40 Stakeholders representing federal, county, city and tribal agencies alongside agriculture and other interested parties.
<b>How</b>	Using a combination of Zoom as our videoconferencing host, and Miro as our visual workspace.

The Bureau of Reclamation and Eloy and Maricopa-Stanfield Basin Study Stakeholders (collectively, the EMS Stakeholders) convened these workshops to develop adaptation and mitigation strategies and review those strategy options for feasibility. To achieve these aims the workshop was divided over two days, with largely the same participants attending both. A sign in sheet with the names of the attending participants is available as a separate document.

## Workshop Objectives and Intended Products:

The objectives of the two workshops included:

1. Brainstorm adaptation and mitigation actions to address water challenges, and organize the actions around common strategies.
2. Analyze strategies to inform feasibility, including benefits and risks, challenges to implementation, and assessing which could be pursued individually, and which would require regional collaboration.

The process and product of each day included the following:

- Session 1 process: an initial brainstorm of adaptation and mitigation actions were clustered around common strategies, and those strategies were consolidated into thematic arenas. Participants were invited to choose an arena to work further on the following day.
- Session 1 product: a summary document of 6 strategic arenas that included example adaptation and mitigation strategies within them.
- Session 2 process: small groups worked in parallel to consolidate and refine the proposed strategies within each arena down to 3 to 5. They were then asked to address key questions to inform the feasibility analysis of each strategy.
- Session 2 product: a matrix that provided a feasibility analysis for each strategy within each arena. Analysis included benefits, risks and challenges of each strategy, along with recommendations for local and/or regional implementation.

## Overview of Process and Facilitation

The aim of the workshop process was to invite broad participation, and engage each individual present in sharing and shaping the ideas being proposed. The use of a highly visual virtual platform allowed for all ideas to be documented live, and for participants to see emergent themes shared amongst the ideas and name them live. Discussions were also held in breakout groups with professional facilitators present to ensure engagement of every voice. To support engagement, facilitators shared their screen and scribed ideas live into the visual workspace, so the participants' contributions could be reported out to the whole group and inform the discussion of alignments.

- Lead facilitators: Alisa Oyler and Oscar Wolters-Duran acted alternately as facilitator and virtual workspace producer during the plenary sessions over the two days.
- For the breakout rooms, a team of 4 additional professional facilitators was recruited to support the conversations. These included Courtney Lonergan, Shelby Pierce, Eileen Pippens and Rachael Swanson. These facilitators were responsible for leading the conversations in the breakout rooms and ensuring that key insights were captured and scribed into the Miro Board.

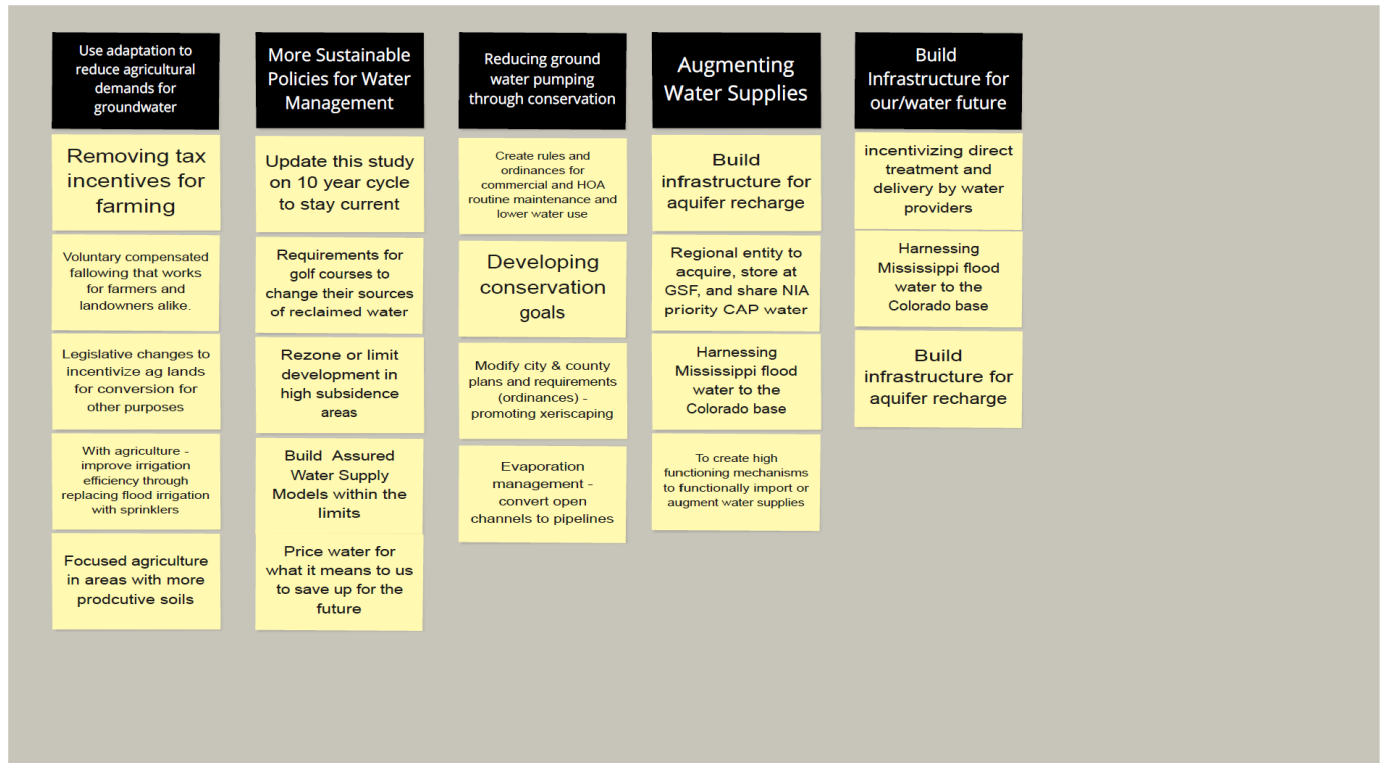
## Session 1: Brainstorm of Actions & Identification of Strategies

During Session 1, the aim was to brainstorm actions and align around strategic arenas. However, before this could be done the participants were given an overview of the EMS Basin Study by the EMS Team and then invited to share their own hopes for the two sessions. Following that, the EMS Team shared some informative context regarding the water challenges being faced in the region, and identified key themes to address during the session. They also shared examples of adaptation and mitigation strategies that could be pursued. This set the stage for stakeholders to address the question: *"What specific actions can we take to adapt or mitigate water challenges in our region?"*

Participants were invited to first brainstorm actions individually, and given quiet time to do so. They were then asked to choose their top three ideas and take those to a small group. Five small groups were formed, with participants randomly mixed. The small groups shared their ideas, the facilitator scribed those into the Miro Board, and the group clustered them around common strategies. The product of that work is below.

## Group 1 – Nathan M., Jake, Tom, Fred S. Anthony S.

*What specific actions can we take to adapt or mitigate water challenges in our region?*



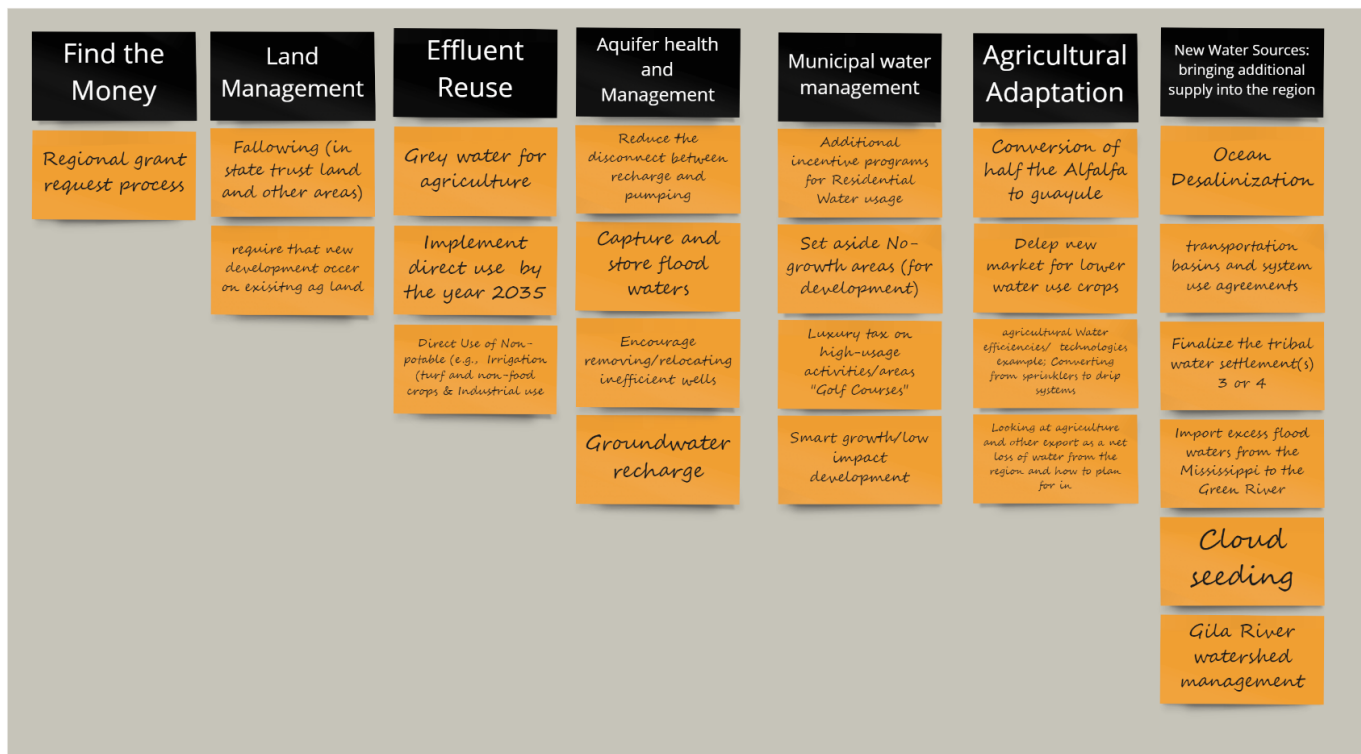
## Group 2- Terri Sue Rossi, Abe Springer, Deborah Tosline, Brad Hill, Lonnie Frost, Darrell Wilson

*What specific actions can we take to adapt or mitigate water challenges in our region?*



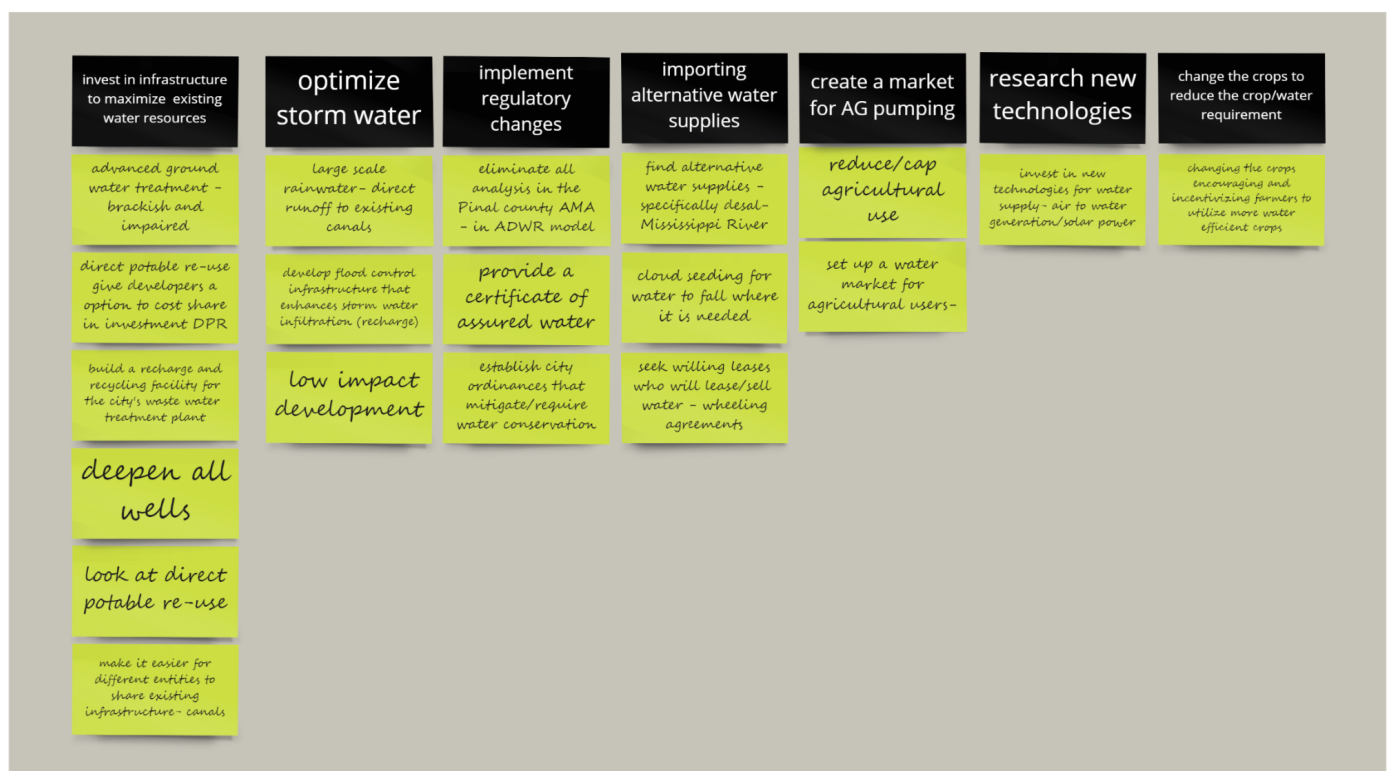
## Group 3 – Rachael, Austin, Mitch, Aaron, Theresa, John, Heide

*What specific actions can we take to adapt or mitigate water challenges in our region?*



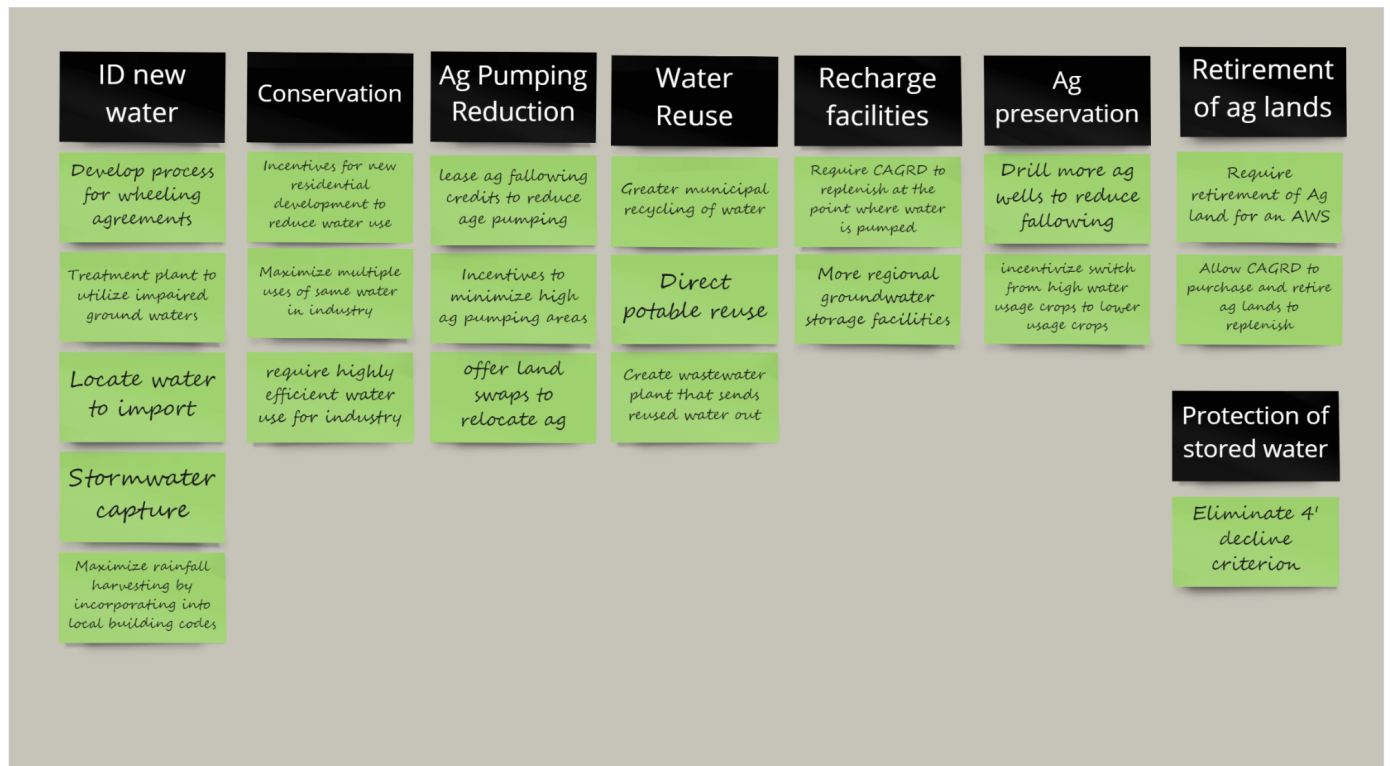
## Group 4 – Craig, Keith, Kevin, Juliet, Shaina

*What specific actions can we take to adapt or mitigate water challenges in our region?*



## Group 5 – Ben Paras, George Fletcher, Ken Seasholes, Valerie Swick

*What specific actions can we take to adapt or mitigate water challenges in our region?*

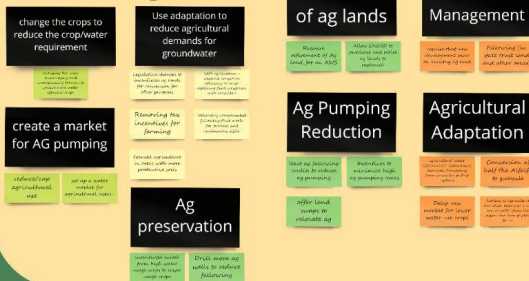


## Session 1: Alignment around Strategic Arena

After each small group completed their identification of strategies, they were invited back into the plenary, where their facilitators brought their product. The strategies were then presented, clarified, and clustered by participants according to strategies that shared a similar intent. The following 6 arenas were identified by the participants as representing alignments among the groups. Participants were then invited to indicate which arena they would like to work on refining in the following day's session.

### STRATEGIC ARENAS: Alignments in our strategies.

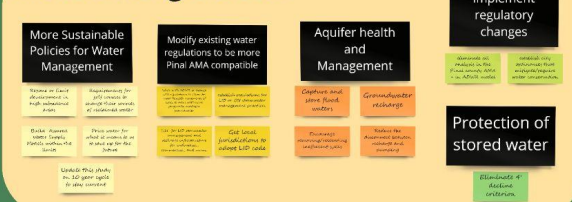
#### Arena A: Agriculture



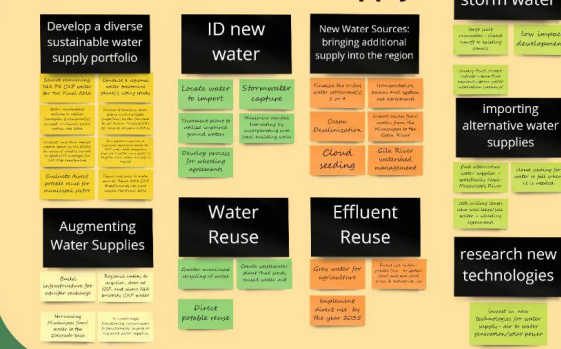
#### Arena C: Conservation



#### Arena D: Regulations



#### Arena B: Diverse Water Supply



#### Arena E: Infrastructure



#### Arena F: Funding



These arenas were formed from identifying the shared intent among the strategies proposed by the small groups. The arenas were formed around shared themes. Participants then signed up to work on refining these arenas further.

## Session 2: Refinement of Strategies in Small Groups

During the second session, one or two new participants joined but the group was largely made up of participants who attended the prior day. Returning participants began the session by sharing their own highlights from the day prior with new participants. Everyone then went into breakout rooms organized by Strategic Arena. Following Session 1, the six strategic arenas were consolidated by the EMS Design Team down to 4 breakout rooms, where two groups addressed two arenas each. The groups were tasked initially with simply consolidating the strategies that came out of the initial brainstorm down to 3 to 5 within the arena

(s). They then described those strategies with more specificity to better reflect the insights of the brainstorm overall. These strategies were then shared with the larger group who asked questions of clarity and made suggestions for additions or refinements.

## Session 2: Feasibility Analysis of Strategies

Participants then went back into their breakout groups to work further on the strategies and fill in the matrices rendered below. These matrices included the following questions to be addressed for each strategy:

Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
Consider social, cultural and environmental, as well as organizations and people.	Consider social, cultural and environmental, as well as organizations and people.	Consider regulatory, legal, policy, and operational constraints	Consider efforts like injection wells compared to regional efforts like a GSF or wheeling water through canals	Consider things like cost effectiveness? Existing resources to support? Political will? How you would rank as a priority? Anything else...

### Group A: Agriculture

#### Arena A Agriculture

**STEP ONE: REFINEMENT STRATEGIES**

- Read through all the strategies (black stickers). Consolidate and agree on 3 to 5 key strategies you would promote / support. (Try to reflect a diversity of the ideas listed in the arena in your chosen strategies.)
- Write one strategy in each row of the table provided. Be as specific as possible (include action + description + context). i.e., Develop small, targeted recharge projects that allow for recovery of water within the area of hydrologic impact. i.e., Change ground water supply rules to allow additional groundwater pumping.

**STEP TWO: SELECT EXAMPLE ACTIONS**

- After you add your 3 to 5 strategies, look back through the brainstormed actions (colored stickers) to agree on 1 to 3 sample actions to elaborate, as illustrative examples of each strategy. Be specific. (Example action: Adjust maximum 100-year depth-to-water levels for withdrawing groundwater from 1,000 to 900 feet below land surface in the Phoenix AMA).



Group members: Ben Paros, Bryan Hartman, Heide Kocsis, Ken Seaholes, Mitch Bassefsky, Tony Smith, Tony Solano, Tom Harbour

Strategy name / description. (Could include some illustrative actions to help describe it)	Describe the benefits of successful implementation (who would benefit and how?)	Describe the risks and negative impacts of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
Encourage development on Ag land	...	...	...	...	...
Preserve Ag economy	...	...	...	...	...
Reduce ag pumping through following incentives	...	...	...	...	...

ROUND 2 INSTRUCTIONS: Use stickers provided to answer the questions at the top of the table for each of the strategies below. Consider dividing up the strategies among the group members to do some individual thinking about for the first 5 minutes.

### Group B: Diverse Water Supply

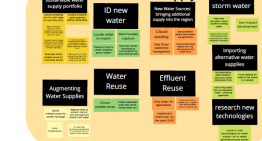
#### Arena B Diverse Water Supply

**STEP ONE: REFINEMENT STRATEGIES**

- Read through all the strategies (black stickers). Consolidate and agree on 3 to 5 key strategies you would promote / support. (Try to reflect a diversity of the ideas listed in the arena in your chosen strategies.)
- Write one strategy in each row of the table provided. Be as specific as possible (include action + description + context). i.e., Develop small, targeted recharge projects that allow for recovery of water within the area of hydrologic impact. i.e., Change ground water supply rules to allow additional groundwater pumping.

**STEP TWO: SELECT EXAMPLE ACTIONS**

- After you add your 3 to 5 strategies, look back through the brainstormed actions (colored stickers) to agree on 1 to 3 sample actions to elaborate, as illustrative examples of each strategy. Be specific. (Example action: Adjust maximum 100-year depth-to-water levels for withdrawing groundwater from 1,000 to 900 feet below land surface in the Phoenix AMA).



Group members: Ben Paros, Bryan Hartman, Heide Kocsis, Ken Seaholes, Mitch Bassefsky, Tony Smith, Tony Solano, Tom Harbour

Strategy name / description. (Could include some illustrative actions to help describe it)	Describe the benefits of successful implementation (who would benefit and how?)	Describe the risks and negative impacts of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
Optimize storm water	...	...	...	...	...
Water reuse	...	...	...	...	...
Effluent reuse	...	...	...	...	...
Research new technologies	...	...	...	...	...

ROUND 2 INSTRUCTIONS: Use stickers provided to answer the questions at the top of the table for each of the strategies below. Consider dividing up the strategies among the group members to do some individual thinking about for the first 5 minutes.

### Group C & D: Conservation & Regulations

#### Arenas C & D Conservation and Regulations

**INSTRUCTIONS TO REFINEMENT STRATEGIES**

- Read through all the strategies (black stickers). Consolidate and agree on 3 to 5 key strategies you would promote / support. (Try to reflect a diversity of the ideas listed in the arena in your chosen strategies.)
- Write one strategy in each row of the table provided. Be as specific as possible (include action + description + context). i.e., Develop small, targeted recharge projects that allow for recovery of water within the area of hydrologic impact. i.e., Change ground water supply rules to allow additional groundwater pumping.

**STEP TWO: SELECT EXAMPLE ACTIONS**

- After you add your 3 to 5 strategies, look back through the brainstormed actions (colored stickers) to agree on 1 to 3 sample actions to elaborate, as illustrative examples of each strategy. Be specific. (Example action: Adjust maximum 100-year depth-to-water levels for withdrawing groundwater from 1,000 to 900 feet below land surface in the Phoenix AMA).



Group members: Ben Paros, Bryan Hartman, Heide Kocsis, Ken Seaholes, Mitch Bassefsky, Tony Smith, Tony Solano, Tom Harbour

Strategy name / description. (Could include some illustrative actions to help describe it)	Describe the benefits of successful implementation (who would benefit and how?)	Describe the risks and negative impacts of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
Municipal water management	...	...	...	...	...
Conservation	...	...	...	...	...
Regulate groundwater pumping	...	...	...	...	...

ROUND 2 INSTRUCTIONS: Use stickers provided to answer the questions at the top of the table for each of the strategies below. Consider dividing up the strategies among the group members to do some individual thinking about for the first 5 minutes.

### Group E & F: Infrastructure & Funding

#### Arenas E & F Infrastructure and Funding

**INSTRUCTIONS TO REFINEMENT STRATEGIES**

- Read through all the strategies (black stickers). Consolidate and agree on 3 to 5 key strategies you would promote / support. (Try to reflect a diversity of the ideas listed in the arena in your chosen strategies.)
- Write one strategy in each row of the table provided. Be as specific as possible (include action + description + context). i.e., Develop small, targeted recharge projects that allow for recovery of water within the area of hydrologic impact. i.e., Change ground water supply rules to allow additional groundwater pumping.

**STEP TWO: SELECT EXAMPLE ACTIONS**

- After you add your 3 to 5 strategies, look back through the brainstormed actions (colored stickers) to agree on 1 to 3 sample actions to elaborate, as illustrative examples of each strategy. Be specific. (Example action: Adjust maximum 100-year depth-to-water levels for withdrawing groundwater from 1,000 to 900 feet below land surface in the Phoenix AMA).



Group members: Ben Paros, Bryan Hartman, Heide Kocsis, Ken Seaholes, Mitch Bassefsky, Tony Smith, Tony Solano, Tom Harbour

Strategy name / description. (Could include some illustrative actions to help describe it)	Describe the benefits of successful implementation (who would benefit and how?)	Describe the risks and negative impacts of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
Recharge facilities	...	...	...	...	...
Build infrastructure for recharge	...	...	...	...	...
Utilizing existing infrastructure more effectively	...	...	...	...	...

ROUND 2 INSTRUCTIONS: Use stickers provided to answer the questions at the top of the table for each of the strategies below. Consider dividing up the strategies among the group members to do some individual thinking about for the first 5 minutes.

## Feasibility Analysis Matrices

The overall product represents the recommended strategies each team proposed, alongside initial thinking to inform their feasibility. All agreed that this feasibility analysis could have benefitted from more time, as some strategies were cut short. However, the analysis that was provided (see screenshots for the visual workspaces above) is documented in the Matrices that follow. These documents also capture the ‘notes’ that were added to the analysis by other groups during a ‘gallery walk’ that followed the breakout group work.

## Arena A: Analysis of Adaptation and Mitigation Strategies Related to Agriculture

**Participants in this discussion:** Ben Paras, Bryan Hartman, Heide Kocsis, Ken Seasholes, Mitch Basefsky, Tony Smith, Tony Solano, Tom Harbour, Lonnie Frost

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
		Consider social, cultural and environmental, as well as organizations and people.	Consider social, cultural and environmental, as well as organizations and people.	Consider regulatory, legal, policy, and operational constraints	Consider efforts like injection wells compared to regional efforts like a GSF or wheeling water through canals	Consider things like cost effectiveness? Existing resources to support? Political will? How you would rank as a priority? Anything else...
<b>Use conservation and alternative crops to reduce agricultural demands for groundwater</b>	<ul style="list-style-type: none"> <li>• Focused agriculture in areas with more productive soils</li> <li>• With agriculture - improve irrigation efficiency through replacing flood irrigation with sprinklers</li> <li>• Agricultural water efficiencies/technologies. For example;</li> </ul>	<ul style="list-style-type: none"> <li>• Create new markets for the Ag industry</li> <li>• Reduced stress on the aquifer</li> <li>• Cost savings to Ag producer</li> <li>• Extends the viability of agriculture</li> </ul> <p><b>Note:</b> These seem to track from Ag's perspective</p>	<ul style="list-style-type: none"> <li>• Economic disruption, in terms of not having high water crops available locally - i.e. cattle/dairy - those who use feed crop</li> <li>• Stranded investment, i.e. drip H2O</li> <li>• Unemployment/job loss</li> <li>• Air quality - more dust with fallowing</li> </ul>	<ul style="list-style-type: none"> <li>• Funding / capital investment to switch from one crop to another</li> <li>• Possible regulatory hurdles for what can be grown, i.e. hemp</li> <li>• Get Ag groups to buy-in to strategies, i.e. - AFB. Good stakeholder management is necessary as part of the solution</li> </ul>	<ul style="list-style-type: none"> <li>• If creating a new crop, it needs to be regionally to support the economic infrastructure</li> <li>• If creating an irrigation system, that may be more localized</li> <li>• Successful application in Pinal County could result in replication across the West / the World</li> </ul>	<ul style="list-style-type: none"> <li>• If farmers are able to harness technology, it would assist in implementing these strategies.</li> <li>• Technology can help with conserving and not wasting water</li> </ul>

	<p>converting from sprinklers to drip systems</p> <ul style="list-style-type: none"> <li>• Conversion of half the alfalfa to guayule</li> <li>• Look at agriculture and other export as a net loss of water from the region and how to plan for it</li> <li>• Change the crops to encourage and incentivize farmers to utilize more water efficient crops</li> <li>• Develop new market for lower water use crops</li> </ul>		<ul style="list-style-type: none"> <li>• Lack of a market - not having buyers for crop change</li> </ul> <p><b>Note:</b> These are great!</p>	<ul style="list-style-type: none"> <li>• Learning curve for using new systems efficiently</li> <li>• Operational challenges to switch to a more efficient technology, i.e. drip irrigation has limitations depending on the crop you use.</li> <li>• Lack of a market - not having buyers for crop change</li> <li>• Funding for irrigation efficiency projects</li> <li>• Erosion of skill level in going from conservation to alternative <ul style="list-style-type: none"> <li>• Maintaining experienced growers</li> </ul> </li> </ul> <p><b>Note:</b> Pretty comprehensive!</p>	<ul style="list-style-type: none"> <li>• Some can be implemented on a single farm basis</li> <li>• Irrigation districts and regional organizations can help growers streamline the process for funding (local help)</li> <li>• Involve the local universities in this effort</li> <li>• Provide more education / training in the local areas regarding this strategy</li> <li>• Utilize FFA &amp; 4H</li> </ul>	
<b>Encourage development on Ag land</b>	<ul style="list-style-type: none"> <li>• Require that new development occur on existing Ag land</li> </ul>	<ul style="list-style-type: none"> <li>• Would replace crops with lower water users (i.e. homes)</li> </ul>	<ul style="list-style-type: none"> <li>• Generational family farmers</li> <li>• Less Ag recharge</li> </ul>	<ul style="list-style-type: none"> <li>• When to extinguish water rights</li> <li>• Requires political</li> </ul>	<ul style="list-style-type: none"> <li>• Needs to be considered locally, then at the county &amp; at</li> </ul>	<ul style="list-style-type: none"> <li>• To actually implement- you need a willing buyer &amp; willing</li> </ul>

	<ul style="list-style-type: none"> <li>• Legislative changes to incentivize Ag lands for conversation for other purposes</li> <li>• Remove tax incentives for farming</li> <li>• Require retirement of Ag land for an AWS</li> <li>• Allow CAGR to purchase and retire Ag lands to replenish</li> <li>• Reduce / cap agricultural use</li> </ul> <p><b>Note:</b> Great actions!</p>	<ul style="list-style-type: none"> <li>• Allow rebalancing of ADWR hydrological model</li> <li>• Expand the tax base</li> <li>• Environmental benefit by not developing on native desert land.</li> <li>• Financially benefit landowners (ag or districts)</li> </ul> <p><b>Note:</b> Nailed it on the benefits!</p>	<ul style="list-style-type: none"> <li>• Changes the nature of Pinal County over time</li> <li>• Ag related businesses</li> <li>• Congestion with increased population, i.e. pollution</li> <li>• Devaluing desert land</li> </ul>	<p>will to change regulations</p> <ul style="list-style-type: none"> <li>• Takes a substantial amount of time to go from land that is zoned from Ag- 5-10 years for entitlement process</li> <li>• Will need public participation</li> <li>• Requires a lot of infrastructure planning</li> <li>• Challenges on the economy around construction-cycle of supply &amp; demand</li> </ul> <p><b>Note:</b> Hardening your demands, no buffer for shortage</p>	<p>the state level</p> <ul style="list-style-type: none"> <li>• Will involve at least the local governments, if not more.</li> </ul> <p><b>Note:</b> These are good</p>	<p>seller</p> <ul style="list-style-type: none"> <li>• Needs to be in the path of development - for purposes of infrastructure etc</li> </ul>
<b>Preserve Ag economy</b>	<ul style="list-style-type: none"> <li>• Incentivize switch from high water usage crops to lower usage crops</li> <li>• Drill more Ag wells to reduce fallowing</li> <li>• Import water supplies</li> </ul>			<p><b>Note:</b> Please add, "Dust and air quality"</p>		

	<ul style="list-style-type: none"> <li>Restructure surface water (Note: What does this mean?)</li> </ul>					
<p><b>Reduce Ag pumping through fallowing &amp; incentives</b></p> <p><b>Note:</b>  <b>Q:</b> What is the difference between the first and last Strategy?  <b>A:</b> The last strategy is specific to fallowing</p>	<ul style="list-style-type: none"> <li>Cap &amp; trade for Ag pumping</li> <li>Incentives to minimize high Ag pumping areas</li> <li>Lease ag fallowing credits to reduce Ag pumping</li> <li>Maintain Ag tax status for fallowed land</li> <li>Offer land swaps to relocate Ag</li> <li>Voluntary compensated fallowing that works for farmers and landowners alike.</li> <li>Fallowing (in state trust land and other areas)</li> </ul>	<ul style="list-style-type: none"> <li>Can get a lot of bang for your buck in water conservation</li> </ul>	<ul style="list-style-type: none"> <li>Fallowing land can have an impact on agriculture jobs</li> <li>The cost of bringing jobs back into production</li> <li>Impacts the local community.</li> </ul>	<p><b>Note:</b> Please add, "We don't know where we'd get funding"</p>		

## Arena B: Analysis of Adaptation and Mitigation Strategies Related to Diverse Water

## Supply

**Participants in this discussion:** George Fletcher, Fred Schneider Mayor Craig McFarland, Jake Lenderking, Abe Springer, Deborah Tosline

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
<b>Optimize water supplies we already have within the AMA</b>	<ul style="list-style-type: none"> <li>• Build infrastructure for aquifer recharge</li> <li>• Optimize storm water</li> <li>• Greater municipal recycling of water</li> <li>• Effluent reuse and recharge</li> </ul> <p><b>Note:</b> These are similar to new infrastructure strategies in Arena E</p>	<ul style="list-style-type: none"> <li>• Lower operational cost now and in future</li> <li>• Adding water supplies to system benefits hydrologic system for the long run</li> <li>• Quickest to implement and lowest cost</li> <li>• Use our water more efficiently</li> <li>• Reduce the freshwater uptake</li> <li>• stormwater management for land owner to crate cost savings</li> <li>• Stormwater: surface water reuse</li> </ul>	<ul style="list-style-type: none"> <li>• Effluent reuse stigma</li> <li>• Introducing different WQ that could bring negative impacts to hydrologic system, NEPA, expense</li> <li>• Reduced streamflow</li> <li>• Cultural concerns: reclaimed water is not actual water unless it passes through the earth first.</li> <li>• Increasing salt when you reuse over time</li> <li>• <b>Note:</b> Perceived risks to public health</li> <li>• <b>Note:</b> Water quality issues for</li> </ul>	<ul style="list-style-type: none"> <li>• Costs associated will all of these strategies, but Aquifer recharge and miles of pipe</li> <li>• If water gets into a "natural channel", then it becomes a surface water law (water rights) issue.</li> <li>• For more general capture (streets, etc.), hydrocarbon loading can be an issue of who assumes liability for potential contamination. While manageable, it is an issue of who becomes responsible if something "slips"</li> </ul>	<ul style="list-style-type: none"> <li>• Individual and landowner collection of storm water can be done at scale: LID is appropriate for our dry climate</li> <li>• Would have to add infrastructure for many of these actions/strategies: potentially massive</li> <li>• Recharge is the best/most sustainable option for Casa Grande</li> <li>• We think all of these ideas are scalable locally, but regionally it become tricky</li> </ul>	<ul style="list-style-type: none"> <li>• It is all feasible!</li> <li>• On the homeowner level, rainwater harvesting can be a toss up</li> <li>• If water gets into a "natural channel", then it becomes a surface water law (water rights) issue.</li> </ul>

		<ul style="list-style-type: none"> <li>• All users benefit from additional, new, wet water supplies by making supplies more resilient. Decreases vulnerability of existing supplies</li> </ul>	storm water	<p>through.</p> <ul style="list-style-type: none"> <li>• Surface water rights issues</li> <li>• Stormwater: lack of incentives for individual actions? Lack of data available for stormwater collection. Not a lot of rainfall, come infrequently, but it requires large tanks or a place to put the tanks</li> <li>• On site rainwater harvesting is the amount of storage required to capture enough water for a longer term benefit to homeowners and businesses. Would be do-able on new builds...</li> </ul>		
<b>Importing water supplies outside the AMA - and locate water to import</b>	<ul style="list-style-type: none"> <li>• Harnessing Mississippi flood water to the Colorado base and making sure that the AMA is in the strongest possible position</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce ground water pumping</li> <li>• Benefits local community and landowners</li> <li>• Adding jobs!</li> <li>• New sources!</li> </ul>	<ul style="list-style-type: none"> <li>• Wheeling</li> <li>• Resistance from the area of export</li> <li>• Cost can become prohibitive</li> <li>• Legality</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional challenges</li> <li>• The length of time it take to implement projects (Avg. 2-5 years)</li> </ul>	<ul style="list-style-type: none"> <li>• Regional cooperation is the best chance of success</li> <li>• Scales for ag and municipal are very different</li> <li>• Cost share</li> </ul>	<ul style="list-style-type: none"> <li>• Up front cost and ongoing costs</li> <li>• Patience and diligence</li> <li>• Energy input for all of these strategies</li> </ul>

	<p>to be part of the conversations (<b>Note:</b> How will you do this?)</p> <ul style="list-style-type: none"> <li>• NIA Priority CAP Water</li> <li>• Partner to bring in water being made available (hopefully) by the Colorado River Indian Tribes (CRIT) for lease to Arizona entities</li> <li>• Ocean Desalinization</li> </ul>	<ul style="list-style-type: none"> <li>• Adding water supplies to system benefits hydrologic system for the long run</li> <li>• Where is Pinal going to be economically and politically moving forward?</li> </ul>	<ul style="list-style-type: none"> <li>• Might impact existing ecosystem service values of the water where it currently flows. Might impact the existing rights of other users</li> <li>• Where to find new water supplies and the feasibility of getting those supplies</li> <li>• Challenges are largely legal and regulatory, if the resource is appropriately priced.</li> </ul>	<ul style="list-style-type: none"> <li>• Wheeling</li> <li>• Legality</li> <li>• Once water is acquired and delivered to the area of import, usually the supply is greater than demand so it needs to be stored (typically underground) for later retrieval. If the imported supply is groundwater from another basin, it may be a challenge to obtain the ability to store it underground since it originated as groundwater (institutional issue).</li> </ul>	<p>mechanisms will help</p> <ul style="list-style-type: none"> <li>• Scaling is dependent on the amount of water available in the augmentation supply, cost of infrastructure</li> <li>• May be difficult to buy water now and account for future growth and cost</li> </ul>	<ul style="list-style-type: none"> <li>• Global affairs and global negotiations</li> <li>• Capitalize on opportunities and be prepared</li> </ul>
<p><b>Develop process for wheeling agreements.</b> <b>Note:</b> Best chances for success IMHO.... tribal leases leasing followed Colorado River</p>	<ul style="list-style-type: none"> <li>• Having a seat at the table; there is a LOT of competition for these opportunities:</li> <li>• Finalize the tribal water settlement(s) 3 or 4</li> </ul>					

Water. Wheeling= securing capacity as well as authority, brackish groundwater treatment and importation

- Where to find new water supplies and the feasibility of getting those supplies

Water. Wheeling= securing capacity as well as authority, brackish groundwater treatment and importation	<ul style="list-style-type: none"><li>• Where to find new water supplies and the feasibility of getting those supplies</li></ul>					
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## Arena C: Analysis of Adaptation and Mitigation Strategies Related to Conservation

Participants in this discussion: Terri Sue Rossi, Shaina Shay, Kevin Black, Juliet McKenna, Raluca Mihalcescu

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
<b>Align all sectors (Ag, industry and municipal) in the county around a conservation program that will reduce demand by 15% or more.</b>	<ul style="list-style-type: none"> <li>Education about what we mean by conservation</li> <li>Are there other sectors with different percentages? Something to explore.</li> <li>What information is there re: local municipalities regulations?</li> </ul> <p><b>Note:</b> Consider enforcement...</p> <p><b>Note:</b> Does this include education to inform people of technology?</p>	<ul style="list-style-type: none"> <li>All sectors in the County</li> <li>There will be 15% more water for the future</li> <li>Clear vision/example of what success looks like</li> <li>Delay building infrastructure and water supplies until more resources come</li> </ul>	<ul style="list-style-type: none"> <li>Potential negative impact on waste water flow</li> <li>Are there negative risks to bringing in new industries?</li> <li>New industries might get scared off</li> <li>Potential negative PR</li> <li>Don't see themselves fitting into this "lean" water view</li> </ul>	<ul style="list-style-type: none"> <li>Getting buy in from all sectors across the board might be difficult</li> <li>ectors might not have diverse water portfolios - hard to reduce then</li> <li>Hard to get buy-in from neighboring cities/sectors</li> <li>Defaulting in tracking, especially in an area that's growing</li> <li>Difficulty measuring success</li> </ul>	<ul style="list-style-type: none"> <li>Collaborative efforts; getting different sectors to feel supported</li> <li>More affordable at a regional level</li> <li>Getting consensus on the types of ordinances and implementation</li> <li>Opportunities at local level for actions</li> </ul>	
<b>Define aquifer health &amp; sustainability (level of depth</b>	<b>Note:</b> How do you define Aquifer health? Please expand on this	<ul style="list-style-type: none"> <li>All residents of Pinal, its economy, and users of</li> </ul>	<ul style="list-style-type: none"> <li>Large land-owners that may not be able to irrigate in the</li> </ul>	<ul style="list-style-type: none"> <li>Change is hard; business as usual goes away</li> <li>Requires</li> </ul>	<ul style="list-style-type: none"> <li>Aquifer-wide metrics would be regional and cross</li> </ul>	<ul style="list-style-type: none"> <li>Would require stakeholder informed process with diverse and</li> </ul>

<p><b>drawdown? what else?) and work towards it</b></p>	<p><b>Note:</b> Like this! An overarching goal of this group to define what is the problem, and then work to solve it!</p>	<p>groundwater by increasing certainty and water security</p> <ul style="list-style-type: none"> <li>• All users of groundwater by lowering rates of groundwater declines, pumping costs, risk of subsidence, and need to drill and deepen wells</li> <li>• Native American Tribes whose groundwater resources are impacted by others' pumping</li> </ul>	<p>future</p> <ul style="list-style-type: none"> <li>• Short-term water users who are trying to pump as much as they can while it's there for the lowest cost</li> </ul>	<p>individual compromise to achieve long-term goals</p>	<p>jurisdictions</p> <ul style="list-style-type: none"> <li>• Local areas could be identified for special policies/goals/investments</li> </ul>	<p>popular buy-in</p> <ul style="list-style-type: none"> <li>• Requires using science to inform policy (political will and leadership)</li> <li>• Enforcement or incentives mechanisms would be needed</li> </ul>
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## Arena D: Analysis of Adaptation and Mitigation Strategies Related to Regulations

Participants in this discussion: Terri Sue Rossi, Shaina Shay, Kevin Black, Juliet McKenna, Raluca Mihalcescu

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
<b>Establish policies and regulations that allow operational flexibility (i.e. being able to move wells when needed)</b>	<ul style="list-style-type: none"> <li>Encourage removing/relocating inefficient wells</li> <li>Address the disconnect between recharge and pumping</li> </ul> <p><b>Note:</b> AWS redistribution policy</p>	<ul style="list-style-type: none"> <li>Use wells to influence recharge mounds to be directed toward well fields</li> <li>Anyone who is provided water by a municipal water provider</li> <li>Allows for traditional perspectives on recharge and recovery to continue to be practiced</li> <li>It's easier to move wells than it is to move recharge projects</li> <li>Wells can moved to optimal locations for physically available</li> </ul>	<ul style="list-style-type: none"> <li>Perceived inequity</li> <li>From a regulator's POV there would be more water pumping</li> <li>Could appear inequitable from other perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and tracking operational flexibility</li> <li>More difficult to implement operational flexibility instead of regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>Regulation has to be pursued regionally</li> <li>Locally - just do the things that you want the operational flexibility for...</li> </ul>	<ul style="list-style-type: none"> <li>Creates more cost effectiveness</li> <li>Hard to sell politically</li> <li>Pinal Cty has a stakeholder group that has modeled coming together for good water policy</li> <li>Needed buy-in from all stakeholders</li> <li>Perceived Equity</li> <li>Potentially impacts other AMAs</li> </ul>

		<p>groundwater</p> <ul style="list-style-type: none"><li>● Wells can be moved when the time is right</li><li>● Creates a more stable regulatory environment</li></ul>				
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## Arena E: Analysis of Adaptation and Mitigation Strategies Related to Infrastructure

Participants in this discussion: Austin Carey, Brad Hill, Nathan Miller, Valerie Swick, JoAnna Mendoza, Theresa Lau

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
<b>Build new infrastructure (recharge facilities, water treatment (including brackish and impaired), DPR, wells, pipelines, etc.)</b>	<ul style="list-style-type: none"> <li>Siting recharge facilities in areas of greatest groundwater decline (reclaimed and CAP water)</li> <li>Conduct a regional water treatment plant(s) siting study</li> <li>Redistribute groundwater pumping to areas that have less severe groundwater level declines</li> </ul> <p><b>Note:</b> Conservation, especially for surface water, is a good strategy for reliability but should never be factored into a</p>	<ul style="list-style-type: none"> <li>More available water!</li> <li>Less reliance on groundwater resources</li> <li>Those with the most groundwater decline would benefit most</li> <li>Economic development could move forward.</li> </ul>	<ul style="list-style-type: none"> <li>Taxpayer needs to pay</li> <li>taking up additional land (recharge station)</li> <li>Not everyone wants more economic development</li> <li>DPR: Public perception challenges</li> </ul>	<ul style="list-style-type: none"> <li>Funding</li> <li>Regulatory processes (water storage permits, unreasonable harm analysis, water quality reqs)</li> <li>Stakeholders coming to consensus on which projects to fund</li> <li>DPR: Public perception challenges</li> </ul>	<ul style="list-style-type: none"> <li>Most likely regional scale, in order to share costs</li> </ul>	<ul style="list-style-type: none"> <li>Necessary to acquire more water</li> </ul>

	growth supply. The savings help to provide a buffer against drought/ excessively warm years					
<b>Upgrade or rehab existing infrastructure to improve efficiency and effectiveness (deepening wells, pipelines, smart water meters, etc.)</b>	<ul style="list-style-type: none"> <li>• Deepening wells in all sectors</li> </ul>	<ul style="list-style-type: none"> <li>• More available water!</li> <li>• Those with the most groundwater decline would benefit most (pipeline)</li> <li>• Provides more immediate water, but not necessarily long-run increases</li> </ul>	<ul style="list-style-type: none"> <li>• Taxpayer needs to pay</li> </ul>	<ul style="list-style-type: none"> <li>• Funding</li> <li>• Stakeholders coming to consensus on which projects to prioritize</li> <li>• Regulatory processes (assured water supply might become more difficult to demonstrate, water quality reqs)</li> <li>• Assured water supply might get worse</li> </ul>		
<b>Utilizing existing infrastructure more effectively</b>	<ul style="list-style-type: none"> <li>• More creative ways to utilize CAP canal and laterals.</li> <li>• Share infrastructure across sectors (e.g. CAP, stormwater, Mississippi)</li> </ul> <p><b>Note:</b> address lost and unaccounted</p>					

	for and lost water (leaking pipes and infrastructure): 4%					
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## Arena F: Analysis of Adaptation and Mitigation Strategies Related to Funding

Participants in this discussion: Austin Carey, Brad Hill, Nathan Miller, Valerie Swick, JoAnna Mendoza, Theresa Lau

Strategy name/ description	Illustrative actions to help describe the strategy	Describe the benefits of successful implementation (who would benefit and how?)	Describe the negative impacts and risks of successful implementation (who would be harmed?)	Describe the challenges of implementing the strategy	Describe if and how the strategy can be scaled locally and/or regionally	Additional thoughts on feasibility?
<b>Identify new funding from different jurisdictions (federal, state, regional, local, individuals, corporate, etc.)</b>	<ul style="list-style-type: none"> <li>Dedicate part or all of the CAWCD water storage tax to fund a renewable water supply for the Pinal AMA</li> <li>Create a financing mechanism for stakeholders to acquire water supplies</li> <li>Affordability program for low-income communities</li> </ul>	<ul style="list-style-type: none"> <li>Projects move forward sooner</li> <li>The most vocal benefit! Ag, municipalities</li> </ul>	<ul style="list-style-type: none"> <li>CAWCD: Less resources to use for other purposes</li> <li>Matching funds, loans, bonds, have to come from somewhere (taxpayer)</li> </ul>	<ul style="list-style-type: none"> <li>Legislative authorization for fee, rate increases</li> <li>CAWCD board approval</li> </ul>	<ul style="list-style-type: none"> <li>Mix of federal, state, regional and local efforts to take advantage multiple funding sources</li> </ul>	<ul style="list-style-type: none"> <li>Without funding, unable to make other changes - key to moving ideas forward.</li> </ul>
<b>Make sustainable water supplies affordable in the Pinal AMA</b>	<ul style="list-style-type: none"> <li>Conduct revenue forecast model to set municipal water rates</li> <li>Set different pricing for different types of water (e.g.</li> </ul>	<ul style="list-style-type: none"> <li>Water users, vulnerable communities</li> <li>Ag - and all the people employed in vulnerable communities</li> </ul>	<ul style="list-style-type: none"> <li>Ability to determine where water is coming from (metering, different systems)</li> <li>Regulations to financing bodies</li> </ul>			<ul style="list-style-type: none"> <li>Without funding, unable to make other changes - key to moving ideas forward.</li> </ul>

	<p>subsidize reclaimed water, tiered rate structure). Affordability program for low-income communities</p> <p><b>Note:</b> Purchasing and retiring ag lands???</p>					
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## Next Steps

After a discussion of lessons learned and lingering questions that resulted from the small group conversations, the EMS team closed the event with a presentation on next steps (available as a separate presentation). Participants filled in an evaluation of the event ([linked here](#)). Additionally, participants discussed individual actions they could take to follow up the conversations held in the workshop.

## Appendix of Additional Resources

Available as separate documents are the following:

1. PDF Summary of Sessions 1 and 2 Miro Boards
2. Participant Sign In sheets from both Sessions
3. EMS Presentations:
  - a. Overview of Basin Study
  - b. Framing the Challenges: A Review of Groundwater Modeling Results
  - c. Next Steps
4. Zoom Chat Records from Session 1 and Session 2
5. Detailed Facilitator's Agenda
6. Event Evaluation