

## Reclaimed Water Stakeholder Issues Matrix

Topic	ADEQ Ideas	12-Feb	10-Mar	5-May	Other	Comment
Conveyances/Infrastructure		x				Reclaimed system cross-connection control should apply only if delivery is to a facility that has the ability to return pressurized flow, for example, industrial use.
Conveyances/Infrastructure			x			Cross-connection control requirements are not necessary in the rule because they are already covered under potable system rules and procedures.
Conveyances/Infrastructure			x			Provisions for cross-connection control and backflow protection are in drinking water rules, but not for residential properties supplied with reclaimed water unless a hazard is identified.
Conveyances/Infrastructure	x		x			Need cross-connection criteria where both potable water and reclaimed water is provided.
Conveyances/Infrastructure	x					Technical standards: More comprehensive criteria for design, construction, O&M
Conveyances/Infrastructure		x				Establish best management practices for design, construction, operation, and maintenance of reclaimed water conveyances and infrastructure.
Conveyances/Infrastructure		x				Establish criteria for reclaimed water distribution systems that maintain water quality during distribution to ensure that water is safe for allowed end uses at all times (for example, maintenance of chlorine residual).
Conveyances/Infrastructure		x				Establish best management practices for reclaimed water conveyances and infrastructure; statewide rules would be helpful. If utilities already have adopted standards, they should be allowed to follow those standards, however.
Conveyances/Infrastructure		x				Because reclaimed water quality may change considerably during distribution, ensure that water quality remains safe for intended uses.
Conveyances/Infrastructure		x				By requiring enhanced management of distribution systems to maintain water quality during distribution, Class A and A+ water will remain safe for open access by humans and suitable for all intended uses.
Conveyances/Infrastructure		x				Address criteria for low head pipeline conveyance (less than 50 psi).

**What do the topics mean?**

**Conveyances/Infrastructure** includes requirements for pipeline and open water structures that carry reclaimed water  
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Conveyances/Infrastructure		x	x			Clarify requirement (or no requirement) to maintain horizontal and vertical separation between reclaimed water, sewer, drinking water and stormwater conveyances.
Conveyances/Infrastructure			x			What about service line separation requirements, or do rules continue to apply to main lines only
Conveyances/Infrastructure		x				In regard to criteria for distribution systems that are specified in rule, add a provision to allow ADEQ to consider alternative criteria similar to the process provided for septic tank and alternative onsite systems in R18-9-A312(G).
Conveyances/Infrastructure		x				Do not add standards or criteria for conveyance systems into the rule. Allow regions or cities to develop site-specific standards.
Conveyances/Infrastructure		x				Add recharge to the list of allowed end uses to facilitate consistent collection of data on volumes distributed to recharge, but only for that reason. Recharge facilities are already permitted under the APP program and should continue to be regulated under it for all other purposes.
Conveyances/Infrastructure		x				Clarify ability to combine a class of reclaimed water with stormwater, surface water, or harvested rainwater in reclaimed water distribution systems.
Conveyances/Infrastructure					x	Requiring enhanced management of reclaimed water distribution systems seems like an unnecessary additional burden to small systems and another layer of bureaucracy. If enhanced management is implemented, it should be imposed only on systems which demonstrate that there is a need for it.
Conveyances/Infrastructure					x	Do not add additional standards or criteria for conveyance systems into the rule. Allow regions or cities to develop site-specific standards, or use existing water distribution standards with the exception of color and labeling.
Conveyances/Infrastructure			x			Need standard signage requirements for each reclaimed water quality class, including specific indication of number and location of signs.

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Conveyances/Infrastructure			x			Do signs need to say, "Caution. Reclaimed Water. Do Not Drink." at open water conveyance sites, where the water quality is likely better than any stormwater or other water entering the site? Perhaps signs that educate with respect to the good quality rather than give a negative idea of the water.
Conveyances/Infrastructure			x			Need to clarify R18-9-602(C)(3), which states that a pipeline conveyance shall be operated so that "the capability for inspection, maintenance, and testing is maintained."
Conveyances/Infrastructure			x			While details should be left to local jurisdictions, some baseline standards or criteria for conveyance systems may be helpful.
Conveyances/Infrastructure			x			Although backflow prevention is covered under the drinking water rules, there is a disconnect between utilities implementing reuse and the water system suppliers.
Conveyances/Infrastructure		x	x			Need criteria for active management of reclaimed water distribution systems for appropriate operation and maintenance.
Conveyances/Infrastructure			x			Require all reclaimed water piping to be purple. Currently, ductile iron is used for both potable and non-potable, with marking tape, signs, and purple plastic sleeves for non-potable. Square valve box lids are used to signify non-potable.
Conveyances/Infrastructure			x			Make the pipe manufacturers color the pipe purple to prevent cross connections.
Conveyances/Infrastructure			x			If drinking water rules do not address reuse pipe marking, then at a minimum, reuse pipes within a certain distance of potable pipe must be marked OR require all reuse piping to be marked.
Conveyances/Infrastructure			x			Prioritize access and permissions to 1) agricultural use of all alternative water sources (gray, reclaimed) and 2) power plants for cooling.
Conveyances/Infrastructure			x			Allow and facilitate use of existing irrigation canals (in Phoenix area especially) to move reclaimed water from wastewater treatment plant to end user. This infrastructure already exists, thus is cheaper to operate.

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Conveyances/Infrastructure			x			A major hurdle in reuse of reclaimed water is how to get it from the plant to the end user. Rules should address this difficulty. Policy statement?
Conveyances/Infrastructure			x			Address expenses of constructing reclaimed water delivery systems.
Conveyances/Infrastructure			x			Address and allow emerging technologies and alternative practices.
Conveyances/Infrastructure				x		Allow gravity (low pressure) pipeline conveyances
Conveyances/Infrastructure				x		Need minimum building standards for reclaimed water conveyances
Conveyances/Infrastructure				x		Allow for discharge of water for repairs and maintenance of conveyances. Should not be so difficult to drain water.
Conveyances/Infrastructure				x		Better define horizontal and vertical separation distances from reclaimed water piping to other utilities, including potable and sewer lines.
Conveyances/Infrastructure				x		Develop criteria for conversion of potable lines to reclaimed lines, especially with respect to cross-connection control.
Conveyances/Infrastructure				x		Why is signage needed for open access areas such as impoundments when the source water is Class A+?
Conveyances/Infrastructure				x		Pipelines need to be tested for contaminants, regardless of whether piping is new or used.
Conveyances/Infrastructure				x		The Class A+ standard should be required at the point of reuse.
Conveyances/Infrastructure				x		Due to biofilms in piping, testing should be required at point of discharge.
Conveyances/Infrastructure				x		Contact uses or mixed with potable water (i.e., snowmaking): Water delivery systems have particular risks related to pathogens that cannot be easily reversed in all circumstances. We [illegible] the need for prior experience in dealing with such risks. I see no way to mitigate this.
Conveyances/Infrastructure				x		Flagstaff has a small city budget and staff and expertise in dealing with potential pathogen issues. But we have a world class exposure due to international tourists. This is an issue that must be mitigated with outside funding.

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Conveyances/Infrastructure				x		Hospital sewer waste streams are not separated from residential waste streams. This must be done to remove risks from exotic disease due to both residents and tourists, business and governmental visits from international locales.
Conveyances/Infrastructure				x		Accidents happen. Accidents have happened (treatment plant methane explosion/"belch" sounds; exceeding plant ability to remove; monitored substances exceeding standards). Flagstaff monitoring has not been reported to the public in a timely manner. If a critical accident happens which puts the public at risk, there is no plan to deal with this. A plan is needed.
Conveyances/Infrastructure				x		Many potential "critical accidents" (putting the public at risk) have not yet occurred <u>to our knowledge</u> . When these do happen, they will be "new issues" to both the public and to agencies. What is the plan for dealing with unexpected new issues?
Conveyances/Infrastructure				x		Establish contingency procedures so that an incursion of contaminants that may pass through the treatment plant doesn't flush out to the end use. It hasn't happened yet, but there is high risk/high gain to safeguard against such incursions. Need to look at cost as well.
End Uses and Standards	x					Uses are too limited; need more
End Uses and Standards	x					Are constituents for monitoring, numerical limits, and monitoring frequencies appropriate for the five reclaimed water quality classes to ensure public health protection and safe water quality for the allowed end uses?
End Uses and Standards	x					Add recharge to the list of allowed uses, but exempt it from reclaimed water end use permits because recharge is permitted under APP.
End Uses and Standards	x	x				New reclaimed water quality classes are needed.
End Uses and Standards		x				Add open loop cooling systems (for example, cooling towers) as an allowed end use.

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End Uses and Standards		x				Add non-contact, non-food, industrial/manufacturing end uses such as metal finishing, boiler feed water, semiconductor/electronics fabs)
End Uses and Standards		x				Review RWQS classes and allowable technologies suitable for achieving classes. Current system is out-of-date and does not address alternative technologies.
End Uses and Standards		x				Add surface water augmentation as an approved end use, in conjunction with AZPDES surface water permitting and drinking water source water assessment.
End Uses and Standards		x				Add aquifer recharge/aquifer replenishment as an allowed end use, but maintain all regulatory requirements under the current APP that is issued for such sites.
End Uses and Standards		x				Constituent limits under the different RWQS classes should ensure protection of human health.
End Uses and Standards		x				End use standards should be risk-based and include potable reuse options.
End Uses and Standards		x				Ensure that monitoring requirements for the different RWQS classes are based on performance standards rather than requiring a specific type of technology.
End Uses and Standards		x				For Class A+ and A water, allow alternatives to filtration. Better yet, develop standards based on performance (meeting specified quality standards) rather than requiring particular technologies.
End Uses and Standards		x				Make it easier to distribute multiple classes of reclaimed water from one wastewater treatment plant, for example split streams or when a WWTP is not achieving a higher class and must distribute a lower class water to corresponding lower class end uses.
End Uses and Standards		x				Review and address inconsistencies between treatment standards for sewage treatment plant BADCT and the corresponding requirements under the RWQS classes.

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End Uses and Standards		x				Review current monitoring standards to determine whether they are adequate to protect human health and appropriate for the corresponding allowed end uses.
End Uses and Standards		x				Review and revise total coliform and E. coli standards.
End Uses and Standards		x				Consider changing total coliform/E. coli standards to match surface water quality standards for full body contact (less conservative is OK), or otherwise justify more stringent standard with science-based risk assessment.
End Uses and Standards		x				Enteric virus standard needs to be reviewed. No commercial Arizona lab is certified to perform this test. Therefore, long delays are experienced when required to perform this analysis. Results may take more than a month, which does not allow correction of the problem in a timely manner.
End Uses and Standards		x				Consider addition of viral surrogates to the standards.
End Uses and Standards					x	Title 18, Chapter 11, Article 303-B1 requires for turbidity monitoring prior to disinfection. In many cases this presents a challenge. Doesn't it make more sense to monitor the finished product once all phases of treatment have been completed? (Performance based) Also, allow for alternate turbidity monitoring locations for systems with separate reclaimed water systems which provide additional disinfection (chlorination).
End Uses and Standards			x			Add an end use standard that allows full body contact.
End Uses and Standards	x		x			Reclaimed water quality standards and monitoring requirements should be consistent with Aquifer Protection Permit requirements.
End Uses and Standards			x			Have the reclaimed water quality standards mirror the same standards under the APP, for example, the 4 of 7 days rule for coliform monitoring.
End Uses and Standards			x			Instead of defining permissible used of Class A+/A reclaimed water, regulations should define impermissible uses. This would allow precedents to be established for other appropriate uses.

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End Uses and Standards			x			Remove allowance for reclaimed water to be used for snowmaking: 1) There was no meaningful consultation with tribes and public when snowmaking was included as an allowable use in the original rule, 2) EPA and ADEQ standards don't require testing and treatment for pharmaceuticals and hormones—revise standards, and 3) ingestion occurs yet no consistent monitoring occurs.
End Uses and Standards			x			The concept of being in compliance 4 of 7 days is unacceptable for categories which include direct human contact.
End Uses and Standards			x			Allow a wastewater treatment plant to produce treated wastewater meeting multiple reclaimed water quality classes for different uses. This would include allowing the wastewater to contain organic nitrogen for agricultural uses.
End Uses and Standards			x			Water quality needs to be met at the point of reuse, not just at the treatment plant due to regrowth in the pipe and influences of open reservoir contamination (lakes), including pesticides, pathogens, and street runoff.
End Uses and Standards			x			If reclaimed water goes for recharge, what classification does it fall under? Testing required to ensure it meets original intended class for disposal.
End Uses and Standards			x			Recognize and enable small rural systems that have limited resources, but which want to use reclaimed water more effectively.
End Uses and Standards			x			Require public notification when reclaimed water is released which does not meet pathogenic standards (for classes which include direct public exposure).
End Uses and Standards			x			Develop reclaimed water quality standards for emerging contaminants such as endocrine disrupting compounds (EDCs) and antibody resistance causing compounds.
End Uses and Standards		x	x			Consider adding direct potable reuse to end uses.
End Uses and Standards			x			Develop new standards and public education programs for direct potable reuse.

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End Uses and Standards		x				Define one or more potable reuse classes with strong linkages to requirements in Safe Drinking Water Act rules and permitting to ensure public health protection but not be so stringent to limit utilities to a single treatment process train.
End Uses and Standards		x				Need a higher class of RWQS defined for potable reuse.
End Uses and Standards			x			Direct potable reuse rules should recognize the need for such strategies in rural Arizona and work to encourage such use and to augment supplies with limited alternatives.
End Uses and Standards			x			Allow blending of Class A+/A reclaimed water with stormwater and CAP surface water to create a combined source for treatment at a conventional surface water treatment plant. Determine best approach of permits and water quality standards.
End Uses and Standards			x			Specify conditions under which direct potable reuse can be implemented, such as 1) declared shortage on the Colorado River, 2) decreased flows on other Arizona streams, 3) lack of availability of groundwater, and 4) poor quality groundwater requiring blending.
End Uses and Standards			x			Changes should allow reuse of reclaimed water into the potable system, whether directly to a water treatment plant or other conveyance such as a canal.
End Uses and Standards					x	Use <a href="http://www.nwri-usa.org/pdfs/DPR-Framework----FINAL.pdf">http://www.nwri-usa.org/pdfs/DPR-Framework----FINAL.pdf</a> as a resource;
End Uses and Standards					x	Use the Steering Committee for Arizona Potable Reuse(SCAPR) white paper/guidance (to be published this summer) as a resource;
End Uses and Standards			x			Reclaimed water planned for direct potable reuse can go through drinking water source water approval. Where source water augmentation is contemplated, water should meet domestic water source designation in surface water quality standards.
End Uses and Standards		x				Not necessary to distinguish between direct and indirect potable reuse if encompassing criteria can be developed that are performance based, so

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						that uses of different technologies are not limited or a certain technology is required that not be appropriate in all situations or might be superseded by better technologies.
End Uses and Standards			x			Require any reclaimed water for both indirect and direct potable reuse to go through treatment/removal of endocrine disrupting compounds (EDCs) and compounds leading to antibiotic resistance.
End Uses and Standards			x			Standards for reclaimed water should consider background concentrations of contaminants of emerging concern.
End Uses and Standards					x	The 4 of 7 reporting requirements. This can be confusing to report and I would recommend that this requirement be removed. The basis for his change is that there are already limits for the sampling. If a facility is meeting the permit requirements the 4 of 7 will be met by default.
End Uses and Standards					x	Enteric virus requirement when a turbidity limit is exceeded. For smaller facilities or even the larger ones this test is costly and takes a long time to get results. For some facilities by the time results are received the information is not available to communicate to people that may have been affected. I believe that this test requirement be circumstantial and adeq should not make it a hard and fast requirement however adeq needs the ability to require it if they deem it necessary.
End Uses and Standards					x	As a Flagstaff parent and business owner, I support intelligent reclaimed water use. My 12 year-old daughters have skied on the FAST ski team at the Arizona Snowbowl since they were 6 years old. Now with snow-making in place and guaranteed ski and race terrain I have witnessed the increase in training days, performance, attendance and a multitude of other benefits from a full ski season. They have developed a skill set and respect for the outdoors that will last them a lifetime. We now attract regional races where hundreds of junior athletes and their families visit Flagstaff for 3 and 4 day weekends from New Mexico, Colorado, Utah, California and Nevada. They all spend money here.

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						<p>I see a huge opportunity through reclaimed water use for snow-play venues and Winter sports attractions that would be a real benefit to Flagstaff businesses and citizens alike, while providing our snow-starved neighbors to the south a chance to enjoy our Alpine winter climate.</p> <p>As a business owner, I can attest to the increased viability and attractiveness that Flagstaff has attained through reclaimed water use and reliable ski seasons. Skiing and snow sports are a substantial economic draw for Flagstaff and the State of Arizona.</p> <p>As for the sacredness of our Colorado Plateau region, there is no doubt that it is sacred land, all of it, for our Native American neighbors, those that preceded them by thousands of years and, yes, for us too, who have chosen this beautiful place to invest our lives and raise our families. So, short of bulldozing Flagstaff and returning all of it to its natural state, I believe the intelligent management of our resources is imperative for future generations, and it is our obligation to plan for that future now. Reclaimed water is a valuable resource for the Flagstaff region, and we thank you for your efforts in managing it with our local input for the betterment of our environment, communities and our families.</p>
End Uses and Standards				x		Monitoring for antibiotic resistant pathogens must be treated as a trigger for looking for other pathogens. Perhaps unanticipated antibiotic resistant pathogens are higher risk for the immune impaired (which is bad enough), but their presence may signify even more risky pathogens which would put all exposed people at risk.
End Uses and Standards				x		There needs to be a program for reclaimed water to add CECs to a list to monitor and study, equivalent to the Contaminant Candidate List for drinking water.
End Uses and Standards				x		Need to pay more attention to monitoring the right constituent at the right location.
End Uses and Standards				x		Indirect potable reuse is happening now. Need more safeguards including closer review of impacts to aquifers.

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End Uses and Standards				x		Reduce sodium level in reclaimed water.
End Uses and Standards				x		Chemical feed is not necessary for MBR [membrane bioreactor] treatment plants. These should not be subject to enteric virus monitoring.
End Uses and Standards				x		Reclaimed wastewater should not be approved for DPR.
End Uses and Standards				x		Reclaimed water needs to be used for potable reuse.
End Uses and Standards				x		Need a new reclaimed water quality class for conversion to potable water, including standards for CECs.
End Uses and Standards				x		Create a new class of reclaimed water for potable reuse (indirect or direct) and surface water augmentation.
End Uses and Standards				x		Remove prohibition for direct reuse for human consumption or full-immersion activity. Replace with special permit and ADEQ Director approval.
End Uses and Standards				x		Consider developing rules that allow utilities to implement DPR using either performance-based criteria or treatment technology-based criteria.
End Uses and Standards				x		Find a way that water treated by onsite systems (septic tanks and alternative systems) to a total coliform level of 30 cfu/100 ml or less can be used as Class B water, as it is less than the Class B standard for fecal coliform of 200 cfu/ml.
End Uses and Standards				x		Standards for direct and indirect potable reuse should include CECs, heavy metals, etc.
End Uses and Standards				x		What are the standards for indirect and direct potable reuse of reclaimed water to be used as drinking water?
End Uses and Standards				x		Put health standards above special interest groups.
End Uses and Standards				x		For reclaimed uses that result in human contact with the substance, permittees should be held to higher standard of rule compliance.
End Uses and Standards				x		Need rules to have a <u>full</u> public process before approval.
End Uses and Standards				x		Reward end users.

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End Uses and Standards				x		Stop irrigating parks with poop water.
End Uses and Standards				x		Does “end use” in the definition of “pipeline conveyance” [AAC R18-9-601(2)] mean, for instance, the urinal? How does this relate to AAC R18-9-602(G)(1) [use of specially marked or colored pipe for reclaimed water pipeline conveyances] for say, a 1/2-inch service in the wall?
End Uses and Standards				x		Allow for Class A, A+ reclaimed water to be used for wildland and structural fire fighting. No permit should be required.
End Uses and Standards				x		Need a way to use splashpad water for certain beneficial uses.
End Uses and Standards				x		Routine trace analysis testing for CECs needs to be implemented, especially for all reclaimed water that can reenter fresh water supplies.
End Uses and Standards				x		CECs, including industrial chemicals and pharmaceuticals need to be seriously studied and included in determining allowed uses.
End Uses and Standards				x		Create process to remove endocrine disruptors. Have more stringent testing.
End Uses and Standards				x		Establish non-numeric standard for trace organic compounds/CECs.
End Uses and Standards				x		Problem with ARBs and ARGs in distribution systems—biofilms.
End Uses and Standards				x		Reclaimed water quality standards are <u>not</u> known for future generations, especially preventing genetic mutations in plants, animals, humans.
End Uses and Standards				x		“Pathogen-free” does not include other hazards such as antibiotics, hormones, endocrine disruptors, etc. There is not enough adequate testing for long term effects.
End Uses and Standards				x		Is there opposing data available showing that reclaimed water is not safe to drink? Any published research showing increased illnesses in areas with high use of reclaimed water?
End Uses and Standards				x		What are the health impacts to children that are exposed to reclaimed wastewater for snowmaking and in sports fields?

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End Uses and Standards				x		Adequate care to keep wastewater snow from eating and drinking areas is not possible because wind blows snow.
End Uses and Standards				x		No signs are visible at Snowbowl. People need to know the health risks. Children can't read the signage.
End Uses and Standards				x		School children with high rates of asthma playing on football and other fields. Snowbowl's children area is not safe using wastewater. Children can not read signs saying don't eat the snow.
End Uses and Standards				x		Health risks are very great as scientific studies are being done now for recreation in wastewater-sprayed fields, race tracks, ski resorts, golf courses, schools and parks.
End Uses and Standards				x		Go back and do a proper study to determine if reclaimed snow is safe to play in.
End Uses and Standards				x		ADEQ must review its rule regarding treated sewage for snowmaking. Must be public and transparent, including meetings in tribal communities.
End Uses and Standards				x		The well-being of the Arizona Snowbowl is vital to the success of my business and many others.
End Uses and Standards				x		Even though all classes of reclaimed water meet existing state and federal regulations, they do not address the serious issue of CECs [contaminants of emerging concern], ARBs [antibiotic resistant bacteria], and ARGs [antibiotic resistant genes] in these waters which now can reenter our fresh water surface and groundwater sources. DPR [direct potable reuse] will be needed in Arizona in the future—standards for DPR need to be addressed.
End Uses and Standards				x		Test for chemicals at point of end use.

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## Reclaimed Water Stakeholder Issues Matrix

Topic	ADEQ Ideas	12-Feb	10-Mar	5-May	Other	Comment
End Uses and Standards				x		Monitor reclaimed water directly from the reclaimed water system, as opposed to monitoring the treated effluent as it is discharged from the treatment plant.
End Uses and Standards				x		Do not require further testing by end user if reclaimed water is received from a certified treatment facility (even potable water is exposed to the atmosphere and environmental elements).
End Uses and Standards				x		Engage in meaningful consultation with the tribes.
End Uses and Standards				x		Standards seem adequate.
End Uses and Standards				x		Include scientific data and research into potential health risks.
End Uses and Standards				x		Reclaimed water should be allowed for full body contact.
End Uses and Standards				x		Do not add the end use that allows full body contact.
End Uses and Standards				x		Expand uses of reclaimed water.
End Uses and Standards				x		Reclaimed water should be approved for all water uses and be made safe to use.
End Uses and Standards				x		No poop snow.
End Uses and Standards				x		Do not use reclaimed water for snowmaking (multiple comments).
End Uses and Standards				x		Reevaluate whether snowmaking is a safe use of reclaimed water.
End Uses and Standards				x		ADEQ has not adequately tested reclaimed water for snowmaking.
End Uses and Standards				x		What is the legality of the process that allowed snowmaking as an acceptable use of reclaimed water?
End Uses and Standards				x		Snow made from reclaimed water has not been studied for safety.
End Uses and Standards				x		Skiing and playing in snow made from reclaimed water should be considered "immersion."

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Topic	ADEQ Ideas	12-Feb	10-Mar	5-May	Other	Comment
End Uses and Standards					x	For Class A+/A reclaimed water, allow alternatives to disinfection such as membrane filtration as satisfying BADCT at our water reclamation facilities for APP and AzPDES.
End Uses and Standards					x	Reclaimed water suitable for Potable Reuse should require the same signage as for potable water, i.e., no signage.
End Uses and Standards					x	<p>The reuse rule making by ADEQ should include policies to reduce overall salt levels in wastewater. High total dissolved solids (TDS) in wastewater are a major determinant in:</p> <ul style="list-style-type: none"> <li>• What treatment methods are required influencing capital costs</li> <li>• The cost of treatment to reclaim the water</li> <li>• The quality of the reclaimed water</li> </ul> <p>Salt levels in treated wastewater have made reclaimed water not fit for use for some purposes, such as golf course irrigation. In Scottsdale, for example, water is ultimately softened three times from source to final disposal, resulting in salt added along the way—water softeners at homes, businesses, and resorts; at the Scottsdale water reclamation facility that is treating the water for reclaimed water (the brine from the RO plant is discharged to the Phoenix 91st Avenue plant, and at the Palo Verde Nuclear Generating Station, where the water is again softened for cooling tower use. In light of this, doesn't source control make sense?</p>
Gray Water	x					Review conditions of use for private residential gray water for clarity and fitness.
Gray Water	x					Develop more appropriate general permits for non-residential use of gray water, beyond irrigation.
Gray Water		x				Review residential gray water criteria. In particular, establish criteria to ensure that no gray water is discharged to or ponds on the land surface or otherwise creates a risk of vector-borne disease.
Gray Water		x				Require maintenance of residential gray water systems so that flow is not to the land surface.

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Gray Water		x				Need to establish better water quality standards for residential gray water use so that public health is protected.
Gray Water		x				Need to ensure that residential gray water systems are inspected and approved to prevent contamination of potable systems.
Gray Water		x				Need ensure that there is a log of all residential gray water systems so that they can e inspected (once every 5 or 10 years) to protect from source water vectors (think Zika), prevent comingling with stormwater, and protect human health and the environment (excessive salt loading in soil)
Gray Water		x				The rules for residential gray water use need to be revisited as the current permit-less process is not truthful and not working.
Gray Water		x				Make gray water permitting easy so that people will install systems secretly to avoid the red tape.
Gray Water		x				Residential gray water users should have to submit a notice of intent to the administrative authority and pay an administrative fee for registration.
Gray Water		x				ADEQ should delegate permitting of residential gray water to local administrative authorities as ADEQ now does for the permitting of septic tanks and alternative onsite systems.
Gray Water		x				Residential gray water use is regional and the uses and practices are different, therefore the program should be delegated to local county and city authorities.
Gray Water		x				Develop streamlined gray water permits for commercial and industrial laundries.
Gray Water		x				Integrate gray water use into stormwater use in a manner that protects human health due to microbial and chemical contamination and makes use of the gray water during months of low rainfall (and therefore stormwater).
Gray Water					x	Don't change Arizona's gray water regulations as they were and are the model for other States looking more closely at gray water as a good source of outdoor irrigation.

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Gray Water					x	The private residential regulations have served Arizona very well since they were promulgated. We strongly object to any attempt to roll them back.
Gray Water					x	The current graywater provisions under R18-9-711 for residential graywater use should not be changed.
Gray Water					x	The self-permitting process under the current regulations have helped ensure that graywater use and systems are talked about openly among diverse sectors of the community without fear of reprisal. This has fostered trust and openness among the community which is critical for promoting safe use of graywater and best practices. Any further restrictions will lead to systems being installed "under the radar" as was done in the past which is not advantageous for anyone.
Gray Water					x	With regards to the design and installation of residential graywater systems in the state of Arizona, our organization has trained over 250 professionals, taught over a 1000 residents, and installed over 100 residential graywater systems in the Tucson and Phoenix regions. In addition, Tucson Water has approved over 90 applications (as of January 2016) through its residential graywater incentive program with an estimated cumulative water savings of 1,810,795 gallons (6 AF) (Tucson Water January 2016 monthly conservation report). Through 10 years of education, installations, and use of graywater we have not heard or experienced any negative public health aspects resulting from use of a graywater system here in Arizona. There is no need to change the current residential graywater regulations.
Gray Water					x	As stated in a Q&A in the book by Art Ludwig, "Create an Oasis with Greywater": "Is grey water reuse safe? Yes. There are eight million grey water systems in the US with 22 million users. In 60 years, there have been one billion system user-years of exposure, yet there has not been one documented case of grey water transmitted illness." The current regulations should remain as is.

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Gray Water					x	The current regulations are fair, keep the public safe, and promote sustainable use of our scarce water resources.
Gray Water			x			Transfer gray water provisions to separate Article in rule. Gray water regulations should not fall under “reclaimed water.”
Gray Water			x			Gray water permitting needs to be managed by the Local Agency, similar to current delegations by ADEQ of septic tank and alternative onsite system permitting to county health and environmental agencies.
Gray Water			x			Require residential properties with gray water systems to be able to retain all stormwater from a significant rainfall event (10-year, 24-hour, possibly).
Gray Water				x		Gray water is not reclaimed water. It is incorrectly classified because it receives no treatment.
Gray Water				x		Gray water belongs with the onsite system regulations and should be delegated to local authorities. It is generated and used onsite.
Gray Water				x		Gray water reuse should no be a way of circumventing state law.
Gray Water				x		Household gray water (AAC R18-9-711) should be delegated to counties and belongs to the onsite systems program. Counties are interested in working with their communities to promote water conservation and efficiency and have knowledge of local conditions.
Gray Water				x		Double plumbing for gray water options.
Gray Water				x		Delegate gray water and reclaimed water general permits for flows up to the onsite system maximum.
Gray Water				x		Make it easier for residents to get gray water permits for home use.
Gray Water				x		Document use of gray water.
Gray Water				x		No Type 3 Gray Water Permit (AAC R18-9-719) for non-household gray water use.
Gray Water				x		Make snow with treated gray water.

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Gray Water				x		Gray water is an important use of water.
Gray Water				x		AAC R18-9-711 (household gray water use) causes confusion and conflict with local adopted building codes, LEED, International Residential Code, NSF 350, and similar.
Gray Water				x		Permits for onsite system effluent needs to be altered to provide the safe opportunity for onsite reuse of treated effluent from black and gray water systems.
Gray Water				x		Make household gray water permit better.
Gray Water				x		Keep and update the household gray water perm (711) and integrate it into onsite permitting, building codes and transfer inspections.
Gray Water				x		Household gray water permits (711) conflict with APP Type 4 permits for onsite systems.
Gray Water				x		The use of gray water changes the terms of the general permit for onsite systems. It alters the waste strength. This should be considered and discussed.
Gray Water				x		All of our current wastewater advanced treatment technologies under onsite system general permits produce a waste strength far superior to gray water. Consideration should be made in rule to allow a greater use of this treated wastewater locally through onsite systems.
Gray Water				x		Can gray water from residences be applied directly for distribution from a shower drain without any filtering?
Gray Water				x		711 conditions conflict with the current gray water regulations delegated to the counties. Suggest that the entire gray water section be moved over to the general permit process for Type 4 permits for onsite wastewater treatment systems.
Gray Water				x		Would like to see 711 conditions modified to offer a tiered approach. Keep 711 as Option 1, but have a next tier that allows advanced treatment units (onsite) for even further use. Current advanced treatment systems and

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						new technologies exist that would allow for even greater water conservation methods to be applied.
Gray Water				x		The counties are currently delegated permitting functions for onsite system flows from 3000-24,000 gallons per day. Gray water would be approximately 50% of those flows. To break this off for review by ADEQ in Phoenix makes no sense, is duplication of effort and submittals, money for permits, and confusion for builders/developers, building departments, etc. Delegate to counties is simple approach.
Gray Water				x		The Type 3 gray water permit for non-household gray water use should be moved into the APP Type 4 permits for onsite wastewater treatment systems.
Gray Water				x		Gray water is untreated, pathogen laden water that needs controls in place for the protection of the environment and public health.
Gray Water				x		No one is suggesting a repeal or roll back of the 711 conditions but a roll forward. After 15 years, there should be some discussion on modifications that could be made to make the program better and therefore easier to understand.
Gray Water				x		The 711 conditions for household gray water use need some modification to be more truthful. One example, instead of saying “no permits,” we might want to suggest if any modifications to building or plumbing fixtures that a building department permit may be required.
Gray Water				x		Documentation for household gray water users is not a bad thing. The program can still operate as designed but asking for minimal documentation will help ensure the system can be sustainably operated.
Gray Water				x		O&M manuals for household gray water users should be required so future owners/operators know how to operate and what limitations exist.
Gray Water				x		The household use of flood irrigation with gray water should be discontinued. Make it all subsurface or if it is used in wells around trees, have a minimum of 2 inches of mulch cover.

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Gray Water				x		Streamline commercial gray water permitting.
Gray Water				x		Clarify and provide consistency in gray water rules.
Gray Water				x		Develop rules that encourage residential and commercial gray water reuse.
Gray Water				x		Continue current best management practices for household gray water use.
Gray Water				x		Develop rules that allow pilot projects that utilize new technologies for gray water use.
Gray Water				x		Develop streamlined process for non-household reuse of gray water (municipal, commercial, industrial), especially those that don't involve public contact.
Other			x			Need positive public relations campaign to highlight safety and benefits to end uses.
Other			x			Rules should reward innovation, responsible public engagement, and sustainable practices of generators, distributors, and end users of reclaimed water (don't stifle innovation).
Other			x			Rules should take into account the ability of small systems to afford and maintain innovative wastewater treatment plants and reuse efforts.
Other			x			Put statement in rule that prioritizes funding/funding sources for reclaimed water systems.
Other	x	x	x			Certified operator requirements are necessary for reclaimed water distribution systems. Could use existing Distribution/Collection classifications with special training/certification.
Other			x			Criteria should be established for operators of reclaimed water systems, even if it requires a baseline Grade 2 certification in drinking water distribution or wastewater collection.
Other			x			Prefer reclaimed water endorsement to current operator certification classification, rather than separate certification classification. Should be under the current drinking water distribution system category, rather than

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						the wastewater collection system category, as distribution of reclaimed water parallels drinking water distribution most closely.
Other			x			Operator certification should be required only if reclaimed water is tied to an Aquifer Protection Permit or Reclaimed Water Permit, otherwise certification should not be required.
Other			x			There should be a confirmation that a certified operator has actually been retained, not just a name and number filed to obtain the permit.
Other		x				Clarify health concern differences between reclaimed water and different types of stormwater (roof vs. asphalt derived). Would different end uses be appropriate dependent on the source?
Other		x				Review and address the monitoring requirements for recharge of treated wastewater under an APP at a groundwater point of compliance (which are extensive) versus the requirements established for allowable end uses under the different reclaimed water classes (which are less extensive but still protective).
Other		x				Is reclaimed water that is recharged considered groundwater when it is pumped out?
Other				x		There was no meaningful public process when ADEQ approved reclaimed water for snowmaking.
Other				x		ADEQ did no research to determine the safety of humans who may come into contact with snow made from effluent.
Other				x		How legal was the process wherein reclaimed water was allowed for snowmaking?
Other				x		Investigate the Snowbowl permitting process.
Other				x		There was never adequate consultation with the public, none with the tribes.
Other				x		Why are there no listening sessions on this rule revision scheduled with tribes?
Other				x		Snowmaking is crucial to tourism.

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Other				x		Jobs depend on snowmaking.
Other				x		Permitting snowmaking has positively impacted the Flagstaff economy—tourism, taxes, employment all increased. Thank you.
Other				x		Ski areas across the country are now looking at using recycled water for snowmaking. Arizona set the precedent. Congrats.
Other				x		Snowbowl and the Forest Service undertook very comprehensive environmental impact analysis with many public meetings—adjudicated in Federal court.
Other				x		Skiing is great for our kids...builds in our children a care for the environment, keeps kids outside, creates stewards for the environment.
Other				x		Snowmaking allows much more dependable skiing. It helps introduce our children to nature. There is tangible benefit for the environment when investing in children enjoying outdoors. Idle children will cause more problems in our community than reclaimed water will. Invest in our community!
Other				x		Community needs to expand smart planning—more snowmaking at Snowbowl, downtown winter events, future tubing/sledding hill (we need it), and more soccer/ball fields.
Other				x		The economy of Flagstaff is dependent on its use of reclaimed water.
Other				x		Increase production of Class A+, A reclaimed water.
Other				x		Conduct a more robust PR campaign. Counter extremist misinformation with science-based facts. This will assure the continuity of reclaimed water.
Other				x		Education—signage should be positive promoting recycling.
Other				x		Education—signage requirements should be consistent in ADEQ rules.
Other				x		Publicize information regarding use of Class A/A+ water. Educate community that <i>E. coli</i> testing requires no pathogens...pathogen free.

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Other				x		Locals are the boots on the ground for implementing reuse.
Other				x		Objective is to use water over and over again safely, from small to very large sources of wastewater.
Other				x		What are the long term side effects of reclaimed water in our environment, aquifers, our children, and vulnerable immune systems?
Other				x		Consider effects on the development of amphibians in local drainages carrying reclaimed water (Class A/A+).
Other				x		Was the impact of reclaimed water on animals ever studied?
Other				x		Test aquifers regularly to determine impact of reclaimed water reuse—contaminants of emerging concern (CECs) and other toxics.
Other					x	Also, some of the permitted facilities have intermittent flows where there may be no discharge for multiple days during a week. With no flow samples cannot be obtained. Some permits require a minimum number of samples per week. There ought to be language within the permit that indicates that a facility with no discharge samples are not required.
Other				x		Liability: If a critical accident occurs putting the public at risk, who is responsible? City/local government? State? Regulatory agency? Is there a fund to deal with individual property loss? With temporary or permanent business losses? With healthcare expense, loss of life? The public is somewhat aware of this issue so it may be difficult for agencies to deny responsibility.
Other				x		Resolve conflict between R18-9-711 & R18-9-E303 (gray water permitting)
Other				x		Develop a 5 year renewable permit for commercial reuse of gray water up to 24,000 gallons and delegate
Other				x		Delegate 719 for flows up to 24,000 gpd to local jurisdictions
Other					x	The reuse rule making by ADEQ should include policies to reduce overall salt levels in wastewater. High total dissolved solids (TDS) in wastewater are a major determinant in: 1) What treatment methods are required

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						influencing capital costs. 2) The cost of treatment to reclaim the water. 3) The quality of the reclaimed water
Permits/Permitting Process		x				Don't abolish blending permit—it would limit opportunities for flexibility. In fact, consider expanding the scope of the blending permit to address issues such as combining reclaimed and surface waters, providing for additional treatment that doesn't fit the narrow terms of the current blending permit, etc.
Permits/Permitting Process		x				Consider how reclaimed water can be blended with another type of water (i.e., surface water or groundwater) so that it can be distributed for a reclaimed water use currently in Appendix A, other uses not in Appendix A, or as a potable source.
Permits/Permitting Process	x	x				Add provisions for amending the reclaimed water permit, including making simple amendments similar to the major/other/minor amendment processes in APP.
Permits/Permitting Process		x				Clarify terminology or make consistent between ADEQ (reclaimed water) and ADWR (effluent).
Permits/Permitting Process		x				Modernize terminology to reflect the high quality of reclaimed water that is being distributed for reuse (for example, adopt the term recycled water). Further examples include ADEQ's use of the terms sewage treatment plant and wastewater treatment facility when the term water reclamation facility is increasingly being used in the industry.
Permits/Permitting Process		x				For certain uses of Class A+ reclaimed water, consider regulating under a Type 1 permit (no formal application or registration, permittee simply follows criteria specified in rule) as opposed to current regulation under a Type 2 permit (formal submittal of Notice of Intent to ADEQ).
Permits/Permitting Process	x					Review permit renewal periods
Permits/Permitting Process	x					Should the Class A+ permit be redesignated from a Type 2 permit to a Type 1 permit?

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Permits/Permitting Process	x	x	x			Agent Permit should be changed to a Reclaimed Water Distribution System permit and required for pipeline distribution systems of reclaimed water to ensure consistent permitting requirements and technical criteria across all distribution systems.
Permits/Permitting Process					x	Allow alternatives to disinfection such as Soil Aquifer Treatment as satisfying BADCT at our WRFs for APP and AzPDES;
Permits/Permitting Process	x					Should the Blending Facility Permit be abolished?
Permits/Permitting Process			x			The Type 3 Reclaimed Water Agent Permit should be effective for more than 5 years because the reclaimed water quality standards are already incorporated in the Aquifer Protection Permit for the wastewater treatment plant and use is reported annually.
Permits/Permitting Process			x			End use permits should be effective for the lifetime of the permit and provision should be added for ownership changes. Perhaps an annual fee is feasible.
Permits/Permitting Process			x			Need fast-track or streamlined permitting for systems that meet sustainable practice goals and water management goals set by ADEQ/ADWR.
Permits/Permitting Process			x			Emphasize performance standards over prescriptive standards in permitting—standards over machines.
Permits/Permitting Process			x			Prohibit an HOA from obtaining a Reclaimed Water Agent Permit or to manage a distribution system.
Permits/Permitting Process			x			Do not convert Type 2 end user permits to general permits.
Permits/Permitting Process			x			Prohibit Type 2 end use permit holders from “wheeling” (selling or transferring) reclaimed water.
Permits/Permitting Process			x			Clarify or specify delegation authorities of reclaimed water permits between state and counties.
Permits/Permitting Process			x			Permit should require real time monitoring for upsets.

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## Reclaimed Water Stakeholder Issues Matrix

Topic	ADEQ Ideas	12-Feb	10-Mar	5-May	Other	Comment
Permits/Permitting Process			x			Recommend/require backup disposal methods during periods when effluent quality does not meet reclaimed water quality standards (storage, recharge, AZPDES discharge).
Permits/Permitting Process			x			Each reclaimed water system should pass an onsite inspection pending permit renewal.
Permits/Permitting Process			x			A full operational report should be submitted by the operator on an annual basis.
Permits/Permitting Process			x			There needs to be a stringent performance review process, pending each renewal of permit. Trust but verify.
Permits/Permitting Process			x			There needs to be a mechanism for standards enforcement, i.e., annual reports, water quality reports, etc. ADEQ must be willing to be tough on this.
Permits/Permitting Process			x			ADEQ should develop and maintain a central system tracking database for annual reports, system information, test results, etc.
Permits/Permitting Process			x			Need to develop pilot permitting criteria for small direct potable reuse projects.
Permits/Permitting Process			x			Rules should include spill notification, clean up, remediation, and reporting requirements, similar to Sanitary Sewer Overflow (SSO) procedures.
Permits/Permitting Process				x		Clarify or revise signage requirements. Make a standard template.
Permits/Permitting Process				x		Signage needs to be larger and more specific about dangers of ingestion or immersion.
Permits/Permitting Process				x		Signage should say: No swimming, no fishing, no contact.
Permits/Permitting Process				x		Develop a standardized template for the user agreement between a reclaimed water agent and the end user.
Permits/Permitting Process				x		Permittees need to be responsible to ensure that use of reclaimed water will not breed mosquitoes.
Permits/Permitting Process				x		Permits should be non-transferable.

**What do the topics mean?**

**Conveyances/Infrastructure** includes requirements for pipeline and open water structures that carry reclaimed water  
**End Uses & Standards** includes the water quality standards for reclaimed water and the corresponding list of allowed end uses  
**Gray Water** includes usage and permitting requirements for private residential use and non-residential use of gray water  
**Other** is miscellaneous for anything that doesn't fit into the other categories  
**Permitting** includes the types of permits, permitting process, and permit requirements for the end use of reclaimed water

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Permits/Permitting Process				x		Shorten time frame to submit a Type 2 application—90 days is too long.
Permits/Permitting Process				x		Permitting process need public input to ensure that permits are culturally sensitive.
Permits/Permitting Process				x		Modify rule to allow mixing of reclaimed water and stormwater.
Permits/Permitting Process				x		You cannot keep wastewater from mixing with storm runoff. It violates your own rules.
Permits/Permitting Process				x		Allow Class A+ water to be used for dust control without a permit.
Permits/Permitting Process				x		Allow Class A and B reclaimed water as a supplemental source for drinking water treatment plants.
Permits/Permitting Process				x		Allow use of reclaimed water for Flagstaff downtown winter snow event.
Permits/Permitting Process				x		Permitting process should clarify method of discharge when treatment standards are not met.
Permits/Permitting Process				x		Skiing and sledding are full immersion activities and are therefore illegal by your own rules.
Permits/Permitting Process					x	Rename wastewater treatment plants and sewage treatment plants in the ADWR and ADEQ regulations to either Water Reclamation Facilities (WRFs), Water Resource Recovery Facilities (the Water Environment Foundation) is advocating for this), or Water Resource Recycling Facilities.
Permits/Permitting Process				x		Amend AAC R18-9-701(1)(c) to just read “a program that protects workers and the public...” [Note: This provision currently excludes the use of industrial or reclaimed water from reclaimed water permitting provisions if the workplace is subject to a federal program that protects workers from workplace exposures, i.e., OSHA and MSHA].
Permits/Permitting Process				x		AAC R18-9-704(B) should not apply to vineyards, hydroponics or other industrial or agricultural uses or reclaimed water. [Note: This provision deems that a person receiving reclaimed water and providing additional treatment for higher quality direct reuse is considered a sewage treatment facility and must operate under an individual Aquifer Protection Permit].

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Permits/Permitting Process				x		Clarify the requirements for irrigating with reclaimed water in AAC R18-9-704(F) and the prohibitions in R18-9-704(G). Class A and A+ reclaimed water should have fewer restrictions than lower classes.
Permits/Permitting Process					x	Being mindful of SB1598 effective July 20, 2011, clarify the delegation of authority between ADEQ and the Maricopa County Environmental Services Department over wastewater treatment facilities/water reclamation facilities, reclaimed water distribution facilities and infrastructure, and reuse sites; this should also include clarification of authority for inspecting reclaimed water distribution facilities and infrastructure, and reuse sites for compliance or enforcement; requiring additional permits, reports, fees, surcharges, user and operations and maintenance manuals. This approach should be acceptable since the stakeholder process leading to the proposed new regs will vet all of these infrastructure, permitting, signage, standards, monitoring and O&M issues. Standards and monitoring, for example, will address health and safety; thus, applying a County or City health code to justify duplication of the new rules and requirements therein is expressly prohibited by SB 1598. Claiming jurisdiction “to prevent the creation or maintenance of unhealthful, unsanitary conditions or public health nuisances” should require comprehensive scientific evaluation in evidence to add onto the newly developed rules that will be based on best management practices and the extensive research conducted within the industry and its professional organizations.
Permits/Permitting Process					x	Ensure ADEQ is THE regulatory authority over reclaimed water treatment, distribution and end users/end use (not including gray water); local authority (County, City, Town) should only be allowed for gray water.
Permits/Permitting Process				x		Permitted uses are being widely considered because of potential economic benefits which are humongous. But potential risks are increased due to public health issues that have not been resolved (and may not be) as well as liability impacts on the economy. This approach is wrongheaded and

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						bad consequences are certain at some point. It is a mistake to pursue this path.
Permits/Permitting Process				x		Accidents: Several residents in an area of Flagstaff got very sick with G.I. symptoms when <u>conventional</u> potable water lines were reattached and flushed. These were healthy, young, nonimmune-impaired people. What new issues will we face with reclaimed water? So much we do not know. The risk is too great. Do not extend permitting, do restrict risky permitting.
Permits/Permitting Process				x		ADEQ should ensure that reclaimed water is treated safely, not just at low cost.
Permits/Permitting Process				x		More efficient permit is needed for temporary irrigation with reclaimed water.
Permits/Permitting Process					x	Eliminate the BADCT approach for recharge and potable reuse by utilizing performance standards for appropriate constituents.
Permits/Permitting Process					x	ADEQ needs to adopt a different approach for projects where reclaimed water is used for environmental purposes. Such projects may be described as habitat restoration, riparian projects, riparian restoration, ecosystem restoration, environmental restoration, or environmental enhancement. Often, reuse for environmental purposes is incorporated into a multipurpose project that includes public recreational use. Accommodating use of reclaimed water to support these types of projects involves building flexibility into reclaimed water quality standards and permit rules. ADEQ should develop BMPs and reuse permit coverage for reuse projects operating in and adjacent to riparian settings (within the floodplain) so that these types of projects could be recognized as an appropriate use of reclaimed water. ADEQ could identify a separate reuse classification for environmental restoration or multipurpose projects with environmental restoration as a component. ADEQ could identify special BMPs for reuse projects in riparian areas that would address designation of appropriate location of irrigated vegetation (for example outside of active channels),

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						<p>type of irrigation system used (for example restricted spray or drip); volume of application (for example, not in excess of calculated plant uptake); technology used (for example timers and moisture or rain detection devices).</p> <p>ADEQ should address de-chlorination requirements for riparian projects using reclaimed water. ADEQ should take into account the potential value of chlorine residual where public protection is necessary, such as in recreational trail and park settings. For use of reclaimed water in multi-purpose projects, the benefit of de-chlorination needs to be weighed against the risk. Use of reclaimed water for environmental enhancement is often conducted in the same setting as irrigation for park and recreational use. Forcing the operator to dechlorinate is often not appropriate, considering the total picture for human health and environmental benefit. Also, consideration could be given to chlorine reaction, absorption, and dissipation achieved by site conditions. There could be BMPs developed that incorporate issues such as infiltration, soil type, vegetation density, timing of application, etc.</p>

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