

Direct Potable Reuse (DPR)

Stakeholder Meeting
July 28, 2022
1:00 p.m. – 3:00 p.m.





1. Review agenda and logistics
2. Welcome and introductions
3. What is direct potable reuse?
4. What are we doing and why now?
5. Where are we going?
 - Recommended components
 - Timeline
 - Technical Advisory Group (TAG)
 - ADEQ DPR Webpage
6. Guiding principles and program features
7. Open Discussion



WELCOME

Randall Matas

Deputy Director

ADEQ Water Quality Division



What is direct potable reuse?

ADEQ Reclaimed Water History

- 1926 - Reuse of reclaimed water began at South Rim, Grand Canyon
- 1932 - Reuse of effluent from 23rd Ave. WTP to irrigate Peterson Farms
- 1972 - First reclaimed water rules by ADHS
- 1973 - WTP effluent to cool Palo Verde Nuclear Generating Station
- 1980 - GW Management Act limited legal use of water from aquifers in high use areas in the state Scottsdale
- 1989 - *APS v. Long*, AZ Supreme Court case deciding effluent is a resource subject to regulation and a commodity that utilities and governments could buy and sell
- 2001 - New comprehensive reclaimed water rules
- 2018 - Rule revision to allow direct potable reuse of purified water for human consumption



Reuse in Arizona: Tucson Example

- >173 miles of purple pipes
- Serves >1000 customers including schools, parks, golf courses, and single-family homes
- >30 mgd of reclaimed water is delivered during summer

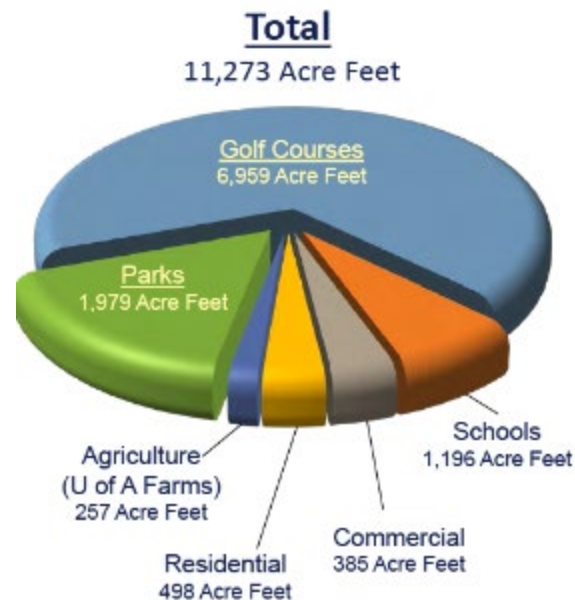
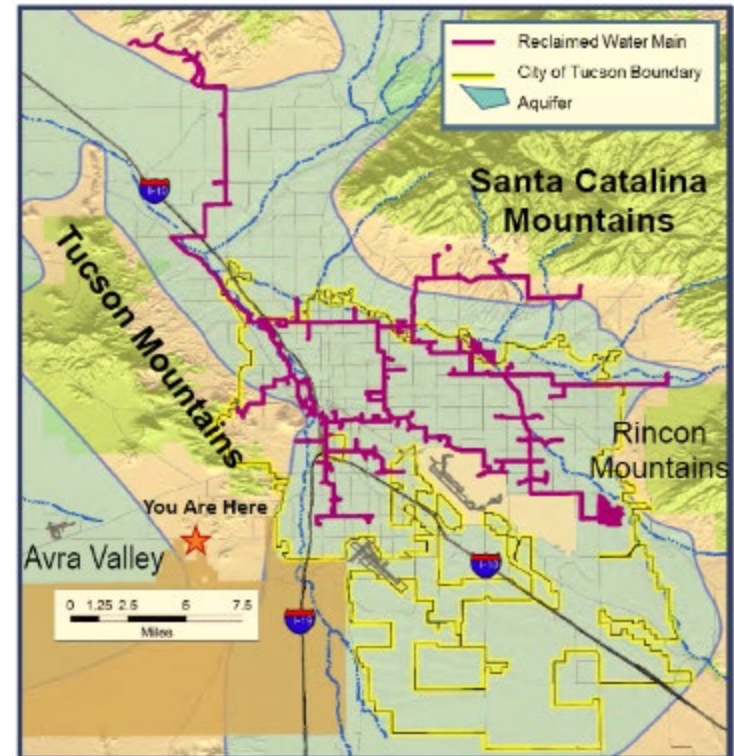


Table 1: 2010 Wastewater Effluent Utilization for Phoenix Active Management Area (AMA) Data source: ADWR annual water reports, ADWR assured water supply decrees, and/or water resource plans from 33 water utilities in the Phoenix AMA gathered as part of Decision Center for a Desert City WaterSim modeling project.

| Effluent Use | Acre Feet per Year | Percentage of Available Effluent |
|-------------------------------|--------------------|----------------------------------|
| Total Wastewater Produced | 371,489 | |
| Power | 80,000 | 22% |
| Agriculture | 81,657 | 22% |
| Recharge | 79,374 | 21% |
| Environment (i.e., Tres Rios) | 39,200 | 11% |
| Discharged (uncommitted) | 67,893 | 18% |
| Total Effluent Reused | 303,596 | 82% |

Source: Decision Center for a Desert City, *Water Reuse in Central Arizona* (Oct. 2013).

What is Direct Potable Reuse?

Recycled or reclaimed water

Water that has been used more than once to expand a community's available water supply.

Potable reuse

Use of recycled or treated reclaimed water that is safe for drinking.

May be accomplished directly or indirectly

Indirect potable reuse

Wastewater or reclaimed water is treated to drinking water levels and discharged into an "environmental buffer"

"Environmental buffer" is a natural depository such as a groundwater aquifer or surface water.

Direct potable reuse (DPR)

Water is treated and distributed as a drinking water supply without an environmental buffer

Purified water may be introduced directly into an existing drinking water treatment plant or distribution system

(Potable water – water treated appropriately for human consumption, i.e., to safely be used as drinking water and for other everyday uses such as bathing or dishwashing)

De facto Water Reuse



Indirect Potable Reuse

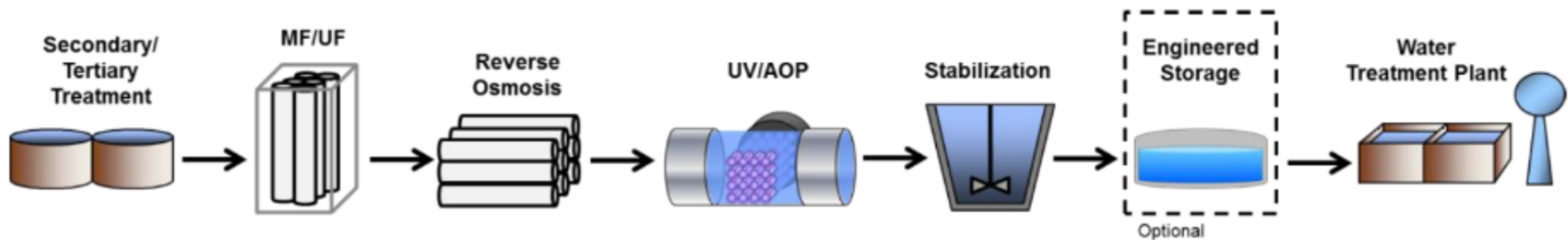
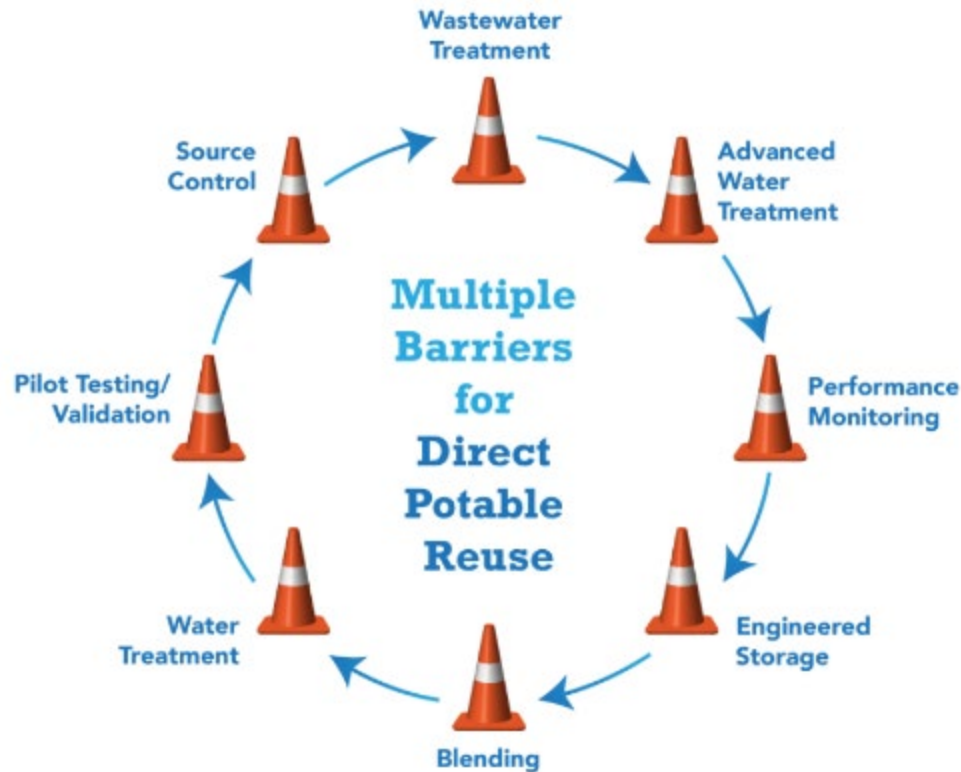


Direct Potable Reuse



Types of Potable Reuse. Source: Texas Water Development Board

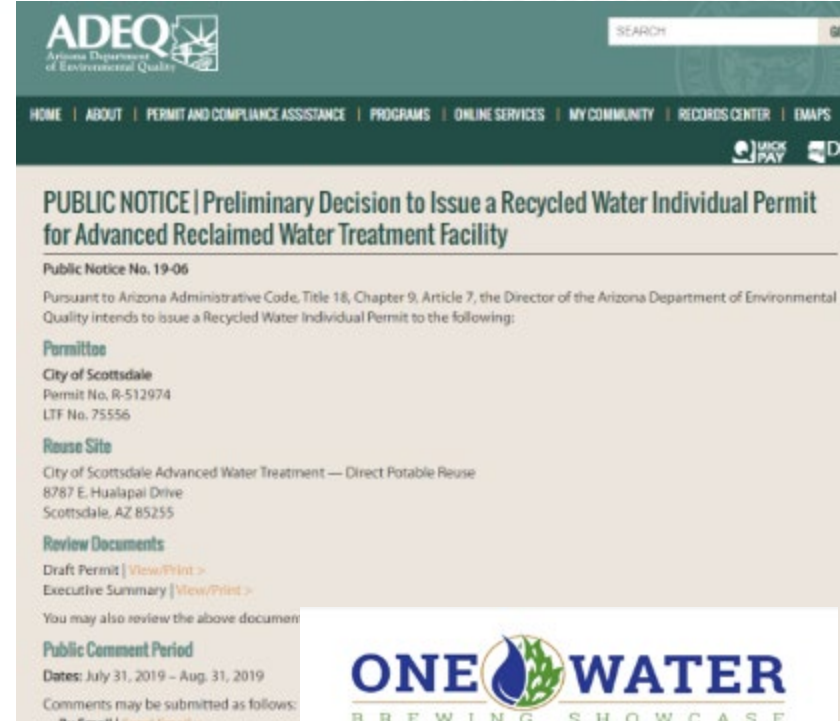
Potable Reuse: Multi-barrier treatment



Isn't DPR Happening in Arizona Already?

In 2019, the City of Scottsdale obtained a permit under A.A.C. R18-9-E701 for:

- A drinking fountain for demonstrations, and
- Supplying water to beverage manufacturers (e.g., beer).
- Has been doing IPR for decades



The screenshot shows the ADEQ website's public notice page. At the top, there is a search bar and navigation links for HOME, ABOUT, PERMIT AND COMPLIANCE ASSISTANCE, PROGRAMS, ONLINE SERVICES, MY COMMUNITY, RECORDS CENTER, and EMAPS. The main heading is "PUBLIC NOTICE | Preliminary Decision to Issue a Recycled Water Individual Permit for Advanced Reclaimed Water Treatment Facility". Below this, it states "Public Notice No. 19-06" and "Pursuant to Arizona Administrative Code, Title 18, Chapter 9, Article 7, the Director of the Arizona Department of Environmental Quality intends to issue a Recycled Water Individual Permit to the following:".

Permittee
City of Scottsdale
Permit No. R-512974
LTF No. 75556

Reuse Site
City of Scottsdale Advanced Water Treatment — Direct Potable Reuse
8787 E. Hualapai Drive
Scottsdale, AZ 85255

Review Documents
Draft Permit | [View/Print >](#)
Executive Summary | [View/Print >](#)

You may also review the above document

Public Comment Period
Dates: July 31, 2019 – Aug. 31, 2019
Comments may be submitted as follows:
[By Email](#) | [Social Comments](#)

ONE WATER BREWING SHOWCASE

In 2019, Scottsdale Water will become the first water agency in Arizona to be permitted to supply recycled water for potable use. To celebrate this landmark achievement, Scottsdale Water is teaming with the city's premier public art and education event, Canal Convergence, to create the One Water Brewing Showcase – a unique opportunity for Arizona breweries to share their craft beer creations while bringing awareness to the global need for innovative water treatment technologies.

THE BASICS

- The One Water Brewing Showcase is open to commercial brewers licensed to produce a saleable product in Arizona at time of registration.
- Participation will be capped at 10 breweries.
- Judging will follow World Beer Cup rules.
- At least 50 percent of the water used in the brewing process must be recycled water provided by Scottsdale Water.
- Brewers may collaborate in the submission of an entry.
- Breweries must agree to donate three half-barrel kegs of the judged beer to Canal Convergence and participate in the One Water Brewing Showcase on Nov. 8 or 9, 2019.
- Participants must commit to storing, delivering and providing staffing to serve their beer at one day (Nov. 8 or 9) of the event. Volunteers to support the brewers may be available upon request.
- All proceeds from beer sales at the two-day One Water Brewing Showcase will go to Scottsdale Arts and their designated charity. An in-kind tax document for the keg donation will be provided to the breweries.
- Breweries are allowed – and STRONGLY encouraged – to commercially sell and market their One Water Brewing Showcase beer in compliance with Arizona laws.
- Scottsdale Water will provide tap handles for brewery use.
- A non-refundable fee of \$100 per brewery is due at time of registration and breweries may enter up to two beers of different styles.



What are we doing and why now?

What are we doing?

Provide more specificity in rule

Build on past work and evaluate other state programs.

Demonstrate safety and efficiency of the rules and program

Bridge legal gaps to align with other legal programs
(SDWA & APP & CWA)

Program implementation and outreach planning

Why Is ADEQ Doing This Now?

- Legislation – HB2861 & HB2862
- Water supply issues
 - Colorado River water shortage cuts (30%)
- Utilities need specificity to plan
- Communities need to know the water is safe



Source: ADWR via Bureau of Reclamation

ARIZONA'S WATER SUPPLY

36%

COLORADO RIVER

18%

IN-STATE RIVERS



5%

RECLAIMED WATER

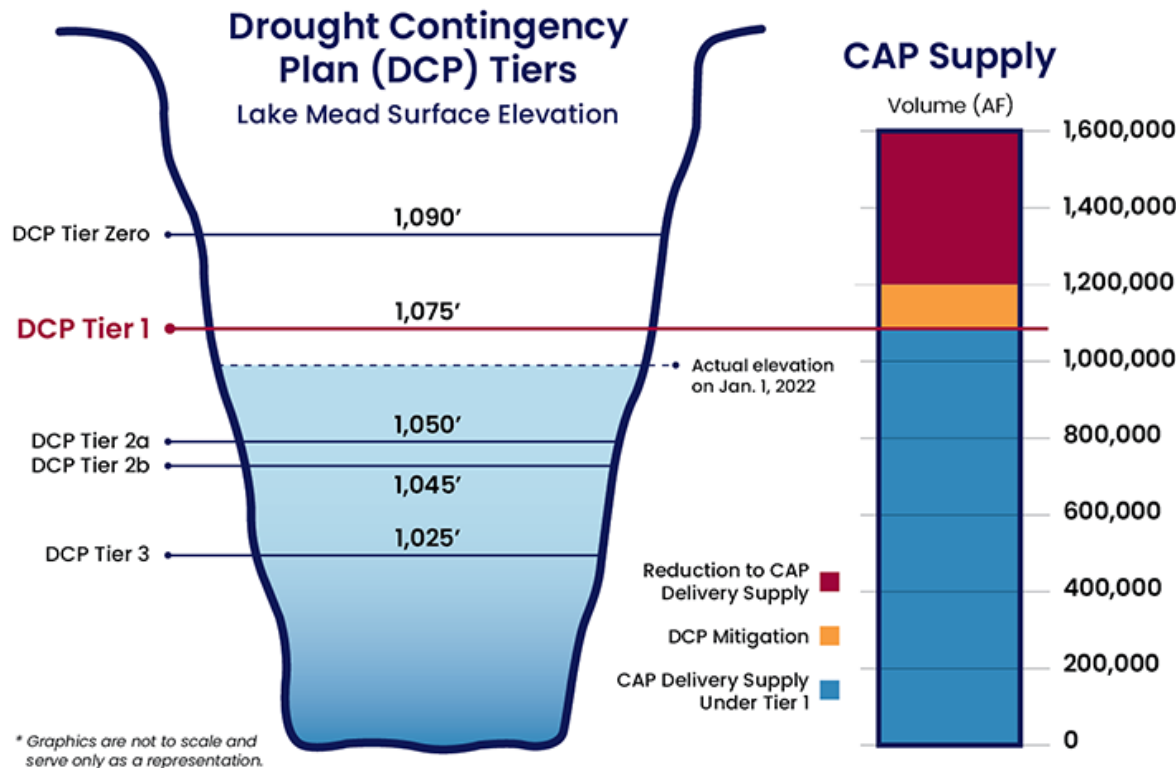
41%

GROUNDWATER

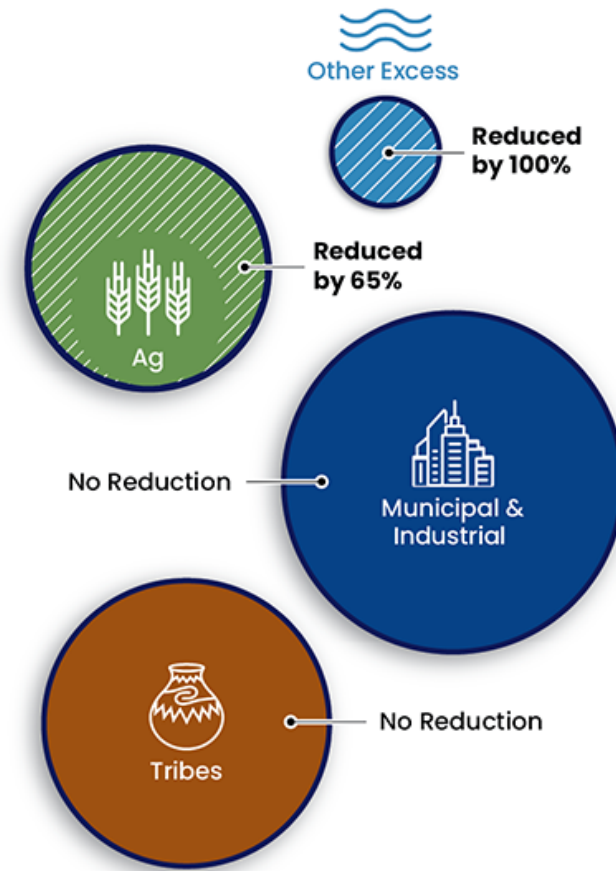
SOURCE: ADWR, 2020



Tier 1 Shortage: CAP Reductions



2022 Reduction to CAP Users After DCP Mitigation

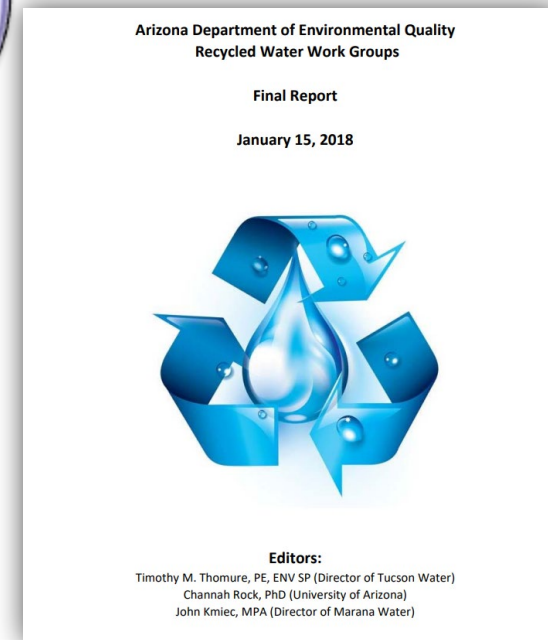


To learn more, please visit: www.cap-az.com/colorado-river-shortage

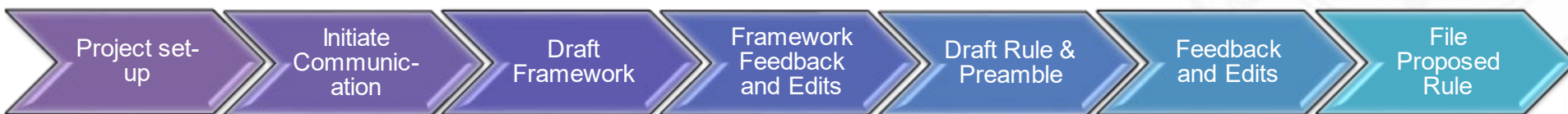


Where are we going?

Recommended DPR Program Components



Rulemaking Critical Path Timeline



- Initial research
- June 2022**

- Initial Stakeholder meeting and Tribal Listening Session
- Late July 2022**

- TAG* Applications due
- Aug. 12, 2022**

- Initial TAG* meeting
- Late Sept. 2022**

- Gather initial stakeholder input
- Internal draft framework document (including internal review and approval)

- Beginning of April 2023**

- Send framework document for stakeholder review

- Stakeholder feedback received
- Mid-May 2023**

- Revise as needed

•**August 2023**

•**September 2023**

•**1st Quarter 2024**



*TAG = technical advisory group

Implementation Critical Path Timeline

AZ-specific
studies

Outreach
Plans

Draft DPR
Guidance

Draft
Standard
Forms and
Processes

Periodic
Update Plan

**By December
2024**



Technical Advisory Group Process

Application process

- Questionnaire
- Review of applications and solidification of group roster

First meeting

- Review Charter and Workplan

Advise ADEQ in drafting the framework document

Advise ADEQ in drafting rules

Advise ADEQ in drafting guidance



How to Find the Recycled Water Webpage

[Air Quality Programs](#) ▶

[Water Quality Programs](#) ▶

[Waste Programs](#) ▶

[Other Programs](#) ▶



[Arizona Water Watch](#)

[Engineering Review](#)

[Groundwater Protection](#)

[Monitoring Assistance Program](#)

[Operator Certification](#)

[Public Water System \(PWS\)](#)

[Recycled Water](#)

[Safe Drinking Water](#)

[Surface Water Monitoring & Assessment](#)

[Surface Water Protection](#)

[Watershed Protection](#)

PFAS Resources

Arizona's clearinghouse for PFAS information, guidance and state actions.

How to Find the DPR Rulemaking Webpage



SEARCH

GO >

[HOME](#) | [ABOUT](#) | [PERMIT AND COMPLIANCE ASSISTANCE](#) | [PROGRAMS](#) | [ONLINE SERVICES](#) | [MY COMMUNITY](#) | [RECORDS CENTER](#) | [EMAPS](#)



[< RETURN TO LEARN MORE ABOUT THE WATER QUALITY PROGRAMS](#)

Recycled Water

Revised on: July 13, 2022 - 2:52pm

The Recycled Water Program regulates the use of recycled water.

Recycled Water is a processed water that originates as a waste or discarded water, including reclaimed water and gray water, which can be used for beneficial purposes upon meeting designated water quality standards.

Gray Water

Gray water is wastewater that has been collected separately from a sewage flow and that originates from a clothes washer or a bathroom tub, shower or sink, but gray water does not include wastewater from a kitchen sink, dishwasher or toilet. Gray water uses, such as landscape irrigation, augment Arizona's water supply.



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SEE MORE

[Recycled Water Program >](#)

[Recycled Water Rulemaking >](#)

[Gray Water >](#)

[Direct Potable Reuse Rulemaking >](#)

[< RETURN TO ACTIVE RULEMAKINGS](#)

Direct Potable Reuse (DPR) Comprehensive Rulemaking

Revised on: July 19, 2022 - 10:20am

Summary:

ADEQ is in the process of revising the Arizona Administrative Code (A.A.C.) to allow for expansion of potable reuse for facilities subject to the Safe Drinking Water Act and for pilot, demonstration, or educational facilities. Expanding potable reuse will improve the sustainability of Arizona's water supplies.

While potable reuse, direct and indirect, is currently allowed under ADEQ's rules in A.A.C. Title 18, Chapter 9, Article 7, additional regulatory specificity is needed to ease water suppliers' ability to engage in potable reuse. ADEQ will rely heavily on stakeholder involvement and expertise during this revision process.

Additional Information:

- Stakeholder Engagement Materials | [View >](#)
- Frequently Asked Questions | [View >](#)
- For notifications and updates regarding the development of a DPR program and the Technical Advisory Group, subscribe to our Water Quality Rulemakings list | [Subscribe to Receive Updates >](#)



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SEE MORE

[DPR Comprehensive Rulemaking >](#)
[Stakeholder Engagement Materials >](#)
[Technical Advisory Group >](#)
[Frequently Asked Questions >](#)



MEETING INFORMATION

[Upcoming Meetings >](#)

[Subscribe to Receive Updates >](#)

< RETURN TO DIRECT POTABLE REUSE (DPR) | MEETINGS AND MATERIALS

Direct Potable Reuse (DPR) | Technical Advisory Group

ADEQ will form the following technical advisory group (TAG) to assist in developing an implementable direct potable reuse (DPR) rule and program.

The TAG will continue efforts began by a work group in 2017 to create a more robust DPR rule and program than currently exists in A.A.C. R18-9-E701. The group will have a charter describing the scope of work, the group's commitments and a high-level schedule.

Draft Technical Advisory Group Charter | [View/Download >](#)

~SCROLL DOWN~

matter

- Willingness to fully participate
- Diversity of backgrounds and interests
- Geographic diversity

Anyone interested in serving on the TAG should complete the online application by Friday, Aug. 12, 2022, 5 p.m. | [Complete Application >](#)

Tasks

The TAG will complete tasks, including:

1. What stakeholder or stakeholder group are you most closely affiliated with?

Examples include: wastewater treatment operators, drinking water treatment operators, legal counsel for [category of entity or company], municipal drinking water utility, etc.

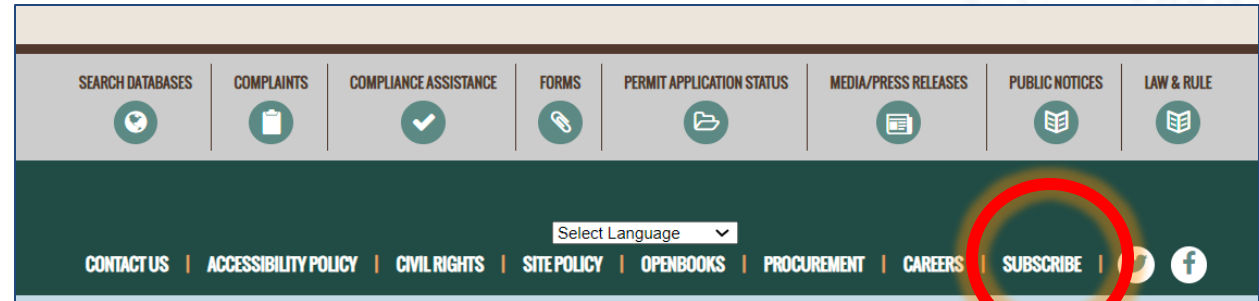
2. Are you applying as a representative of a particular entity? Which one?
3. Briefly explain your relevant experience and any technical or policy expertise that will benefit the group and ADEQ.
4. Why are you interested in serving on the technical advisory group?
5. Are you willing to fully participate in the TAG meetings and complete any action items assigned?
6. In what municipality do you live?
7. Contact Information

SUBSCRIBE to receive notifications

1. Go to
<https://www.azdeq.gov/>



2. Scroll Down and Click
“Subscribe”



3. Enter your email and
follow the prompts

A screenshot of the ADEQ subscription form. The form is titled 'Email Updates' and includes the following text: 'Sign up below to receive updates from Arizona Department of Environmental Quality (ADEQ) on your selected topic or topics. You can choose to modify your preferences on the next page.' Below this, it says: 'Please select a subscription type (email or SMS/Text Message) and enter your contact information. You will be prompted to confirm your contact information and preferences on the next page.' The form has a 'Subscription Type' dropdown menu set to 'Email', an 'Email Address' field with the value 'hnh240@gmail.com', and 'Save' and 'Cancel' buttons at the bottom.

4. Scroll Down and Click:
“Water Quality Division Rulemaking” and save
your preferences

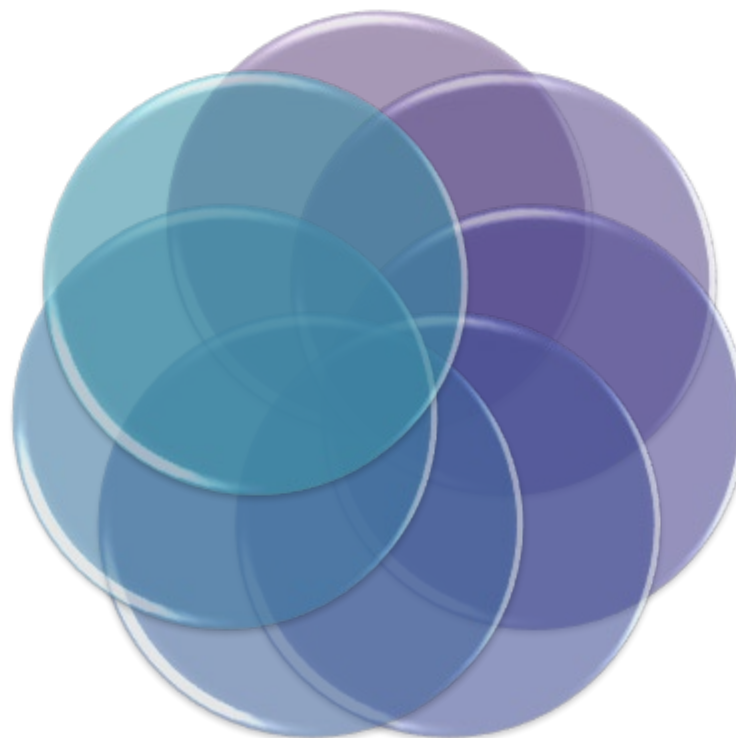
A screenshot of the ADEQ rulemaking selection form. It shows a list of rulemaking topics with checkboxes: 'Rulemaking' (unchecked), 'Air Quality Division Rulemaking' (checked), 'Waste Programs Division Rulemaking' (checked), and 'Water Quality Division Rulemaking' (checked). The 'Water Quality Division Rulemaking' option is circled in red.

Scientifically Defensible

Accounts for
future conditions
and growth

Transparent,
Informative,
Communicative,
convincing

Community
Supported



Protective of
Public Health and
the Environment

Reasonably
affordable

Specific, practical,
flexible, and
implementable

Rule or Program Features to Enact Principles

1. Scientifically
Defensible

2. Protective of
Public Health and
the Environment

3. Reasonably
affordable

4. Specific,
practical, flexible,
and implementable



7. Accounts for
future conditions
and growth

6. Transparent,
Informative,
Communicative

5. Community
Supported

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Questions? Comments?

Email:

reuserulemaking@azdeq.gov





Open Discussion