

# Direct Potable Reuse (DPR): Technical Advisory Group (TAG) Kickoff Meeting

October 5, 2022

2:00 - 3:00





# WELCOME

Randall Matas

*Deputy Director*

*ADEQ Water Quality Division*

# Meeting Agenda

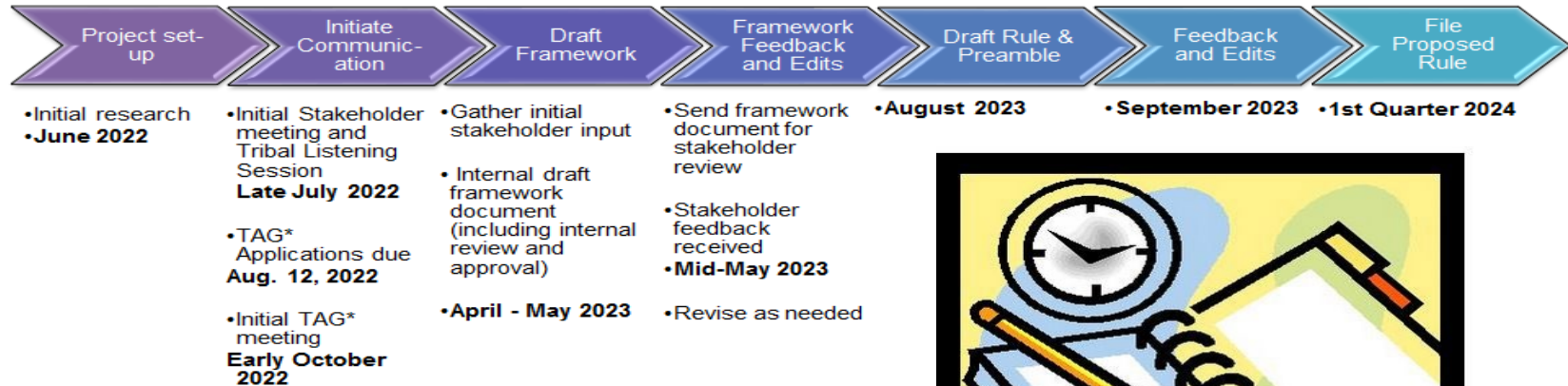
1. Welcome and Staff Introductions
2. Review Agenda and Meeting Logistics
3. DPR Project Timeline
  - TAG Process
1. Direct Potable Reuse Rulemaking
2. Technical Advisory Group Subgroups
3. TAG Recommendations and Justifications
4. Future TAG Meeting Logistics and Next Steps
5. Open Discussion





# Timelines and Process

## Critical Path Rulemaking Timeline:



# Technical Advisory Group Process

## Application Process – Due August 12, 2022

- Questionnaire
- Review of applications and solidification of a group roster

## Kickoff Meeting – October 5, 2022

- Future meeting logistics
- Review subgroups

## Advise ADEQ On Documents: October 2022 – May 2023

- Drafting the Framework Document
- Drafting Rules
- Drafting Guidance Document

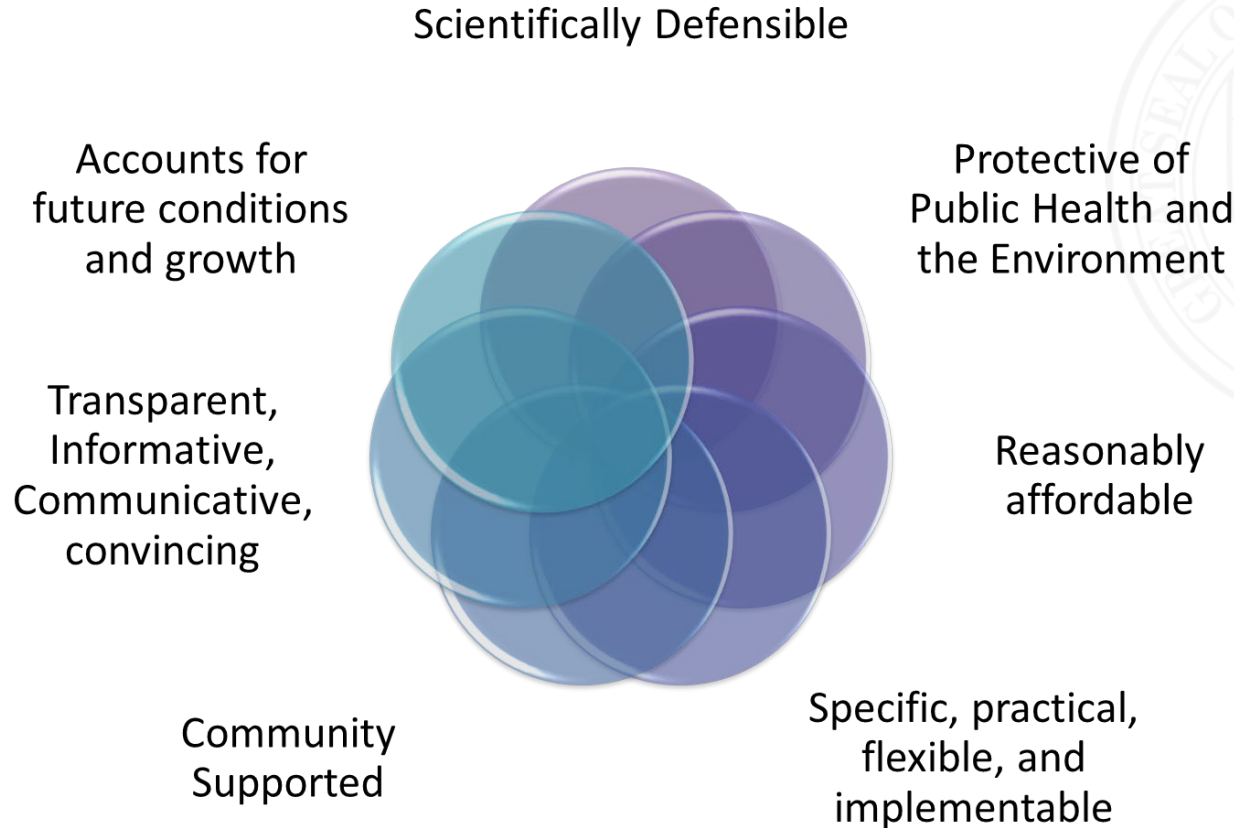
## Tasks: October 2022- May 2023

- Provide input to ADEQ on how to prioritize issues based on varying stakeholder perspectives
- Bring in guest speakers to inform the group and ADEQ on technical and political issues related to DPR
- Provide information to the group and guide ADEQ in its decision-making process
- Draft analyses as necessary to inform the group and guide ADEQ
- Review ADEQ documents and providing feedback and edits





# Direct Potable Reuse Rulemaking







Title 18: Environmental Quality  
Chapter 9: Department of Environmental Quality  
Water Pollution Control  
Article 7: Use of Recycled Water  
Part E. Purified Water for Potable Use  
R18-9-E701. Recycled Water Individual Permit for an  
Advanced Reclaimed Water Treatment Facility

## Existing Rule Lacks

- Long Term permitting process & review
- Long Term operational requirements
- Alignment w/SDWA & APP programs
  - clarification on how AZ's DPR program will fit into the existing regulatory fabric
- Details for design for Advanced Treatment Facility (AWT) & treatment train
- A time period for monitoring of source water constituents
- Pilot testing requirements
- Clarity in unregulated constituents to be monitored in source water
- Specific logarithmic reduction target requirements
- Monitoring requirements
- Amongst other necessary considerations...

## Missing:

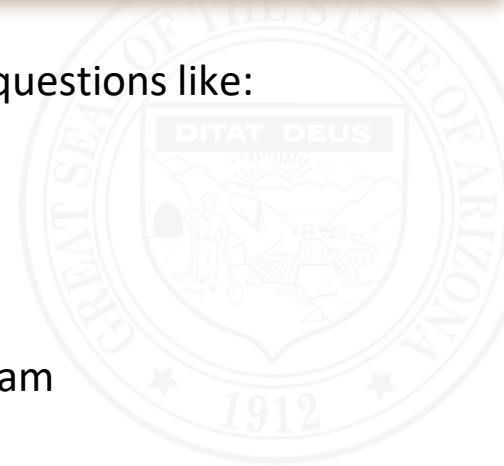
- Pathogen Treatment - Log Reduction Value Target \ Implementation:
  - CA - 12-log virus, 10-log Giardia, and 10-log Cryptosporidium
  - TX - 8-log virus, 6-log Giardia, and 5.5-log Cryptosporidium
  - AZ - ?
- Chemical Removal Standards:
  - Types, Tiers or Levels of Chemical Constituents to be Monitored
  - Required treatment barriers, performance targets, consistency





# TAG Purpose - Recommendations, Advice, Rationale

- Provide advice & rationale that defensibly addresses DPR program questions like:
  - Performance, Monitoring, and O&M Requirements
  - Design Elements
  - Operator Qualifications
  - Technical, Managerial, and Financial Requirements
- Provide recommendations on the safety and efficiency of the program
- Share experience and offer guidance in bridging any legal gaps, such as alignment with the SDWA & the APP
- Recommend plans for a smooth program implementation





# Technical Advisory Subgroups



## Expertise in Pathogen Control

- **Microbiologists (e.g. Academics).**
- Environmental Engineers (Designers).
- Manufacturers.
- Operators - What changes are being recommended and how it impacts what they do.
- Regulators.
- **Lab experts - What can measured & at what level?**
- **Risk assessors (human health).**

## Key

**Unique expertise**

# 1. Pathogen Control

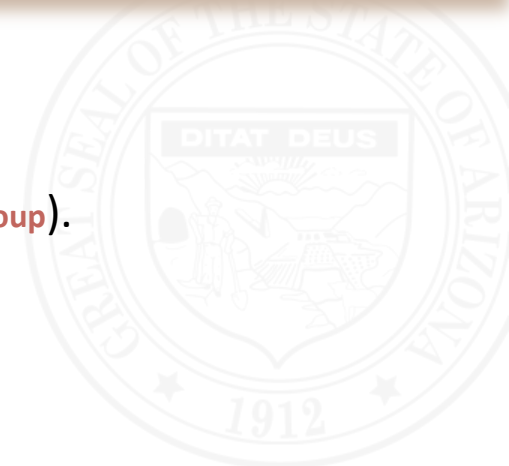
- Log reduction approach.
- Log reduction credits for unit processes (**AWT in Treatment sub-group**).

## **Three approaches (from 2018 DPR framework document)**

- Texas TCEQ approach for DPR
- NWRI Expert Panel approach for DPR
- State of California approach for IPR using groundwater replenishment

### **Key**

**Collaborative effort with treatment sub-group.**



## 2. Chemical Control

- List of unregulated chemicals of health concern.
- List of unregulated chemicals - useful for evaluating organic chemical removal by treatment train.
- Monitoring requirement details.
- Sensitive & specific analytical methods.
- Studies to understand types & quantities of chemicals present in treated wastewater.

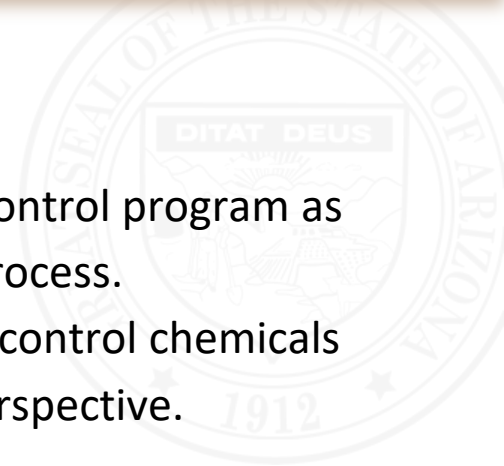


## 3. Treatment

### a. Enhanced Source Control

- b. Wastewater Treatment
- c. AWT
- d. Utility Collaboration

- Pretreatment & source control program as part of DPR permitting process.
- Beyond pretreatment to control chemicals from a drinking water perspective.

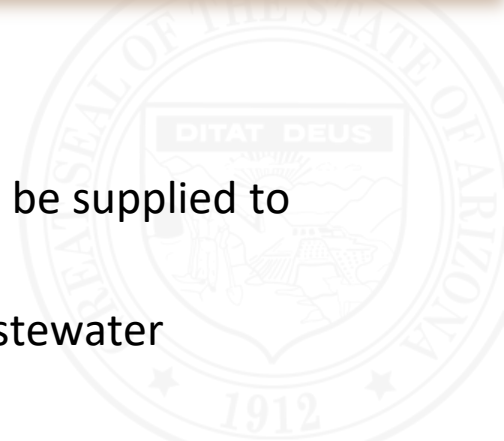




## 3. Treatment

- a. Enhanced Source Control
- b. Wastewater Treatment**
- c. AWT
- d. Utility Collaboration

- What type of water must be supplied to the AWT?
- Nitrate control in the wastewater treatment plant or AWT?
- Establish pathogen log removal credits for WWTP.





### 3. Treatment

- a. Enhanced Source Control
  - b. Wastewater Treatment
  - c. **AWT** (Pathogen Control and Chemical Control sub-group).
  - d. Utility Collaboration
- Critical Control Points.
  - Develop BADCT for DPR.

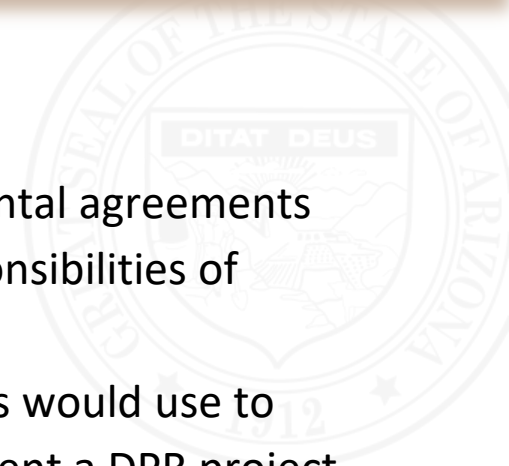
**Key**

**Collaborative effort with Pathogen Control and Chemical Control sub-group.**

### 3. Treatment

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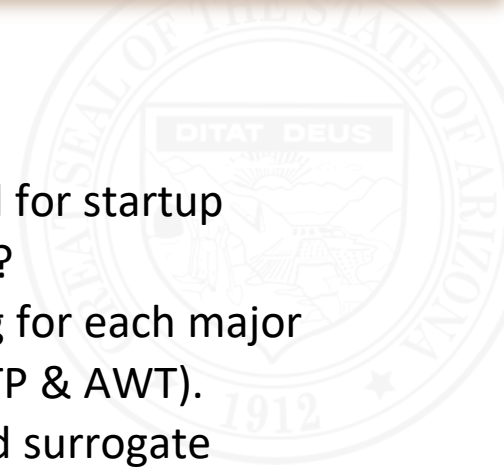
- MOUs or intergovernmental agreements to define roles and responsibilities of multiple utilities
- methods that the utilities would use to work together & implement a DPR project



## 4. Permitting for DPR (i.e., ATC/AOC)

- a. **Monitoring, Instrumentation,  
and Process Control  
Requirements**
- b. Facility Operations and  
Maintenance
- c. TMF capacity
- d. Pilot testing & demonstration  
(**AWT in Treatment sub-group**)
- e. Operator Certification

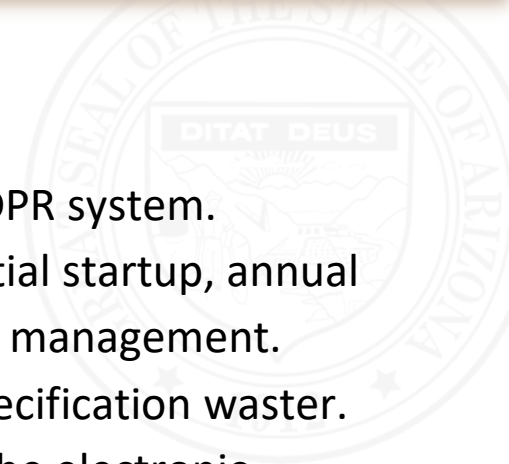
- What should be reported for startup performance monitoring?
- Water quality monitoring for each major treatment process (WWTP & AWT).
- Process monitoring: rapid surrogate measures for pathogen reduction performance.
- Develop criteria for facility shut down or out-of-specification water diversion.



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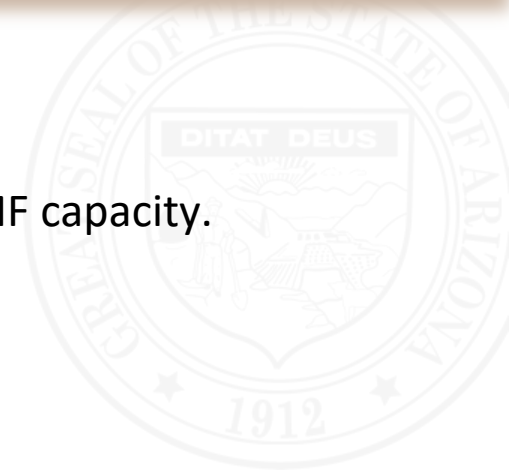
- O&M requirements for DPR system.
- Develop guidance for initial startup, annual startup, shutdown, asset management.
- Response plan for off-specification waster.
- What should be part of the electronic remote sensing system?

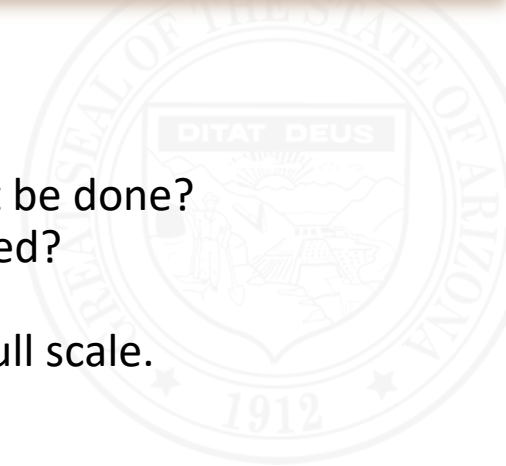


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- Develop guidance for TMF capacity.





## 4. Permitting for DPR (i.e., ATC/AOC)

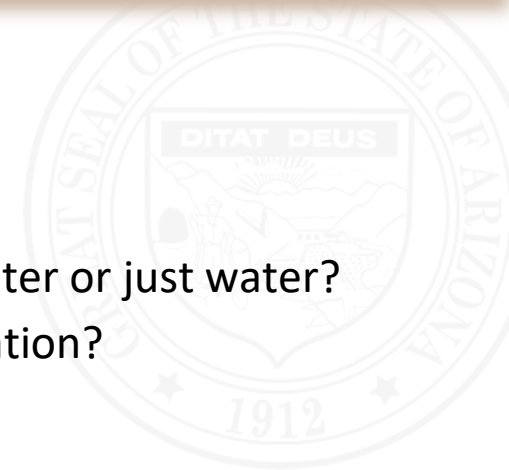
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and Process Control  
Requirements
- b. Facility Operations and  
Maintenance
- c. TMF capacity
- d. Pilot testing & demonstration**  
(**AWT in Treatment sub-group**)
- e. Operator Certification

- How long should the test be done?
- What should be monitored?
- How frequently?
- Similarities of pilot and full scale.

## 4. Permitting for DPR (i.e., ATC/AOC)

- a. Monitoring, Instrumentation,  
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Requirements
- b. Facility Operations and  
Maintenance
- c. TMF capacity
- d. Pilot testing & demonstration  
(**AWT in Treatment sub-group**)
- e. **Operator Certification**

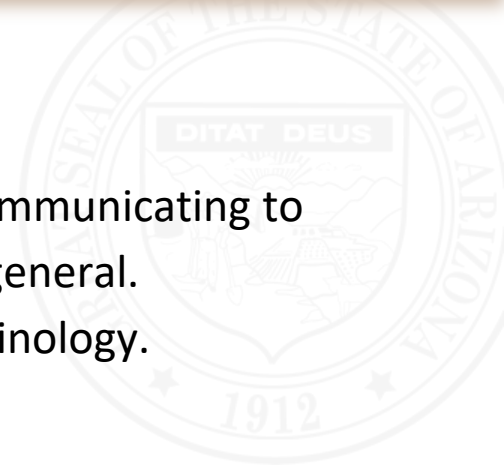
- What skills are needed?
- Both water and wastewater or just water?
- New category of certification?





## 5. Outreach

- Public acceptance & voluntary & required outreach
  - Small Water System Considerations
- develop a strategy for communicating to the public about DPR in general.
  - Setting appropriate terminology.



# 6. Overall framework

- Terminology/ Definitions.
- Potable Reuse Applications in Arizona.
- Put it all together.



# Advice on work products

- Rules.
- Technical guidance.
- Implementation Documents.
- DPR-specific operator testing and training materials.
- Permitting forms.
- Application templates.
- Procedures/SOP's.
- Inspection or application checklists.

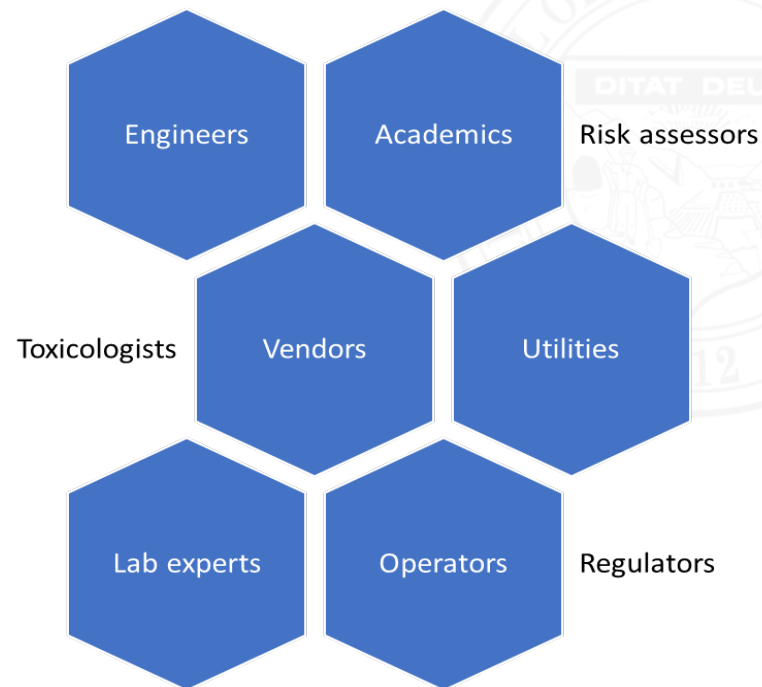




# TAG Recommendations and Their Justifications

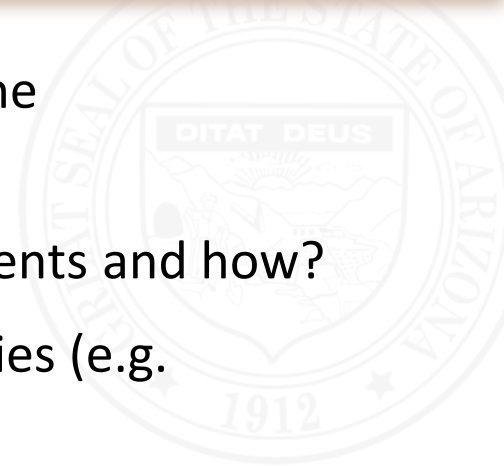
# Making your voice heard!

- Suggestions based on scientific data and literature.
- Explanation and justification for the requirements
  - technical information/data
  - any assumptions considered
  - examples and suggestions for alternatives

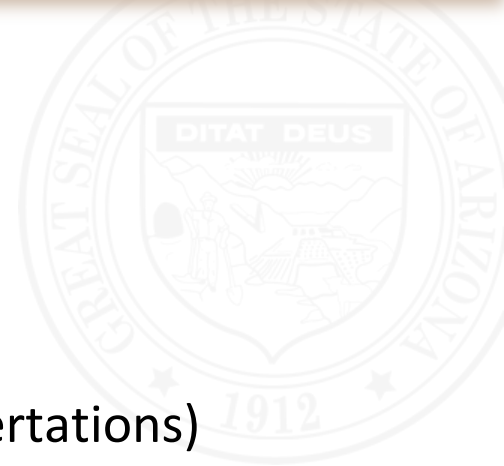


# Questions to be Considered

- What will be the positive and negative impacts of the suggestions/requirements?
- Who will be impacted by the suggestions/requirements and how?
- Any impacts on other programs, laws or other entities (e.g. counties)?



- Peer reviewed publications
- Engineering textbooks
- US EPA reports
- Engineering standards
- Reports from University studies (e.g., thesis or dissertations)
- Publications from national & international organizations (WEF, NSF)
- Other data that can scientifically justified.



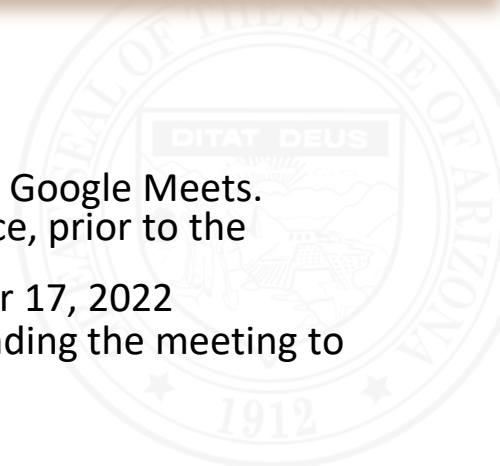


# Future TAG Meeting Logistics and Next Steps



# Future Meetings

- Sub-group assignments will be sent in an email.
  - Doodle Poll to determine best days of the week and times
  - Most meetings will be virtual and ADEQ will send out invitations via Google Meets.
  - For the first meeting, an agenda will be sent out one week in advance, prior to the meeting.
  - We estimate that the first meetings will be held the week of October 17, 2022
  - Each subgroup will have at least one ADEQ DPR team member attending the meeting to take meeting minutes and assist when needed
  - Each subgroup will need one consistent lead or spokesperson
- 
- Every two (2) weeks, subgroups will meet for two (2) hours to discuss topics and make recommendations.
- 
- Every two (2) months, the entire TAG will meet and the spokesperson from each subgroup will provide a report out summary of the subgroup progress to the entire TAG.



## SCHEDULE

OCTOBER 2022

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
OCTOBER						
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BRAINSTORMING AND IDEAS

GROUP NO. 1  
PATHOGEN CONTROL

GROUP NO. 2  
CHEMICAL CONTROL

GROUP NO. 3  
TREATMENT

GROUP NO. 4  
DPR PERMITTING

GROUP NO. 5  
OUTREACH

GROUP NO. 6  
OVERALL FRAMEWORK

# Share Files



Dashboard

Folders

Personal Folders

Shared Folders

Favorites

File Box

Recycle Bin

Workflows

Inbox

People

Personal Settings

Shared Folders > DPR Technical Advisory Group

DPR Technical Advisory Group More Options

Items in this Folder People on this Folder

<input type="checkbox"/>	Name ▲	Size	Uploaded	Creator
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 1 Pathogen Control	0 B	9/22/22	R. Mallica
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 2 Chemical Control	0 B	9/22/22	R. Mallica
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 3 Treatment	0 B	9/22/22	R. Mallica
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 4 DPR Permitting	0 B	10/3/22	R. Mallica
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 5 Outreach	0 B	10/3/22	R. Mallica
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Subgroup No. 6 Overall Framework	0 B	10/3/22	R. Mallica

# DPR: Technical Advisory Group ADEQ Webpage

[< 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 >](#)

### Membership

The TAG will consist of 21 to 25 stakeholders and will meet virtually at least monthly as a full group, starting the end of Q1 2022. Members will be expected to attend meetings and do research and draft deliverables as needed between meetings.

Group members will consist of technical and policy level experts with knowledge and experience in one or more of the following:

- DPR-specific technology and engineering
- DPR-specific outreach
- Reclaimed water and how it interacts with the Aquifer Protection Permit program
- Safe Drinking Water Act
- Wastewater treatment technology and/or operations
- Drinking water treatment technology and/or operations
- Arizona water supplies and community planning
- Medical expertise on pathogen and chemical impacts on public health
- Academic expertise in pathogens and chemistry as related to wastewater and/or drinking water
- Industrial operations and industrial wastewater

Membershin will be selected based on the following criteria:

### CONTACT US

[Email >](#)

### SEE MORE

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

### MEETING INFORMATION

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# Open Discussion And Questions?

