HMA PUBLIC RELATIONS

BrandOutlook

April 10, 2023

ADEQ
Arizona Department of Environmental Quality

Final Report – Understanding Perceptions and Barriers to Direct Potable Reuse (DPR) Adoption

Phase 1 – Qualitative Research with Stakeholders

Project Overview

- Objectives, Methodology, Discussion Flow

Executive Summary

Key Findings

- Perceptions about the Water Situation in Arizona
- Perceptions about DPR

Recommendations

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Project Overview

The Arizona Department of Environmental Quality (ADEQ) is undertaking a process to establish rules, regulations and guidelines for implementation of Direct Potable Reuse (DPR) processing in Arizona. ADEQ has engaged the assistance of HMA Public Relations and BrandOutlook to conduct research with stakeholders to determine perceptions about DPR.

The information gained in this research will help ADEQ provide tools and resources for municipalities, professionals in the water/wastewater industry, local leaders and potential customers on this viable water resource option. A key part of this effort will be to *gauge public perceptions about DPR* and to *inform proposed rulemaking* to bring clarity and understanding to constituents throughout the state.

Specific objectives include:

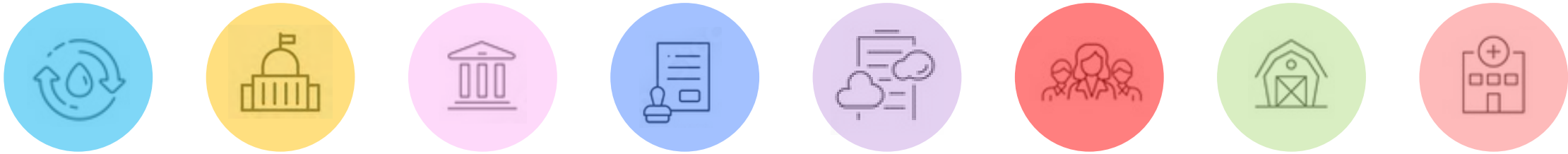
- Understand perceptions about the urgency of the water situation in Arizona
- Determine the top concerns and understand the efforts to alleviate these issues
- Find out what people think about DPR, including the benefits and drawbacks
- Gather information about the biggest barriers to adopting DPR
- Understand the best ways to communicate with disparate groups of the public about DPR
- Gain feedback about the role the state and ADEQ should play as they present DPR as a viable solution to both the municipalities and end users

There are two phases to this initiative: Phase One is qualitative stakeholder interviews and Phase Two is a quantitative survey with adults in Arizona. This report is a summary of Phase One.

Methodology – Recruitment

In Phase One of the project, we interviewed a broad range of key stakeholders from across the state of Arizona:

- We conducted Zoom meetings with 35 people in total
- Interviews were completed between January 20 and March 7, 2023, and were approximately 45-minutes in length
- Participants were recruited from an approved list of leaders in eight segments shown below



Stakeholders – Representing their Constituent Groups

About half of the participants were water knowledgeable and about half were LESS water knowledgeable.

~ 1/2 LESS Water Knowledgeable

People of Arizona, or customers who may have DPR water as part of their future water supply

- Community leaders in business, economic development, minority populations, healthcare, agriculture, industry and the environment
- Representatives of their employees, members, customers, patients, or other constituents
- Limited to no knowledge about DPR

~ 1/2 Water Knowledgeable

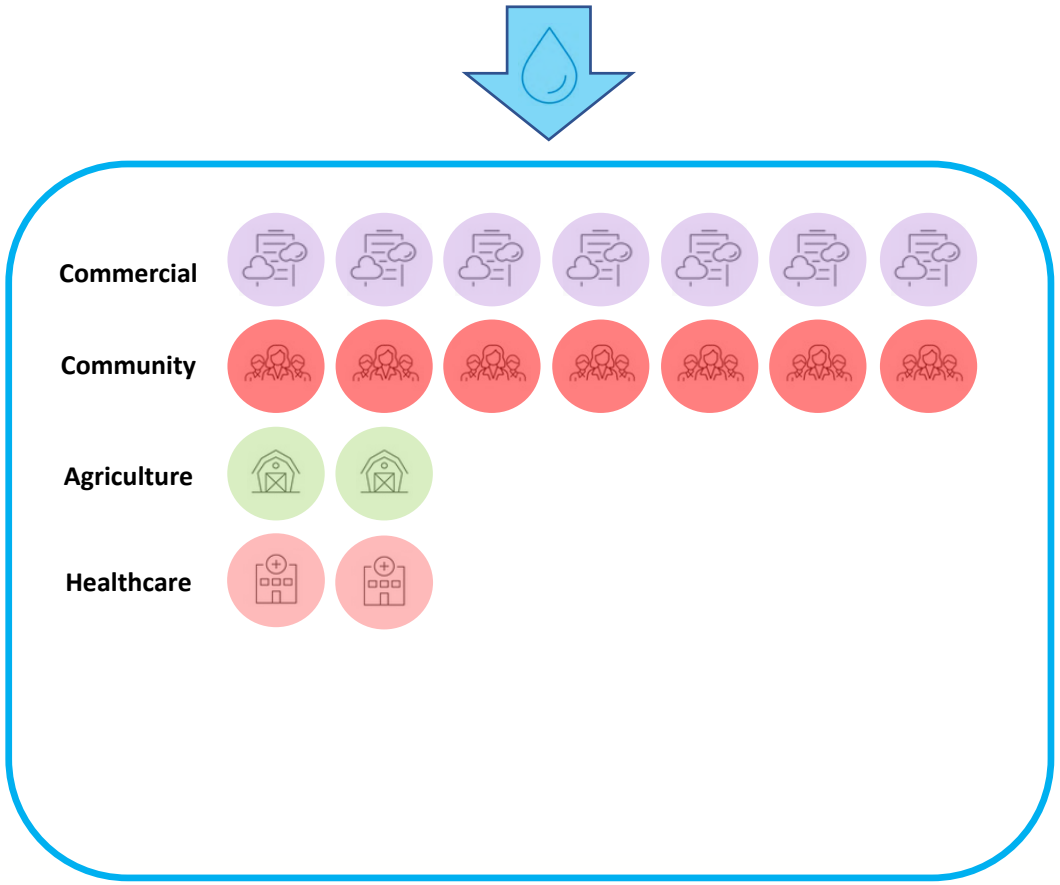
Proxy for staff of the municipalities, companies & community leaders who might bring DPR to the community

- Very knowledgeable about water quality and water supply issues
- Usually working in careers centered around water
- Generally, from academia, utilities, different levels of government
- Knowledgeable about DPR

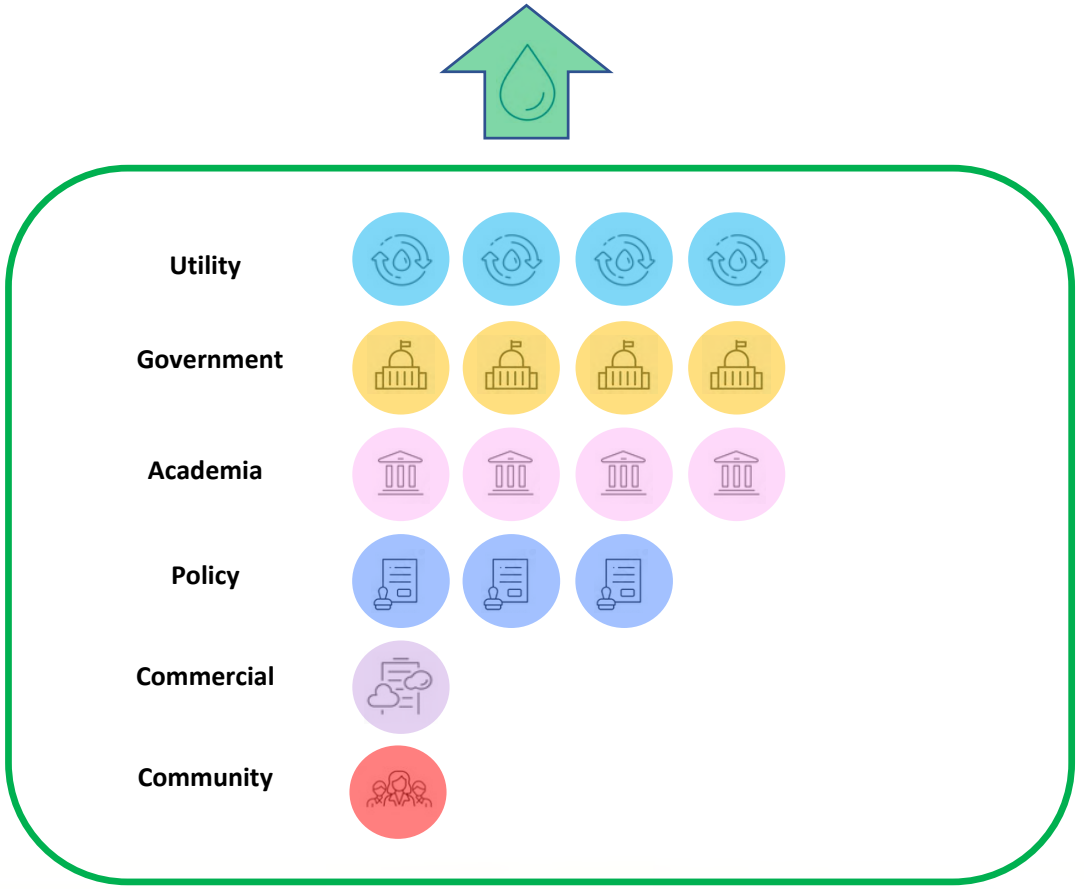
Stakeholders – Knowledge by Category

Industry affiliation was a good predictor of water knowledge.

LESS Water Knowledgeable (N=18)



Water Knowledgeable (N=17)



Methodology – Discussion Flow

Perceptions of Arizona Water Situation

- Urgency
- Top concerns
- Current initiatives

Perception of DPR

- Top of Mind
- Process Feedback
- Benefits
- Drawbacks

Barriers to DPR Adoption

- Biggest obstacles by constituency

Overcoming Barriers to DPR Implementation

- Support: leaders, utilities, community leaders
- Communication strategies for outreach

Role of ADEQ

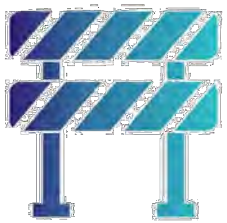
- Working w/ municipalities and community leaders
- Providing scientific / educational support

Executive Summary

DPR Perceptions & Adoption in 60 Seconds

Broad concern about water supply now and in the future

DPR is mostly unknown but can be viable part of the solution



Barriers to DPR adoption are cost, skepticism, yuck factor, awareness, gov't. trust

Thoughtfully created outreach programs can overcome barriers to DPR adoption

Stakeholders expect ADEQ to provide data on water safety; rule making; aid in implementation

Executive Summary – Perceptions of the AZ Water Situation

- There is a keen awareness among all stakeholders about the current and future water challenges the state is facing.
- Notably, the urgency of the situation was not dependent on respondents' level of knowledge about water issues.
- As expected, water knowledgeable respondents had a deeper understanding of key issues facing the state, e.g., Colorado Rivercuts.
- Also as expected, water knowledgeable respondents were more aware of initiatives currently in place to solve water issues in Arizona.
- Compounding the state's waters issues are the significant political divide and a lack of trust in the government institutions.
- There is much news from outside of Arizona about the water crisis; this may cause negative perceptions about the availability of water and, in turn, impact residential and commercial growth.
- Anecdotally, this national coverage has likely strengthened non-water knowledgeable respondent's concerns about the state's water crisis.

Executive Summary – Perceptions of DPR

- Water-knowledgeable respondents knew DPR well while most of those less knowledgeable hadn't heard of it.
- Overall, the former felt DPR is one of several tools that will help the water situation; the latter typically shared concerning sentiments.
- Top of mind benefits typically fell into three categories: increased supply, economic and environmental.
- Top of mind drawbacks were typically the 'yuck' factor, trust issues, skepticism and cost.
- There are clear opportunities to shift perceptions of DPR, e.g., many highly resonated with 'purer than some bottled waters.'
- Adoption (less water knowledgeable): On the early part of a potential adoption curve, need to be brought along.
- Adoption (water knowledgeable): Ready and willing to adopt DPR but assert that community-specific solutions will be needed.
- Barriers to adoption are cost, skepticism about the DPR process, the yuck factor, awareness and trust in government.
- Cost and staffing are most concerning for knowledgeable respondents while skepticism is the biggest concern for those less knowledgeable.
- There was a mixed assessment of who should pay for DPR; a majority said the government while some felt it should be rate payers.
- Key factors to ensure a successful implementation of DPR include: 1) optimizing the role the state plays, 2) determining who will lead the effort on a community level, 3) identifying how it will be paid for, 4) using pilot programs to build credibility and trust.

Key Findings

Perceptions about the Arizona Water Situation

BrandOutlook
Brand Strategy + Market Research

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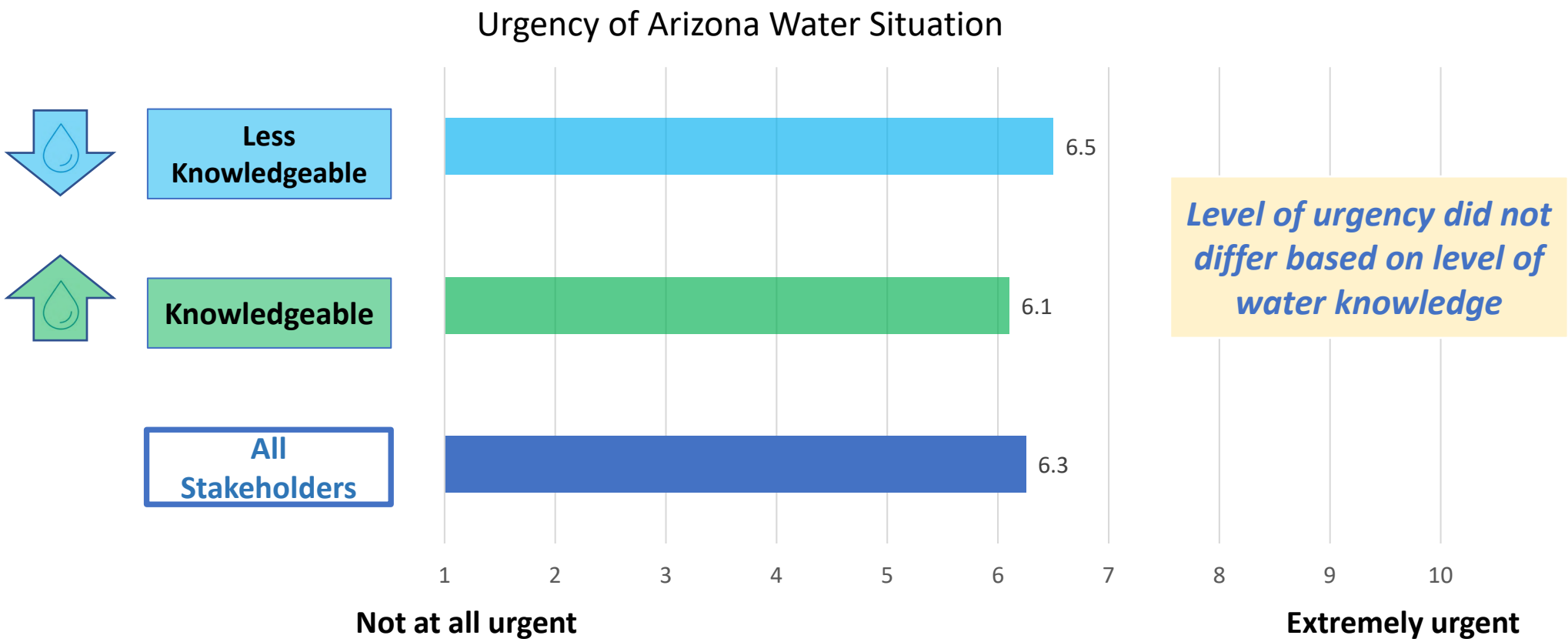
Perceptions of the Arizona Water Situation

Stakeholders agree that Arizona faces water challenges both now and in the future, regardless of level of water knowledge.

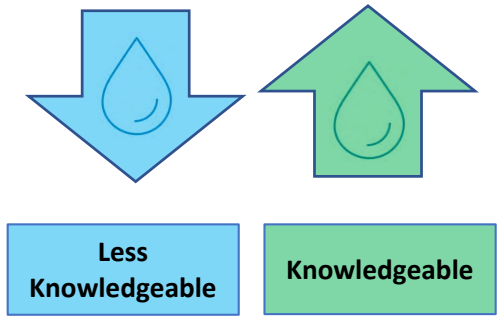


Concerns About Arizona Water Situation

Those with the least amount of knowledge about water issues cited concerns that they heard from the news and public forums. Water knowledgeable respondents echoed similar concerns as the less water knowledgeable but added several other issues.

Concerns about Arizona Water Situation

- Weather, climate-change
- Lack of conservation education/effort
- Colorado River allocation decreases
- National news: Arizona is out of water
- Foreign agriculture interests
- Growing population



Issues in addition to those mentioned by less water knowledgeable respondents

- Level of Lake Mead
- Colorado River allocation negotiations
- Forest fires/management
- Flooding
- Mining industry being unregulated
- Negotiations with the Indigenous tribes

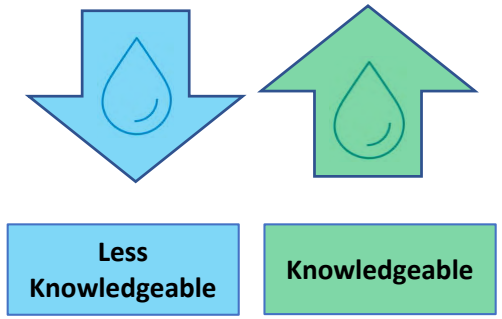
Awareness of Current Initiatives

Those with the least amount of knowledge about water were only able to name a few initiatives they were aware of that are currently in place to solve water issues in Arizona.

The more water savvy named several specific projects in addition to those mentioned by the less knowledgeable stakeholders.

Current Initiatives to Solve Arizona Water Situation

- Governor's Water Policy Council
- Conservation efforts
- Recycling for outdoor use



Initiatives in addition to those mentioned by less water knowledgeable respondents

- Reconsultation committee
- Desalination plant in Mexico
- Roosevelt Dam storage modification
- Expansion of Bartlett Dam
- Lease of water from Indigenous tribes
- Industrial innovation

How Arizona Differs from Other Water-Challenged States

While Arizona faces similar challenges to other states, it faces unique circumstances that should be considered when developing plans to roll out DPR.

Lack of Trust Due to a Political Divide

- An important part of the DPR strategy will be overcoming trust issues with government, academic and commercial entities.
- Recent events surrounding COVID, and the most recent Presidential Election have created a palpable political divide in the state.
- Even if scientific facts about the DPR process are presented, the perception is that if the entity or leader presenting those facts is affiliated with a particular political "team" there would be instant opposition.

"Arizonans are easily swayed depending on who's the loudest voice in the room."

"I think there is a lot of distrust about anything government related in Arizona. It comes from a political divide, but it's still a trust factor."

Colorado River Reliance

- Several water experts felt that Arizona has little control over the Colorado River as a source of water for the state.

  "We're the junior partner on the Colorado River allocations."

  "We have to fight California, which is the 800-pound gorilla when it comes to such fights."

  "The Colorado River is not under Arizona control in any way."

  "Allocations were based on water production in the early 1900s [when AZ got a lesser amount]."

Perceptions and Awareness

Sources outside the state are influencing the perception of a water crisis within Arizona. Stories from the national news outlets have provided negative publicity about the availability of water.

- This negative viewpoint could potentially mitigate both residential and commercial growth in the area.
- These national headlines may also perpetuate the severity of the water crisis in Arizona.

First-ever water cuts declared for Colorado River in historic drought

Persistent drought and overdevelopment cause record low water levels for tens of millions

Dry, cracked earth is shown in July in an area that used to be underwater near where the Lake Mead Marina once was located. *Ethan Miller/Getty Images*

"The national publicity is not very good for our economic development. I guess that's a concern that I'm sure you're hearing. Every time these stories are talking about this wildcat subdivision north of Scottsdale, the world's ending in Arizona."

"The media coverage tends to be more sensational. Like the Rio Verde issue. I know that's been picked up in national markets, so I just don't know what other conclusion you come to other than, "Gee, is Arizona going to run out of water?" So, I would say that that's a key piece of this broader situation."

Perceptions about

DPR
Direct
Potable
Reuse
WATER

Perceptions of DPR

Most of the less water knowledgeable stakeholders had never heard of DPR or confused it with the current recycled water initiatives.

"It sounds miraculous, but I would be suspicious."

"It sounds like a very large Brita filter."

After hearing the description for DPR, they were more likely to mention concerning sentiments.

"like toilet water," "drinking toilet water," "poop water," or "drinking sewage water"

As expected, the water-knowledgeable respondents provided an accurate, scientific definition of DPR.

- The most water-knowledgeable respondents described DPR as another option in what should be a well-rounded portfolio of water supply solutions, just a 'piece of the puzzle' or a 'tool in the toolbox'.
- It is also not an immediate solution – there is a process of awareness, education and acceptance that needs to take place over time.

"DPR can help solve the issues facing AZ in the future but it's 'not a silver bullet'"

Perceptions of DPR – Benefits (unaided)

The top-of-mind benefits respondents cited typically fell into three buckets.

Supply

- Increase in the supply of drinking water
- Creates a sustainable system
- Constant source of water
- Better than IPR: there are no water losses
- DPR will reduce evaporative losses

"DPR is a drought-proof water supply, so it doesn't matter what the weather does."

Economic

- Allows for continued economic growth
- Costs much less than desalination
- Local control over the water supply
- No limit on the source of the effluent
- DPR is very efficient

"It's one of the few sources of water we have that grows as the population grows."

Environmental

- Less dependency on fresh water
- Raises awareness on water issues
- Less damage to the ecosystem
- DPR will eliminate problematic PFAs

"It's good for us to continue to find ways to use our water as many times as we can."

Perceptions of DPR – Drawbacks (unaided)

Top-of-Mind Drawbacks of DPR:

- Yuck factor

  "How will it taste?"

- Trust issues

  "Are there any potential unintended consequences?"

- People will be skeptical

  "Is it safe for pregnant women or women who are breastfeeding?"

- It will be expensive

  "Where will the funding come from to build? Will it be allocated fairly?"

  "No reason to create DPR water if your current tap water is cheaper."

- The customs or values of some people may not coincide with drinking reused water

  "Reclaimed water is very touchy for indigenous populations."

- Potential cannibalization of effluent that is currently being used for other projects (e.g., landscaping, golf courses, parks, agriculture and industry)
- Can be perceived as inequitable if you put this in low-income neighborhoods

Perceptions of DPR Facts

Respondents most resonated with statements/wording that communicated purity and safety as well as an assured future water supply.

1. The DPR purification process produces water that is *purer than most bottled waters*
   - *Most liked, but you must prove it*
2. Purified water provides a community with a *constant source of water*
   - *It's constant because wastewater will always be produced*
3. Adopting DPR could potentially *make up a significant gap in water supplies*
   - *Helpful*
   - *How much of a gap can it make up?*
   - *Need to quantify it*
4. DPR has been done since *Neil Armstrong stepped on the moon*
   - *Technology that has been around for a long time – proven technology*
   - *However, a few respondents asked, "Who is Neil Armstrong?"*
5. Water is filtered through hollow fibers, perforated with *holes 1/300th the width of a human hair*
   - *No one cares*
   - *Yuck, is there hair in the water?*
6. The resulting water is so pure that *minerals actually have to be added back in*
   - *What minerals do you need to add back in?*

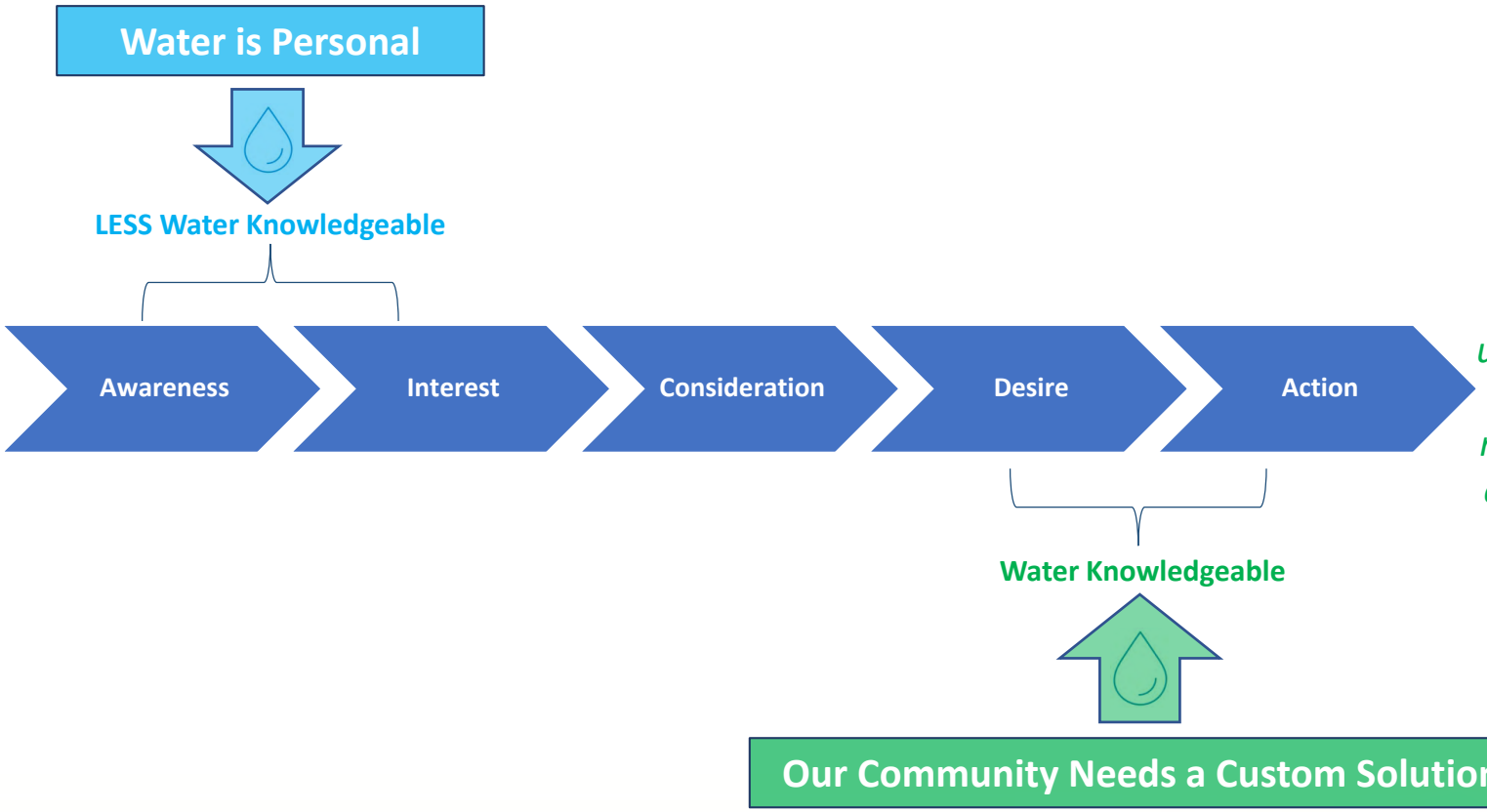
Most impactful and persuasive

Adopting DPR

The less water focused versus the more water focused are on opposite ends of the DPR adoption spectrum.

By talking about water, there is a risk of raising previously non-existent concerns about where water comes from now. In turn, water becomes very personal as it relates to health and well being.

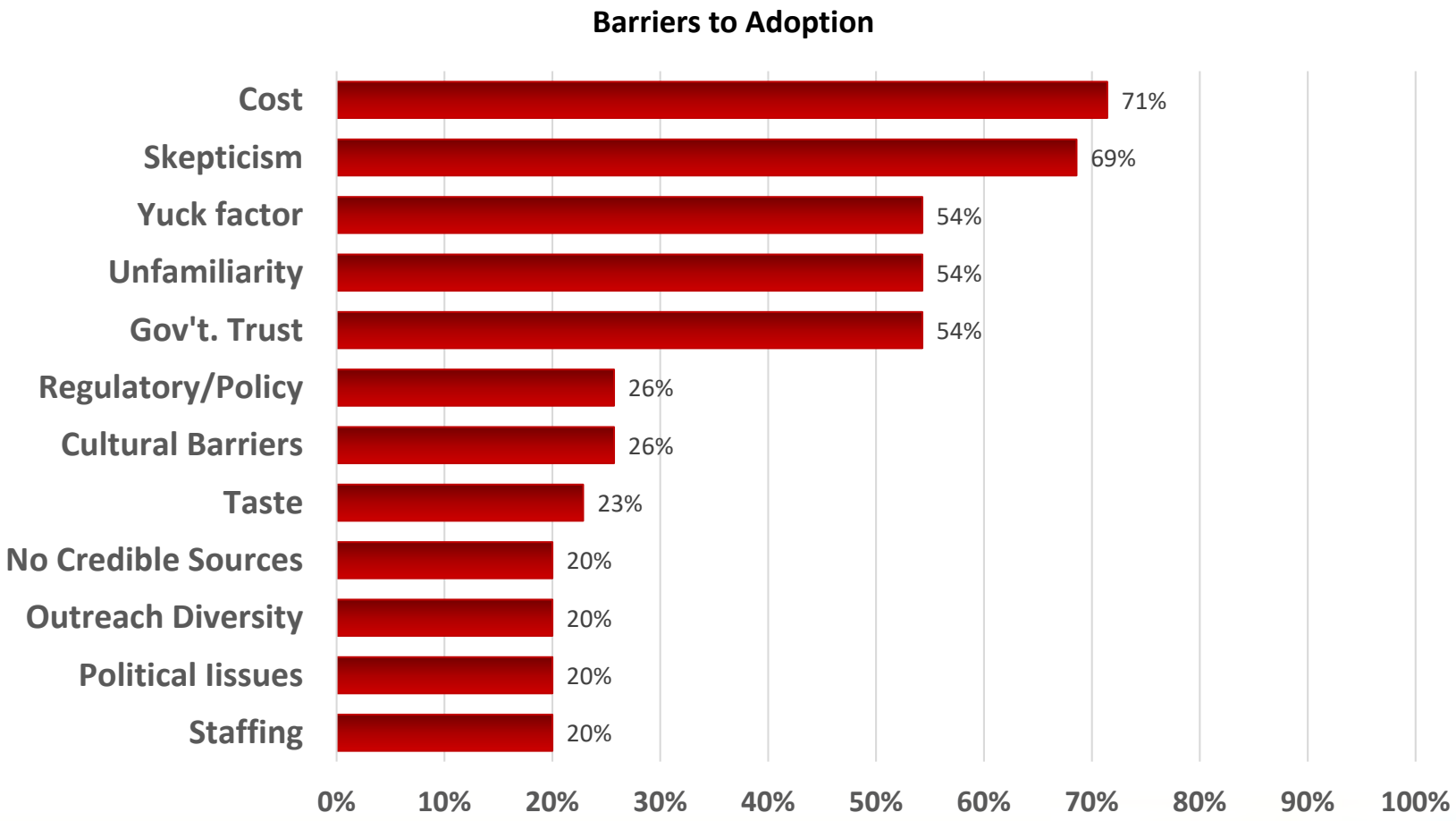
*"I don't think about water too much. But if you want to change the status quo, then it becomes **personal** because it might affect my family's health. I need to hear more about these changes before I'm convinced."*



"We want to implement DPR, but our community is unique and needs help along the way. We need funding support, expertise and staffing to get started."

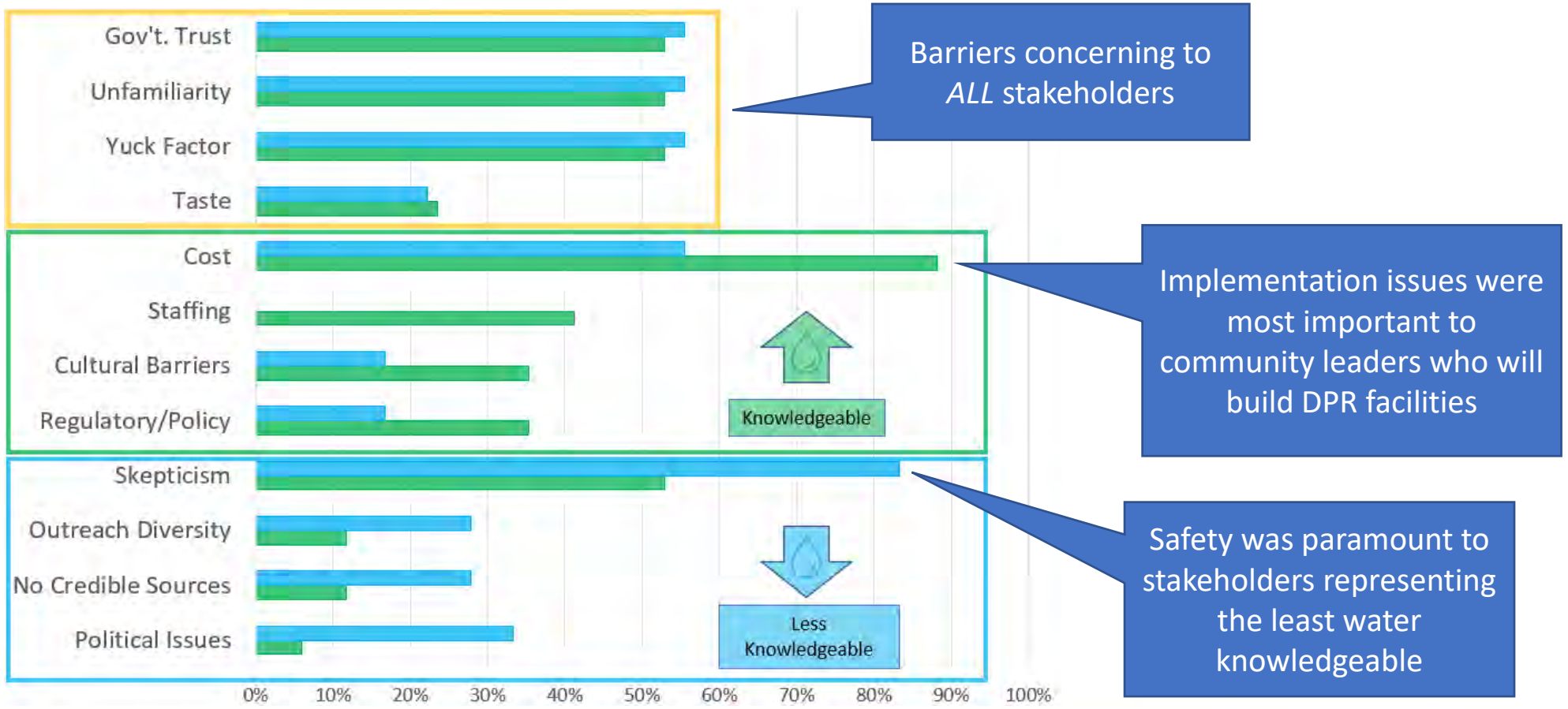
Barriers to DPR Adoption

Key concerns cited by stakeholders included cost, skepticism about the DPR process, the yuck factor, awareness and trust in government.



Barriers to DPR Adoption

Stakeholder knowledge level determined the ranking of likely barriers. The least knowledgeable were more concerned about trust issues while the water knowledgeable cited cost as the biggest concern.



Adoption & Implementation of DPR – Financial Responsibility

Who should pay for DPR?

When asking about who should pay for DPR, two distinct ideas were shared:

Having funds to build and run the facility

To collect the funds to build the facility, stakeholders suggested bond measures, taxes or funds from the state or federal sources.

Others thought the utility *should pay for the PLANT* and pass the cost to the rate payers over time.

Paying for the water that comes out of the tap

Rate payers were mentioned most often as those who should *pay for the WATER* as they are the users of the water.

"People who need the water should pay for the water."

Adoption & Implementation of DPR

Contributing factors of a successful implementation of DPR in a community are determined by:

Role The State/ADEQ Plays

- Flexible rules, regs, guidelines
- Lead safety standards
- Bring along from beginning
- Guidance, funding, staffing, tech
- Lead outreach programs

Who Leads the Effort

- Adoption should begin with people from local community

How DPR is Paid For

- Facility: bonds, taxes, state or federal funding
- Water from tap: payers

The Use of Pilot Programs

- Build credibility/interest: show pilot program results
- Success leads to 'domino effect' across the state

Recommendations

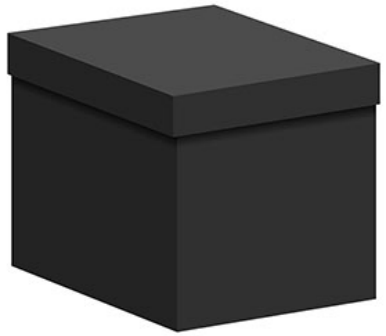
Recommendations – Viewing Activities Through Multiple Lenses

ADEQ should consider the following seven questions when considering taking actions to further the DPR cause. The first three questions address the anxieties people have about DPR.

Water is Personal

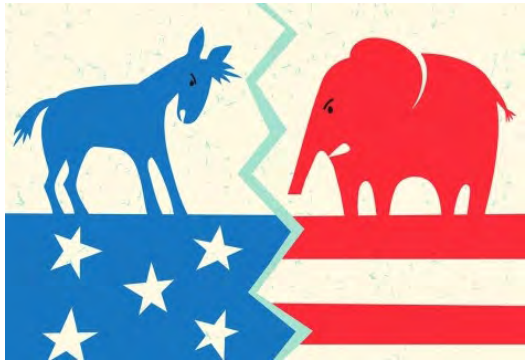
- How will people feel confident about the safety of DPR water and its effect on their families?

Black Box



- How can the DPR process be explained so it is not confusing or concerning?

Political Divide



- How can DPR be presented in a way that is not perceived to be politically driven?

Recommendations – Viewing Activities Through Multiple Lenses

The following three questions referred to variations discovered in target audiences.

Perception of Urgency

- How can Arizona residents be convinced of the urgency around the current water situation?

Perception of DPR

- How can Arizona residents be convinced about the viability and importance of DPR as a solution to the water situation?

Implementation

- How can DPR be implemented in communities with unique needs?

Recommendations – Viewing Activities Through Multiple Lenses

The seventh question related to community partnerships. Several of the stakeholders were enthusiastic about joining with ADEQ in helping their communities adopt DPR.

Community Partnerships

- How can partnerships with community leaders and organizations be leveraged to support DPR adoption?

Recommendations – ADEQs Responsibility

Recommended top responsibilities for ADEQ in deploying DPR:

1) Create rules, regulations and guidelines that are flexible so all communities can comply based on their unique situation
2) Instill confidence that DPR water is safe, healthy and meets all standards
3) Bring all constituents along from the beginning and continue to inform throughout the process
4) Provide guidance and assistance in overcoming key barriers such as funding, technical know-how and staffing
5) Lead outreach efforts to overcome barriers to DPR adoption for both community leaders and the general population of Arizona

ADEQ should also:

- Be transparent throughout the entire process of rule making, testing
- Be a leader in terminology consistency
- Be a partner with other water policy leaders to ensure holistic solutions for supply issues
- Ensure all credible sources of information/endorsements are non-partisan

ADEQ Arizona Department of Environmental Quality

Recommendations – Implementing DPR

Encourage successful adoption and implementation of DPR by considering the following:

State/ADEQ Role

- Flexible rules, regs, guidelines
- Lead safety standards
- Bring along from beginning
- Guidance, funding, staffing, tech
- Lead outreach programs

Leading the Effort

- Support community leaders: generate interest in DPR
- Develop adoption plans: funding sources, technical support and staffing

Pay for DPR

- Guidance for municipalities on how to get funding: bonds, taxes, state or federal funding
- Best practices for rate payer billing systems

Pilot Program

- Interest via successful proof of concept
- Create case studies: successful pilots in other communities

Recommendations – Outreach Strategies to Support Adoption of DPR

Outreach programs should concurrently target both Arizona residents and leaders/constituents (e.g., municipalities, utilities, etc.) hoping to begin a DPR program based on where they are on the adoption curve.

Stage of Adoption	Explanation	What This Addresses
Initial Engagement	• Begin educational program • Highlight water scarcity issues	Awareness
Interest	• Discuss current water supply • Introduce DPR	Unfamiliarity
Consideration	• Further education on DPR safety and processes • Water tasting events	Skepticism about Safety, Yuck Factor, Taste
Desire	• Community leaders gain consensus from constituencies	Cultural Barriers, Outreach, Diversity, Political Issues, Government Trust
Action	• Community works with ADEQ to begin pilot process	Cost, Staffing, Regulatory/Policy

Outreach Strategies – Generational Influences

The acceptance of DPR in a community will vary based on age. Younger people (under 50) are thought to be much more likely to embrace this type of alternative technology for their drinking water.

The younger generation tends to be more concerned with conservation, the environment and climate change.

They are also the most likely to be impacted in the future by water shortfalls.

Suggestions to reach the younger generations were:

- Start young and discuss this type of technology in school to make it fun to learn *"Our hope is that our kiddos will go home and teach their parents about what they've been learning."*
- Promote science fair projects that highlight the types of purification processes like reverse osmosis
- Appeal to younger generations through community programs like "Beat the Peak"
- Highlight the scarcity of water if the status quo remains *"How much water will there be if we don't do something now?"*

"I think [younger generation] are far more savvy about global warming and all that stuff than the rest of us. And I think they are more open to new solutions."

Outreach Strategies – Hispanic Families

"Make sure the message is not just translated, but trans-created, which implements cultural competency and cultural sensitivity."

According to several stakeholders, gaining acceptance for DPR in the Hispanic/Latino community will require high-touch outreach programs.

Recommendations from the stakeholders included:

- Stakeholders emphasized the need for targeted, authentic outreach efforts such as initiatives that entailed personal interaction to get the DPR message out, e.g., festivals, community events, etc. *"I think you would need to use more grassroots methods than you would in the general public."*
- A few respondents advised that TV, radio and print can be very effective in this community. *"Univision and Telemundo see themselves as gatekeepers to convey critical information to this community."*
- Some stakeholders proposed targeting mothers, particularly in those households that are less acculturated. *"Mom is the decision maker in the family. She does the grocery shopping, the cooking and is the primary user of water."*
- Credibility will be vitally important in communicating with the Hispanic population. Many stakeholders suggested that some in this community have lingering trust issues either due to problems in their countries of origin or because of past bad experiences (e.g., Tucson delivered SRP water out of the tap that was brown and smelled bad). *"They don't trust the water faucet."*

Outreach Strategies – Indigenous Population

The issues in communicating with the Indigenous are highly varied and very complicated. *"Every tribe has a view of water that is unique to that tribe."*

It is unclear how likely a DPR process will be implemented on tribal lands. However, it would be prudent to be sensitive with the following considerations:

- ADEQ may have some trust issues that will be difficult to overcome. *"ADEQ is not going to be the one to fix [the trust issues with indigenous population] because ADEQ is one of the least trusted agencies with the tribes."*
- There is currently a lot of outstanding and ongoing litigation about water rights in the state of Arizona. *"There are 10+ tribes that do not have allocated settled resources, their water rights have not been resolved."*
- There are negative feelings about Snowbowl that have not been adequately addressed according to many people in the indigenous population. *"Our people do not trust some of the water decisions that have been made in our area that are really against the values of our people."*
- To help build trust, several respondents felt that people with indigenous backgrounds be the spokespeople. *"I think for indigenous people, it has to be coming from our own scientists, our own water people who look like us."*

Recommendations – DPR Process Illustration

A graphic of the DPR process needs to be developed that can be used for outreach to the general public. This graphic can be the centerpiece for a wide variety of communication methods, including websites, brochures, newsletters, publicity, media and informational videos or PSAs.

The graphic should ease people into the idea of DPR by conveying key confidence building facts such as: recycled water has been used in the state for more than 90 years for multiple purposes.

It needs to be “just right” -- not too technical with just enough scientific information to show that the water is safe and healthy.

Recommendation – Example of a DPR Illustration

Possible starting point for new DPR graphic

Direct Potable Reuse (DPR) Water Process

Direct Potable Reuse water is…

- *A constant source of water for a community*
- *Safe, reliable and sustainable*
- *Good for the environment*
- *A locally controlled, drought-proof water supply*
- *Currently used in many communities in the U.S.*

Wastewater from:

- Sink
- Shower
- Laundry
- Dishwasher
- Toilet

Recycled Water Current Use:

- Landscaping
- Golf Courses
- Parks & athletic fields
- Irrigating crops
- Industrial uses

Purifying Process:

- Reverse Osmosis
- Ultraviolet Disinfection
- Advanced Filtration

Drinking Water:

- Purer than most bottled water
- Complies with state, federal and WHO standards
- Tested in real time with online sensors

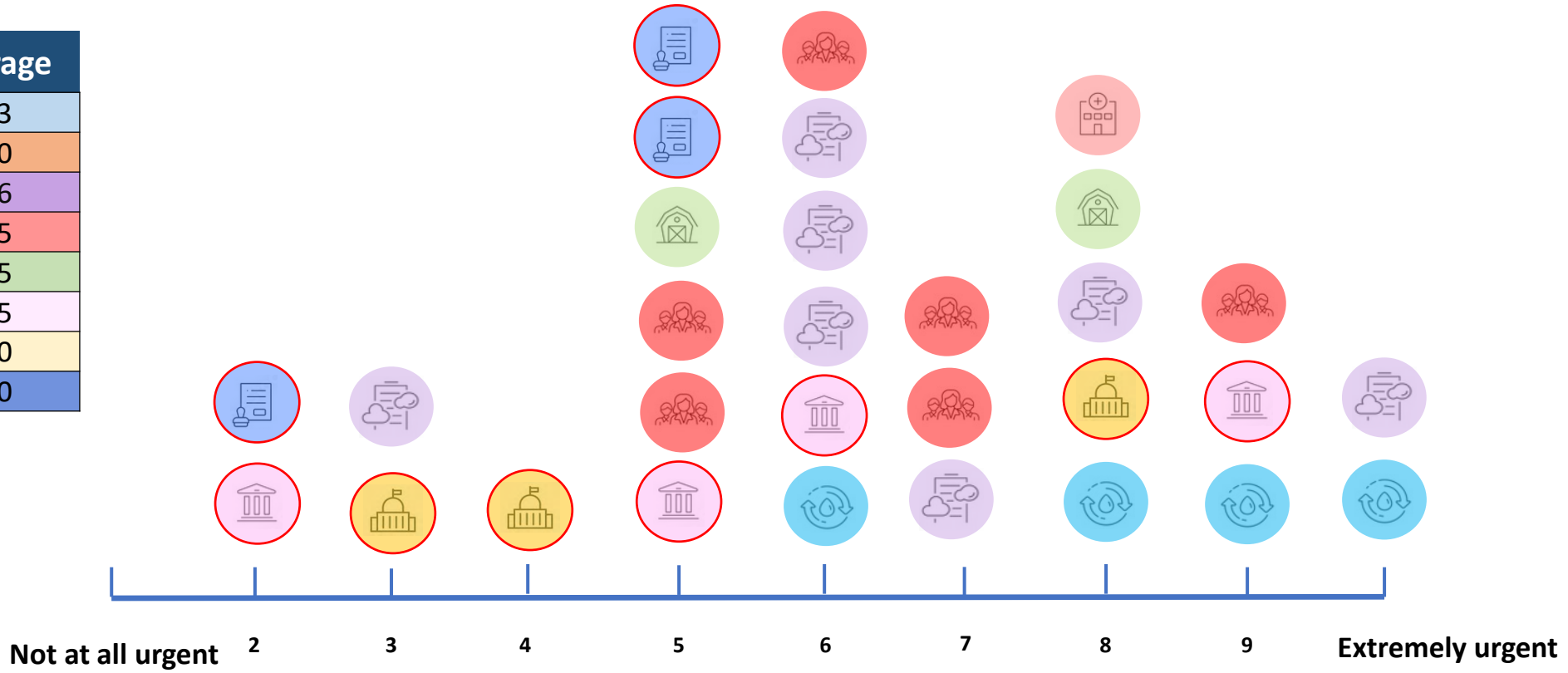
Detailed Findings

Perceptions about Water

Perceptions of the Arizona Water Situation

Stakeholders in academia, government and policy ranked the water situation in Arizona as less urgent than their counterparts in other segments.

Category	Average
Utilities	8.3
Healthcare	8.0
Commercial	6.6
Community	6.5
Agriculture	6.5
Academia	5.5
Government	5.0
Policy	4.0



Perceptions – Awareness

People generally do not think too much about water in their daily lives.

- As long as water comes out of the tap when they need it, they don't worry about it.

  "Arizonans have their head in the sand about the water supply. There is a lack of knowledge and a lack of interest."

  "At some point in time, we have to face up to the music."

  "We have to motivate people to open their eyes and care about things that are now not within their vision."

- However, if someone wants to discuss a new approach to the quality or the supply of that water (change the status quo) - then water becomes very personal. People want to know how those changes will affect their health, lifestyle, and their wallet.
- Further, it raises questions about where water currently comes from.

Perceptions about

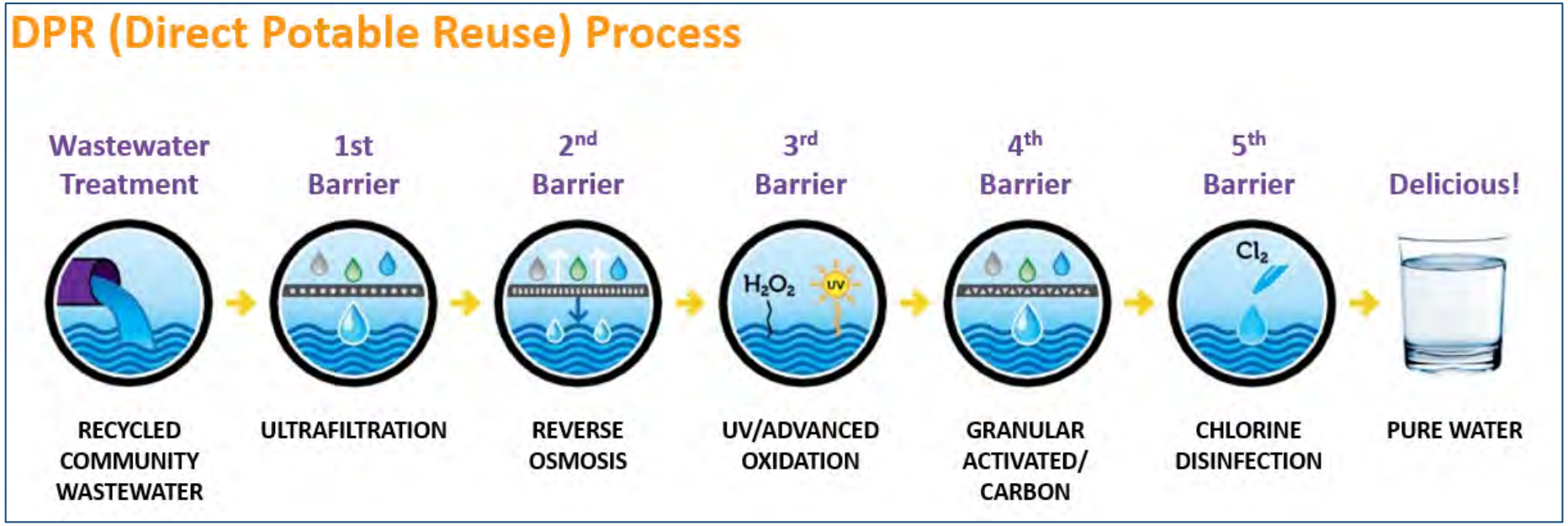
DPR
Direct
Potable
Reuse
WATER

Perceptions of DPR – Introducing the DPR Process through Graphics

Stakeholders viewed *five different graphical representations* of the DPR process to get feedback on the advanced processing that takes place to turn recycled wastewater into drinkable water.

[Due to time constraints, please note that every respondent did not see every graphic. We rotated the examples to get feedback on each one.]

Perceptions of DPR – DPR Process Example 1



Source: AZ PURE Water Beer Challenge report.

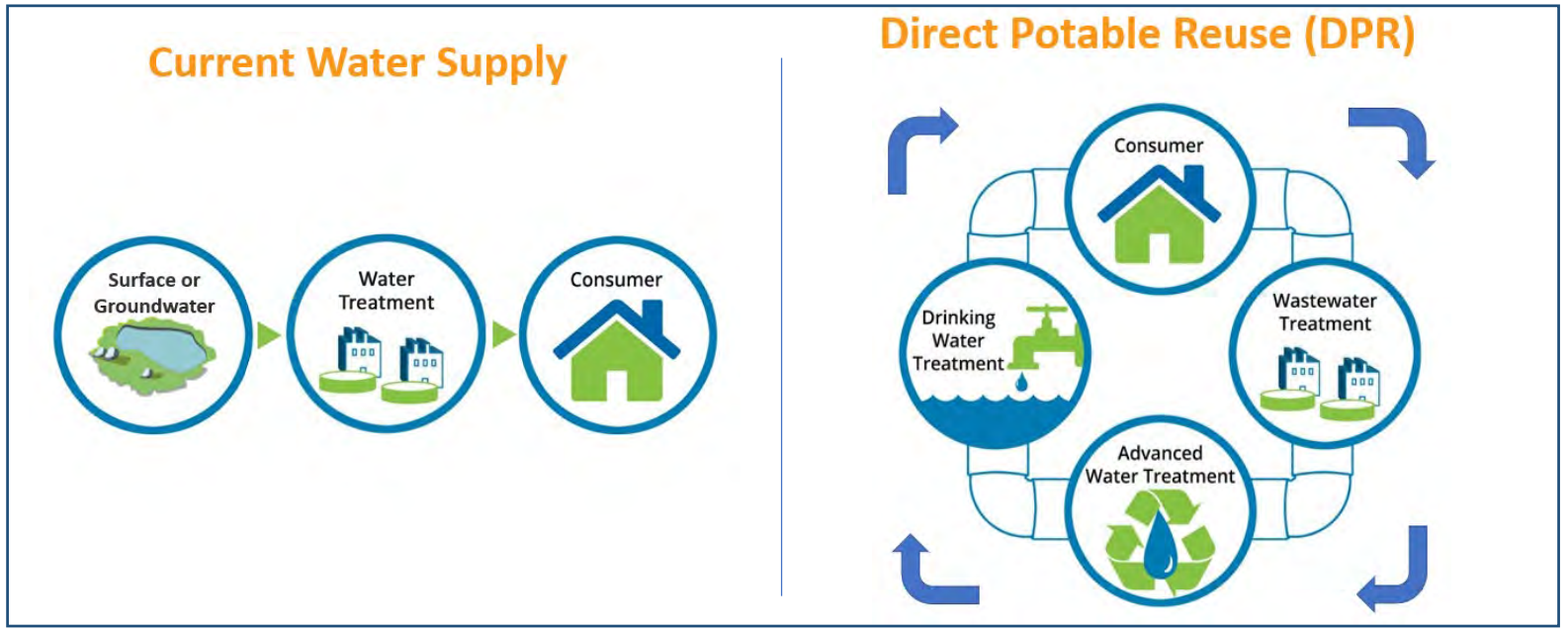
Pros:

- More understandable to the water-knowledgeable
- Liked the glass of water

Cons:

- Might be too technical for the average person
- Did not like the word “Barrier” or “PURE”
- Not enough info. about each step – what is removed or destroyed
- “Chlorine Disinfection” step has negative connotations

Perceptions of DPR – DPR Process Example 2



Source: Created by BrandOutlook from graphics provided by ADEQ DPR report.

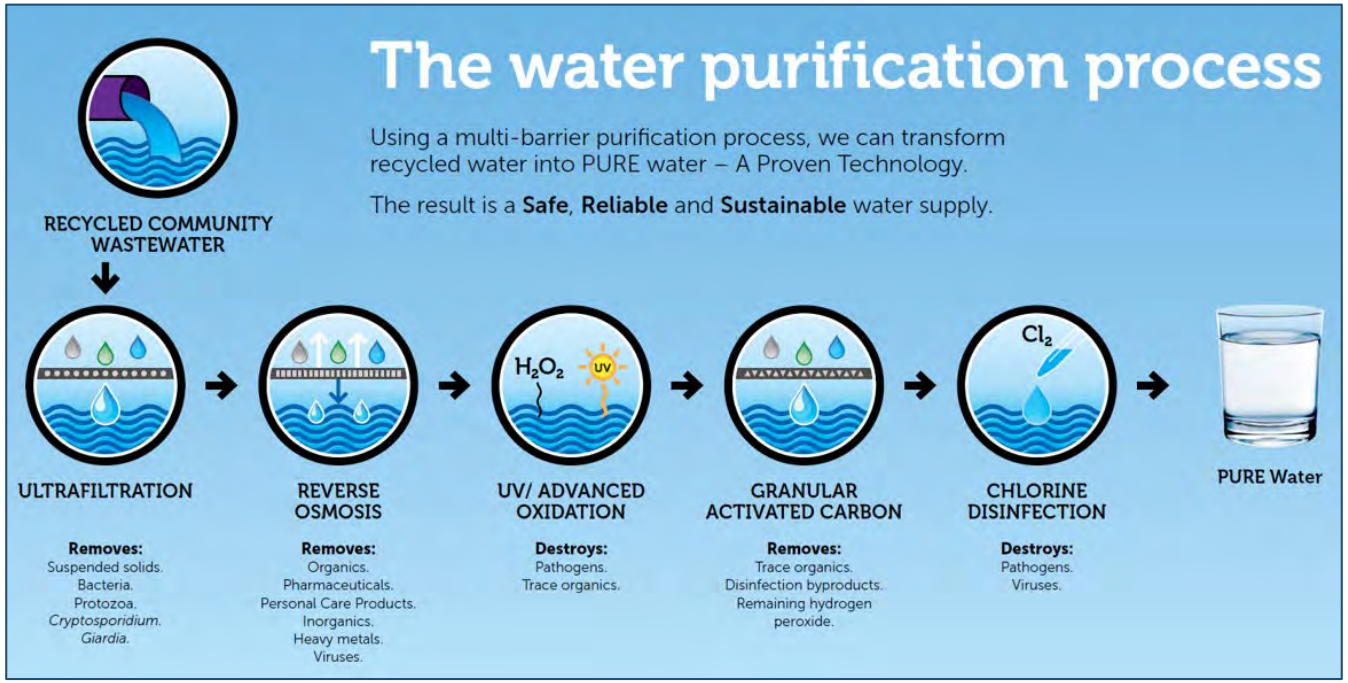
Pros:

- More understandable to the people who were not as water-knowledgeable
- Provided a comparison to where water comes from now

Cons:

- It was unclear what direction the water flowed in the DPR process (added arrows later)
- Confusion about what happened at each of the 3 steps (wastewater, advanced treatment and drinking water treatment)

Perceptions of DPR – DPR Process Example 3



Source: AZ PURE Water Beer Challenge report.

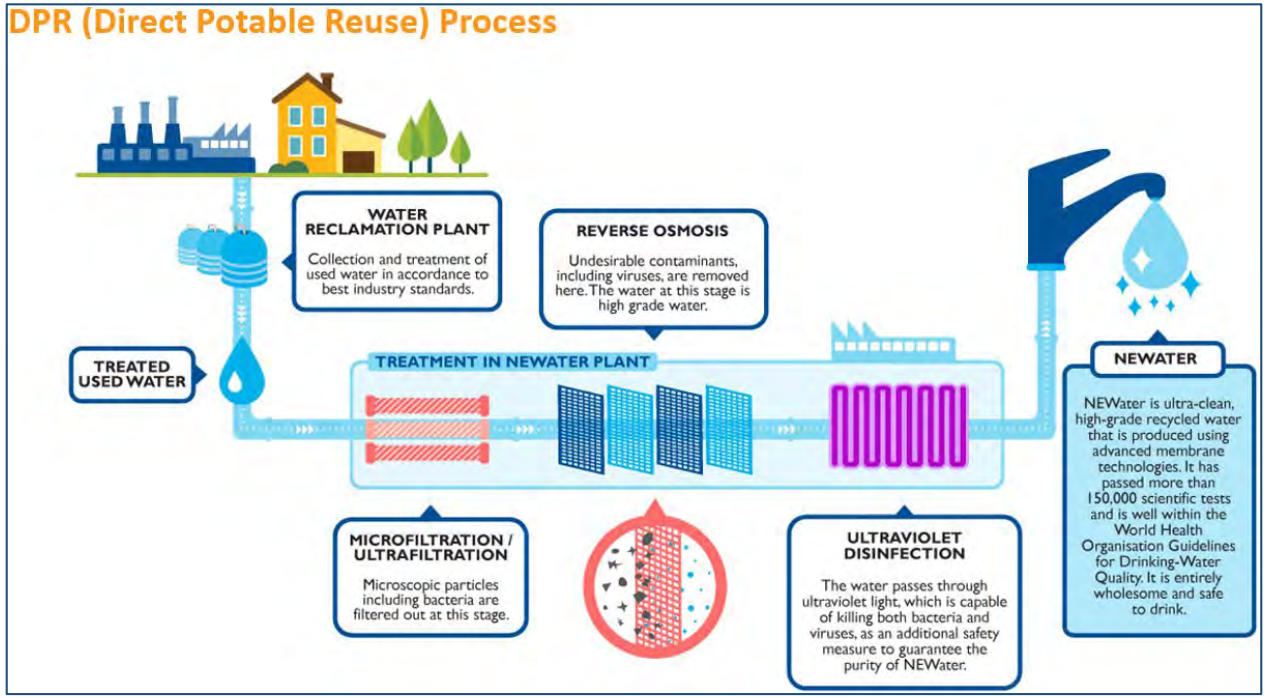
Pros:

- Most liked of all the examples shown
- Liked the additional details about what was happening at each step of the process (i.e., what is being removed or destroyed)

Cons:

- Might be too technical for the average person
- Some terms are too scientific, e.g., Cryptosporidium Giardia
- Did not like the word “PURE” or the reference to chlorine
- Source of “Recycled Community Wastewater” was unclear

Perceptions of DPR – DPR Process Example 4



Source: Singapore's National Water Agency's NEWater program.

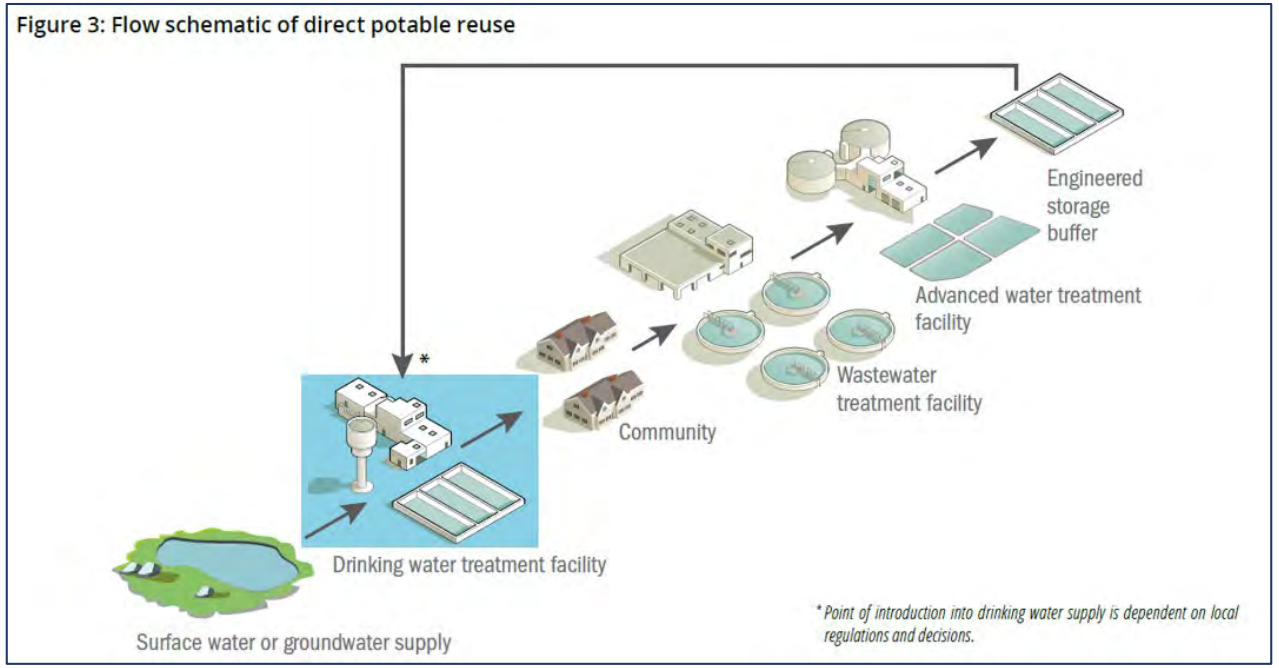
Pros:

- Source of the wastewater was clear (homes, industry)
- Liked faucet and the scientific testing information
- Graphics clearly support each stage (e.g., RO – trapped particles)
- Liked the term "NEWater"

Cons:

- Graphic was thought to be too busy by some of the stakeholders
- One person asked if those processes were being done underground, since it looked like the pipe was underground

Perceptions of DPR – DPR Process Example 5



Source: American Water Works Association's "Potable Reuse 101" brochure

Pros:

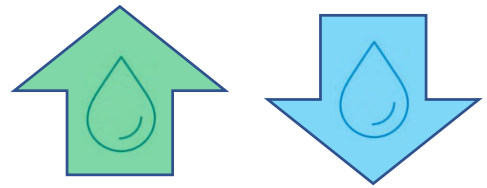
- None
- No one liked this depiction

Cons:

- This graphic was liked the least
- Too busy, too confusing and too hard to understand
- Confusion about "engineered storage buffer"

Barriers to DPR Adoption

Barriers of DPR Adoption



The following barriers to DPR adoption were ranked equally by both the stakeholder groups.

Government Trust Factors

"If you have a city saying it's great, it exceeds water quality standards, we have met all the permitting, people will say 'I don't believe you.'"

"People will say: 'I don't trust that it will be this simple. I don't trust it will be safe and I don't trust that the government knows what they are doing.'"

Unfamiliar with DPR Process

"I think you're going to have a steep hill to climb in getting the message out about what this water is and that it's safe."

"I don't think that without really understanding the process that it's going to be a success."

"There is a general lack of education around water systems or the science in the general population."

Yuck Factor

"Perception's going to be an issue. This is going to be tough to overcome because people have that toilet-to-tap image in their mind."

"If you can't get people over the hump to even touch the water in the first place, all the facilities or money thrown into DPR is not going to help."

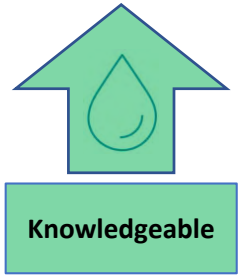
Taste

"DPR generates total dissolved solids. The saltiness of the water increases over time as you do DPR year-over-year. Our people might say 'no, we don't want this because we don't like the taste.'"

"My water tastes bad. It tastes like chlorine."

"You can have the cleanest water, but if it doesn't taste good, people won't drink it."

Barriers of DPR Adoption – Key Issues for Water Knowledgeable



The water-knowledgeable stakeholders tended to rank the barriers related to *implementation of DPR* higher than their counterparts, especially the associated costs.

Cost

"Am I going to pay more taxes? How is it going to affect my finances? Is my HOA fee going to go up?"

"Not every wastewater utility is probably able to afford the infrastructure that is needed to create DPR."

Staffing

"When you take on a new program, you need to make sure it's staffed."

"They already struggle to hire qualified people to run those plants. You don't even need a college degree to run that stuff. It's a really great job. It's a great industry and it's really hard to find qualified people."

Cultural Barriers

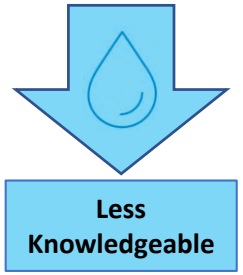
"You need to take into consideration the Indigenous people because there's still a lot of respect for traditional ways. If there is any kind of interference in the way that it's naturally made, then there might be some pushback."

"Reclaimed water is a very touchy situation with our local indigenous populations."

Regulatory / Policy

"If the permitting process is so onerous that it takes years to get certifications, or if they are so burdensome and cost prohibitive to meet the permit requirements, then I think cities will look elsewhere."

Barriers of DPR Adoption – Key Issues for Less Water Knowledgeable



Those who were <u>less water-knowledgeable</u> ranked *DPR skepticism about safety* as the biggest barrier.

Skepticism about Safety

"I wouldn't just drink it because somebody told me to drink it."

"I think people will just freak out and say: 'I just flushed that down the toilet – I can't drink it.'"

"You're just going to have a set of people who don't believe the technology really works."

Outreach Diversity

"You need to have tailored approaches to work with communities that have mistrust for different reasons, so you would need to find professionals who have experience working with different cultures to provide guidance on how to do that specific outreach."

"It's complex because we've got a diverse state, diverse populations."

Lack of Credible Sources

"I think if I was going to roll the program out, I would want to know who the trusted folks are."

"Is it being used somewhere in the first world comparable to the place I live?"

Political Issues

"It's an issue of public concern, so therefore it crosses over into the field of politics."

"There are people who won't listen to your facts and will just oppose it."

Implementing DPR

Adoption & Implementation of DPR – ADEQs Role

What role does the State/ADEQ play?

According to the stakeholders, ADEQ has the following five responsibilities:

1) Create rules, regulations and guidelines that are flexible so all communities can comply based on their unique situation

"The regulations need to be protective of human health, but if it's impossible to meet the standards, then we'll never do DPR either, so we must have the balance."

"They've got to allow utilities to be nimble and individualized for whatever individual barriers they may be facing."

2) Instill confidence that DPR water is safe, healthy and meets all standards

"DEQ's role is a governmental entity and a technical entity, so their main role is to vouch for the safety and security of those regulations and then to be a part of the outreach that's happening with utilities, community leaders, elected officials and water associations."

3) Bring all constituents along from the beginning and continue to inform throughout the process

"If you bring them along with you on the trip, then by the time you get to your destination, they're going to be with you, and they'll just continue."

Adoption & Implementation of DPR – ADEQs Role

What role does the State/ADEQ play?

ADEQ responsibilities (cont.):

4) Provide guidance and assistance in overcoming barriers: funding, technical know-how, staffing

"The state already plays a role in providing low cost, low interest loans, grants and technical assistance, and the state should continue to do that."

5) Lead outreach efforts to overcome barriers to adoption for community leaders and general population

"Their part will be to help communicate the way the regulations work and why they provide safety for human health." "You can't just do it at the outset and then stop."

Adoption & Implementation of DPR – ADEQs Role

What role does the State/ADEQ play?

ADEQ should also be sensitive to the following:

1) Be transparent throughout the entire process of rule making, testing:

"I think we just have to ensure that there's transparency that we are treating this water and removing everything out, and that it's truly safe to drink."

2) Be a leader in terminology consistency

"We're always struggling with terminology because it used to be called wastewater, and then it was called effluent, and then reclaimed water. Now we call it recycled water, but where I've ended up is calling it, when you treat it to a high level, it is recycled water. When you treat it for DPR, it's purified water."

"Whatever we can do to be consistent [with terminology] across the state would be really nice because if you lack consistency then it will create confusion and mistrust."

Adoption & Implementation of DPR – ADEQs Role

What role does the State/ADEQ play?

ADEQ should also be sensitive to the following (cont.):

3) Be a partner with other water policy leaders to ensure holistic solutions for supply issues

"You need some level of alignment so that they're complementary to each other instead of conflicting."

"DEQ and DWR should be the real champions of it."

"The DWR will need to be up-to-speed because there will be things that are included that will have impacts. Do I get any credits? How does this impact my allocations?"

4) Ensure all credible sources of information/endorsements are non-partisan

"Think about bringing a Republican and a Democrat who are no longer battling with each other, but they both just care about Arizona. Oh, my goodness, that would be an absolute homerun right there."

Adoption & Implementation of DPR – Leading the Effort

Who leads and supports the DPR effort?

Stakeholders overwhelmingly agreed that the people leading the effort to bring DPR to a community should *begin with the people within the community,* not from the state. Imposing a state government DPR mandate on any community was heavily frowned upon.

Local community leaders mentioned most often were:

- County supervisors, mayors, city council members, and utility or water facility leadership.

Many others in the community came to mind as good options to support the adoption of DPR, including:

- Chambers of Commerce
- Environmental groups
- University presidents and professors
- Large commercial businesses
- Housing associations (HOAs)
- Resorts
- NGOs
- Faith-based leaders

"Local government has got to lead it because they are the water providers."

Adoption & Implementation of DPR – Pilot Programs

Should a pilot DPR program be considered?

Showing successful results from pilot communities can build credibility and interest in DPR.

"I'm a big fan of benchmarking and comparisons and examples that work around the country or the state."

"Scottsdale did a pilot project, right? Have those residents talk. Probably half of them don't even know about it. Have them start talking about it."

The pilot process needs to be completely transparent with a parallel, educational outreach campaign throughout the entire implementation. This can lead to a domino effect across the state.

"If you're going to roll it out, do it where there is a water crisis and you're coming to the rescue and providing a clean and steady source of water to pilot your program. Don't insert yourself into a place where things aren't broken yet. Go to where it's going to be the most appreciated and where the need is the greatest."

"I think once you get [the pilot] up and running it might be easy to get others to follow."

Outreach Strategies

Outreach Strategies to Support Adoption of DPR

Support of DPR in a community should be localized and personalized – this is mandatory. One size does not fit all. Individual communities need to make the case for their unique situation.

"Here is the problem, if we do nothing, here is what will happen."

"Here is how DPR can help and here is how DPR is safe, economical, good for the environment, and will protect the future generations."

The stakeholders that were the least water knowledgeable had the most ideas about how to communicate with the public. These suggestions fall within the five areas below:

- Partnerships
- Influencers / Spokespeople
- Events & Activities
- Information & Messaging
- Branding DPR Water

Outreach Strategies – Partnerships

Partnerships

An important discovery from the stakeholder interviews was the overwhelming and enthusiastic willingness of community leaders to partner with ADEQ to help their communities.

This extremely valuable partnership will engender trust and help to create acceptance of DPR in the community. Take advantage of this offer of partnership with these community leaders.

"Happy to pull together some CEOs and get CEO marketing teams to come together and have a marketing think tank group of what they think would work."

"We're happy to be a partner with our logo next to ADEQs logo in sending out information to our members."

"We could do a series of thought leadership pieces or things like that around what [DPR] could mean for the state or community."

"I'm always looking for ways we can show [our company] using sustainable practices within our communities. Since we're headquartered here, this is probably the most important community we are in."

Outreach Strategies – Influencers & Spokespeople

Influencers / Spokespeople

The best influencers to promote DPR within a community*:

- Social media influencers (e.g., TikTok)
- Healthcare / AMA
- University presidents or professors
- Scientists
- Educational leaders
- Business leaders
- Associations and not-for-profits
- Chambers of Commerce
- Forest rangers
- Investigative reporters
- Beloved local sports figures
- Former politicians no longer running for office
- Faith-based leaders

"You absolutely need the medical community, public health department's seal of approval to certify that this is fine and it's safe."

Active politicians were thought to be a poor choice as it could create division.

* Roughly in order of greatest potential

Outreach Strategies – Events & Activities

Events & Activities

"[The beer challenge] was an unbelievably fantastic way to demonstrate to people that this is a clean and pure water source, so those events are really powerful."

Being able to let people taste the water will be integral to DPR gaining acceptance.

Stakeholders provided a few examples of how to get the community involved:

- Show people drinking it, including the governor, mayor and utility leadership
- Meet people where they are – like churches, business groups, networking breakfasts
- Head-to-head tests of DPR water versus bottled water, similar to the Coke versus Pepsi Challenge
- Pass out water testing kits with free lab results sent back to their homes
- Conduct a mobile tour to ensure you reach all parts of the state
- Provide free water in environmentally friendly takeaway cups at public events
- Run lemonade stands
- Continue the AZ PURE Beer Challenge
- Town Hall meetings

"PSAs are not enough. High-touch is important."

Outreach Strategies – Information & Messaging

Information & Messaging

The educational effort to bring DPR to life will need to be substantial. People want to have information from a variety of sources to help them feel comfortable about the safety of the water.

- Highlight the need for water intervention. Individual communities need to make the case for their unique situation.

"Here is the problem, if we do nothing, here is what will happen." "Here is how DPR can help and here is how DPR is safe, economical, good for the environment, and will protect the future generations."

"A crisis is coming. We may not be currently in it, but it is coming. Then paint a picture: 'This is the problem, This is what can happen with this solution, and This is what our future looks like."

"Create a scarcity need – you will run out of water by this date if you remain at the status quo."

- Provide information about communities that already have such a program. Get people from those communities to talk about it. Show them drinking the water. Provide statistics about the water.

"Be transparent but really highlight and focus on the benefits of the community resilience, supply and economics."

"Reassure people who are saying: 'I'm nervous about this water; tell me why I shouldn't be.'"

- Grassroots efforts were mentioned multiple times as a way to educate about DPR.
- *"Run a campaign like 'Beat the Peak,' including kid-friendly messages, games and coloring books"*

Outreach Strategies – Branding the Water

Branding DPR Water

Other cities with current DPR programs have elected to brand their water.

Two such examples are from San Diego and Singapore:

SAN DIEGO Pure Water

A few respondents who were asked were mixed in their assessment on whether DPR water should be branded:

- Advantages to branding the new DPR water is that people may feel that it is as safe as bottled water.
- Disadvantages are that by branding it, the risk is that it is considered different than typical tap water in the home. It may be more advantageous not to make the distinction.

"It's a bad idea to brand it. If it's just water and people just think of it as water, you're good to go, so I would not."

"I don't want all the bottles and all that waste. To me that's a bad thing to do to the environment."

Appendix

Study Documents

Discussion Guide

Barrier Exercise

DPR Process Illustrations

DPR Facts Slide

Thank you!

BrandOutlook
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Arizona Department
of Environmental Quality

HMA PUBLIC RELATIONS

BrandOutlook

June 8, 2023

ADEQ
Arizona Department of Environmental Quality

Final Report – Understanding Perceptions and Barriers to Direct Potable Reuse (DPR) Adoption

Phase 2 – Quantitative Research with Arizona Residents

Project Overview

- Objectives, Methodology, Survey Flow

Executive Summary

Key Findings

- Perceptions about the Arizona Water Situation
- Current Water Consumption
- Perceptions about DPR Water
- DPR Adoption Barriers & Influencers
- Outreach Strategies

Recommendations

Demographics

Appendix

Project Overview

The Arizona Department of Environmental Quality (ADEQ) is undertaking a process to establish rules, regulations and guidelines for the implementation of Direct Potable Reuse (DPR) processing in Arizona. ADEQ has engaged HMA Public Relations and BrandOutlook to conduct research with stakeholders to determine perceptions about DPR.

The information gained in this research will help ADEQ provide tools and resources for municipalities, professionals in the water/wastewater industry, local leaders and potential customers on this viable water resource option. A key part of this effort will be to *gauge public perceptions about DPR* and to *inform proposed rulemaking* to bring clarity and understanding to constituents throughout the state.

Specific objectives include:

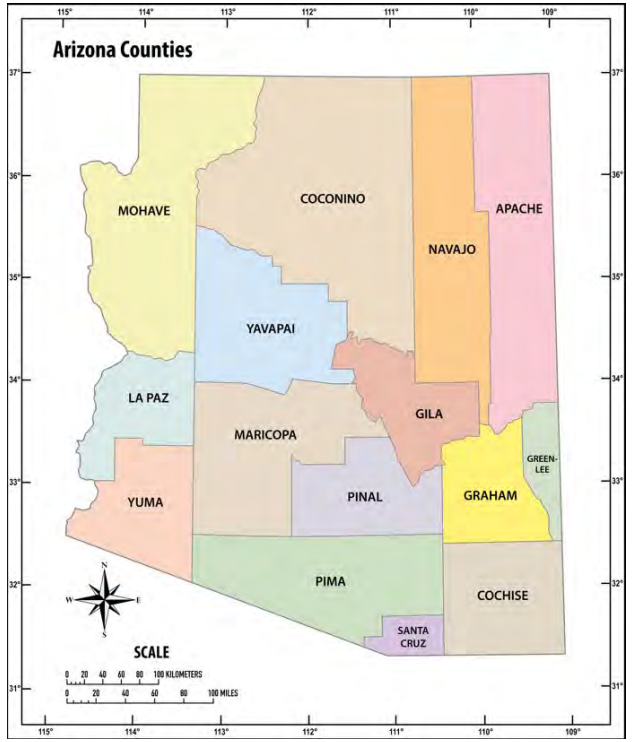
- Understand perceptions about the urgency of the water situation in Arizona
- Determine the top concerns and understand the efforts to alleviate these issues
- Find out what people think about DPR, including the benefits and drawbacks
- Gather information about the biggest barriers to adopting DPR
- Understand the best ways to communicate with disparate groups of the public about DPR
- Gain feedback about the role the state and ADEQ should play as they present DPR as a viable solution to both the municipalities and end users

This initiative had two phases: Phase One included qualitative stakeholder interviews and Phase Two was a quantitative survey with adults in Arizona. *This report is a summary of Phase Two.*

Methodology

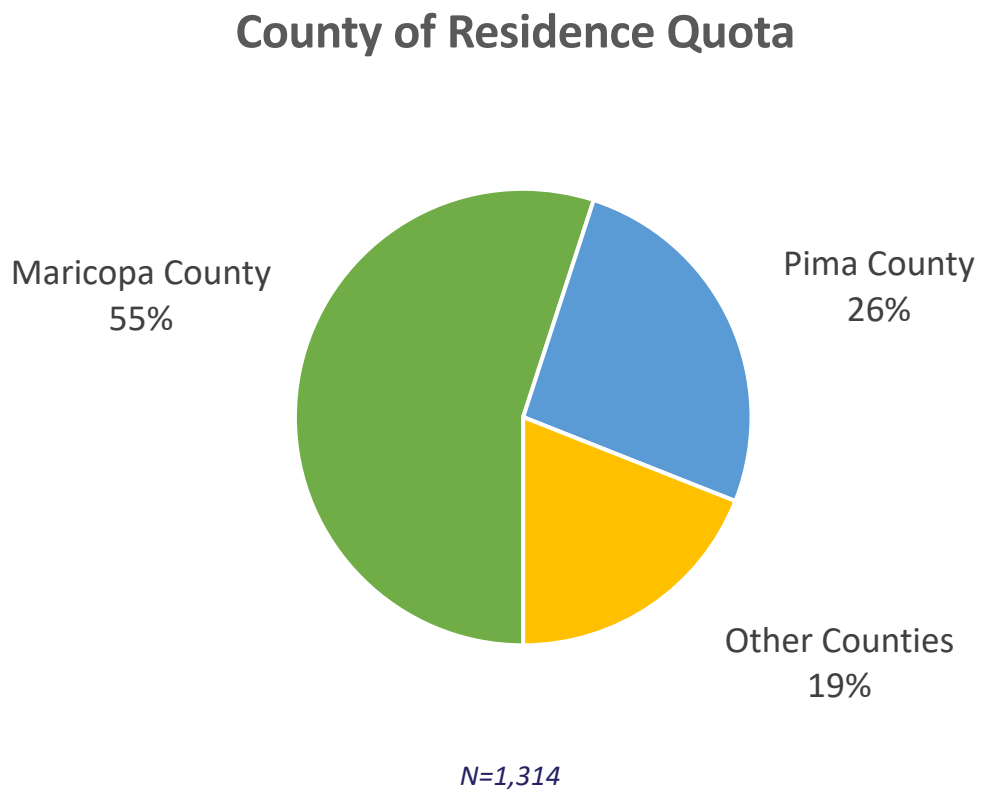
In Phase Two of the project, we surveyed residents from across the state of Arizona:

- Total completed surveys: N=1,314
- It was a blind survey, meaning that ADEQ was not disclosed as the sponsor.
- The source of respondents was a consumer panel of Arizona residents.
- Quotas were set to ensure we had a representative sample of adult Arizona residents.
- Respondents had the option to take the survey in English or Spanish.
- The survey was in the field for two weeks (May 8 – May 19, 2023).



Quota: County of Residence

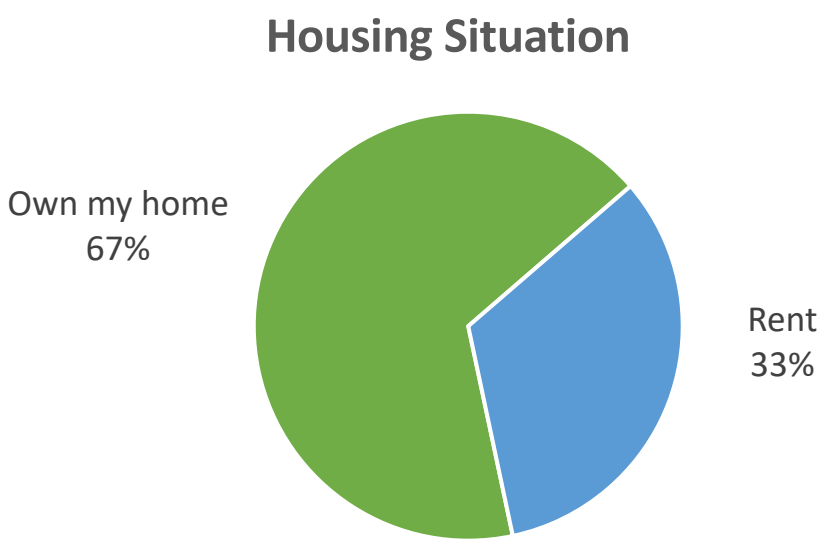
Quotas were established for Maricopa county, Pima county and for the rest of the state based on the Arizona census.



County of Residence	Total
Maricopa County	720
Pima County	342
Pinal County	69
Yavapai County	43
Yuma County	36
Mohave County	36
Cochise County	18
Coconino County	13
Navajo County	13
Gila County	9
Apache County	8
Graham County	5
Santa Cruz County	2
Total	1,314

Quota: Housing Situation

Limits were set to ensure no more than 67% of the survey respondents were homeowners. This quota matched the Arizona census.

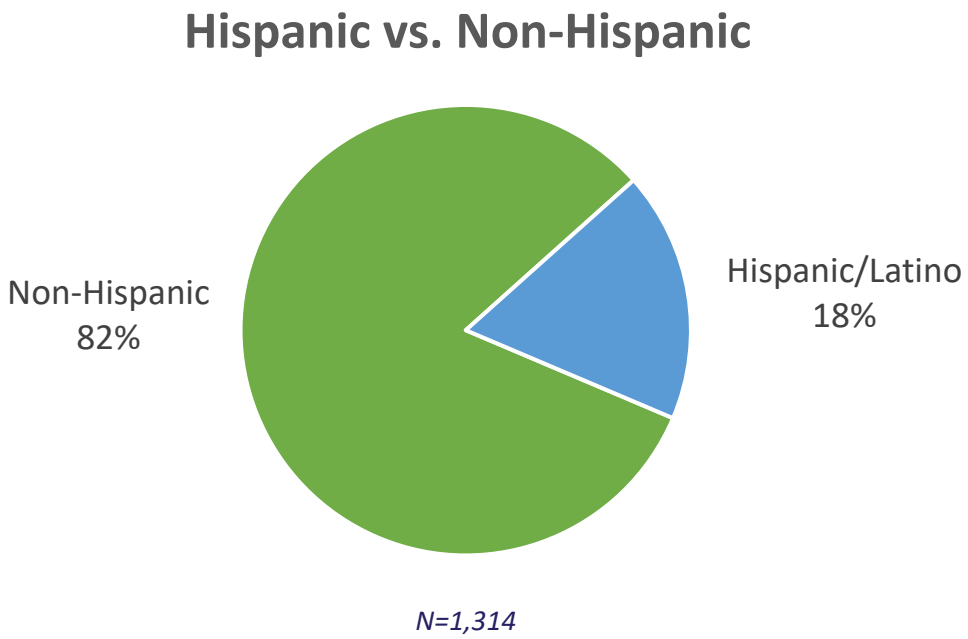


N=1,314

Quota: Hispanic vs. Non-Hispanic

Eighteen percent of the survey respondents identified as Hispanic/Latino. All respondents had the option of taking the survey in Spanish.

According to the census, the percentage of Hispanics is 32%. During the analysis, the data was weighted upward and compared to ensure the data collected was representative of the population. It was determined that the additional weighting was not necessary as few differences were detected.



N=1,314

1% of respondents took the survey in Spanish

Methodology – Survey Flow

Perceptions of Arizona Water Situation

- Biggest challenges
- Severity
- Urgency
- Top concerns
- Sources of information

Current Water Consumption

- Types of water consumed
- Reasons for aversion to tap water

Perception of DPR

- Initial reaction to educational video
- Favorability / likelihood of drinking DPR water
- Safety of DPR
- DPR as a source to address water situation

Barriers to DPR Adoption

- Overall objections
- Concerns about DPR safety
- Reasons for aversion to drinking DPR water

Information Sources, Naming & Opportunities

- Preferred sources of information about DPR
- Preferred name for DPR
- Best influencers / spokespeople to share DPR benefits

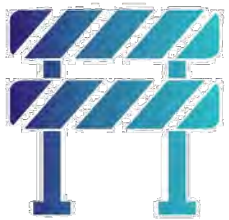
Executive Summary

DPR Perceptions & Adoption in 60 Seconds

Broad concern about water supply now and in the near future

Consumption of water in the home is largely filtered or bottled

DPR was well received and can be a viable part of the solution



Barriers to DPR adoption are skepticism about safety, yuck factor and cost

Educational outreach programs can overcome barriers to DPR adoption

Key Findings

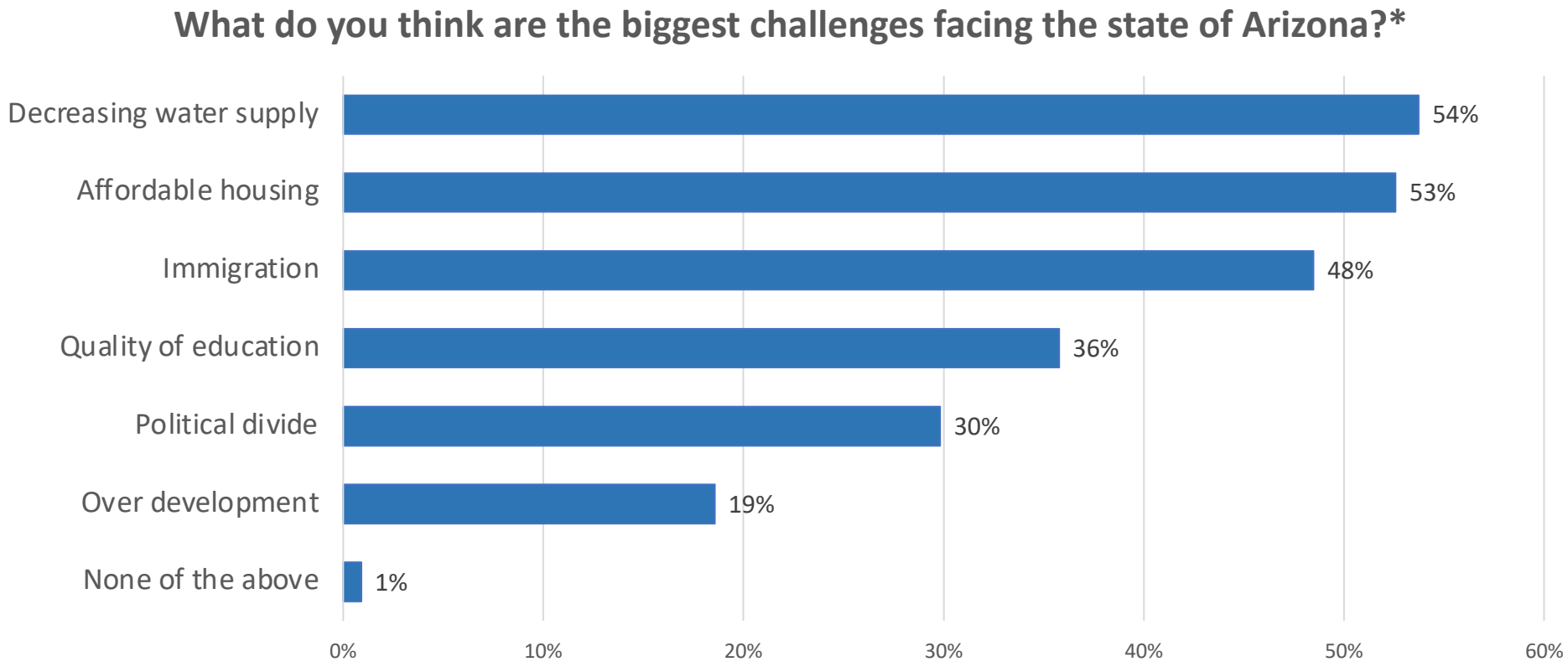
Perceptions about the Arizona Water Situation

Section Summary – Perceptions of Arizona Water Situation

- Perceptions about the water situation in Arizona:
  - People believe that one of Arizona's biggest issues is a decreasing water supply.
  - Most feel the situation is very serious and is imminent, with water shortages within five years.
  - Contributing factors to the water situation in AZ are population growth and an inadequate supply of water. People also believe there is a lack of widespread conservation efforts.
  - Generally, people get their information about the water situation in AZ from the local news or the internet.

Greatest Challenges Facing Arizona: water supply and affordable housing

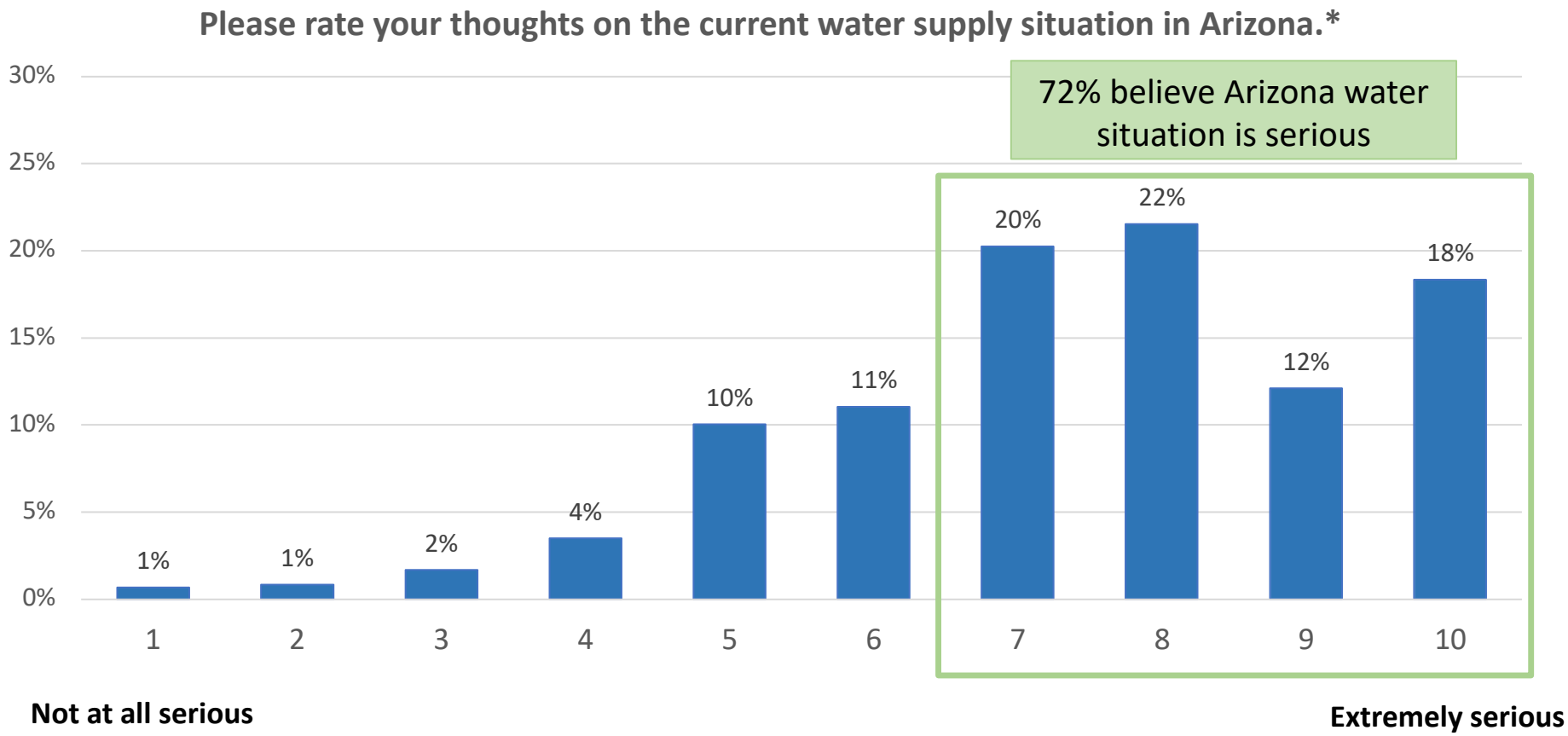
Decreasing water supply and access to affordable housing were the #1 and #2 challenges mentioned by respondents, followed by immigration.



**Respondents were allowed to select multiple responses; therefore, the total exceeds 100%. | N=1,314*

Majority of respondents rate Arizona's water supply situation as serious

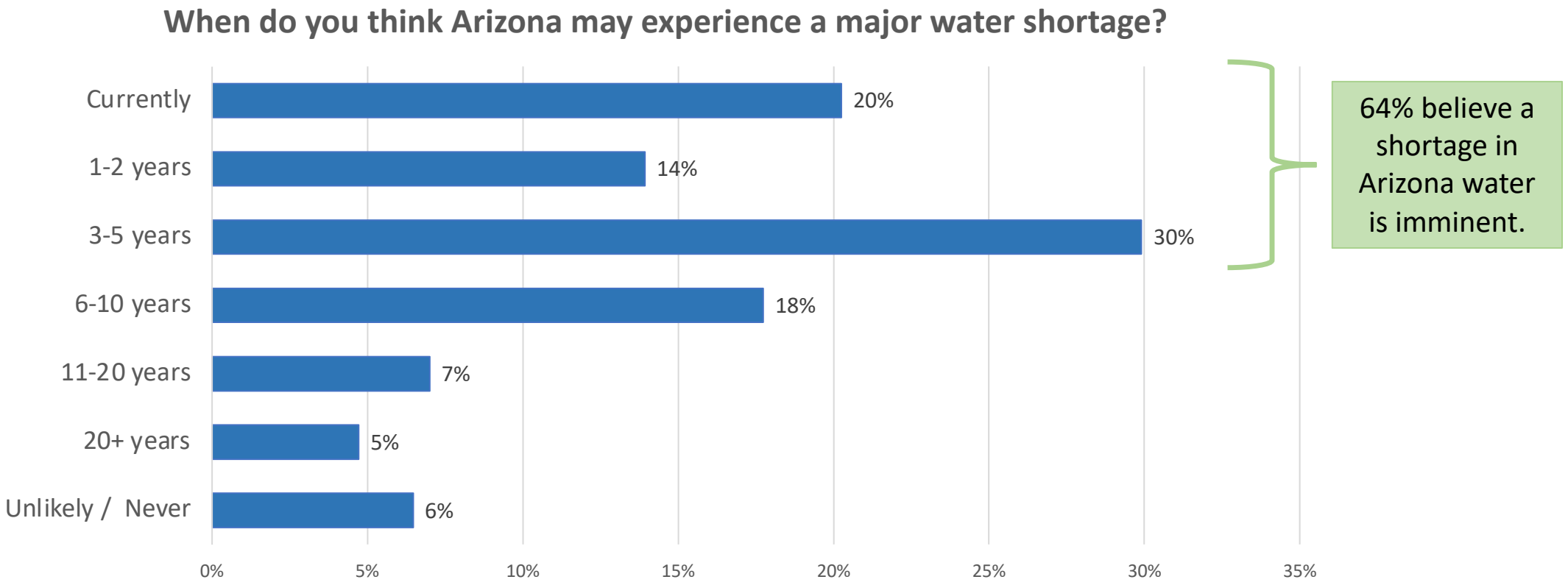
Almost three-quarters of respondents rated the seriousness of the current water supply as very to extremely serious (7 or higher on a 10-point scale).



Respondents rated on a scale of 1-10 where 1 was not at all serious and 10 was extremely serious. | N=1,314

Majority predict a major water shortage in Arizona within 5 years

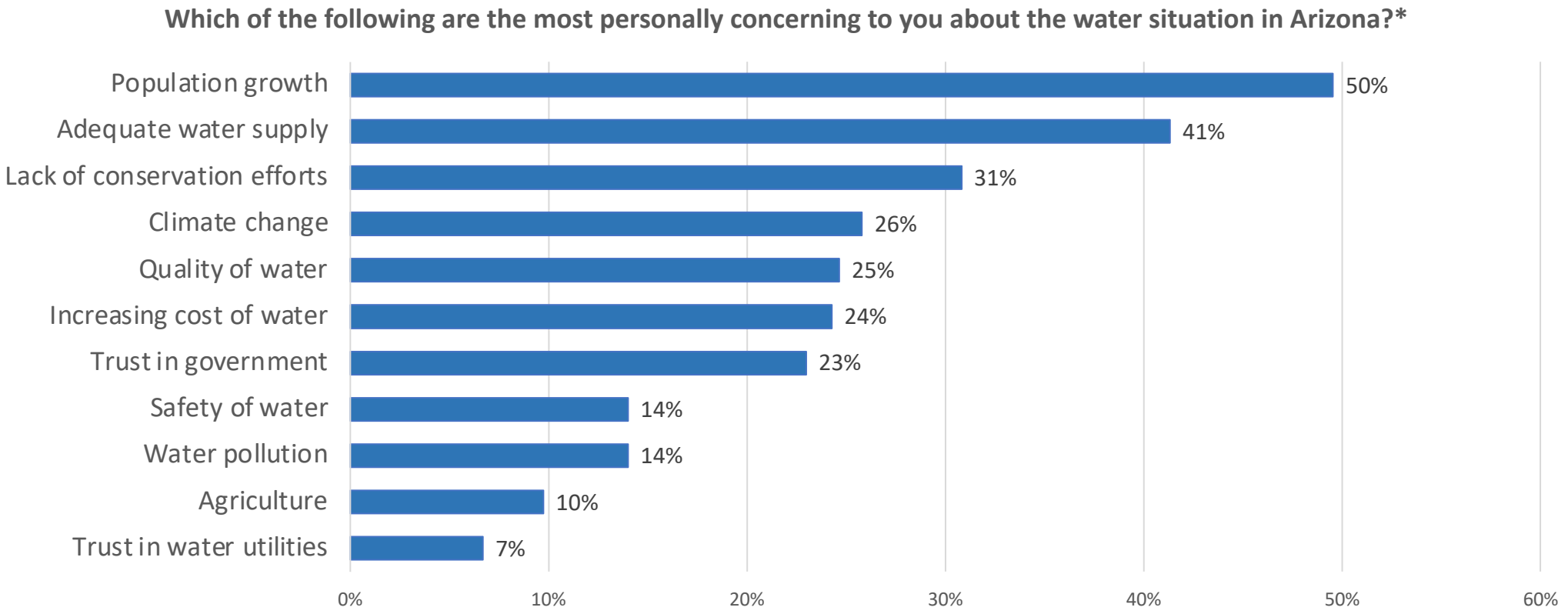
One in five respondents believe Arizona is already facing a water shortage. Another 44% think there will be a major water shortage in the next five years.



N=1,314

Biggest personal concern about Arizona water situation was growth

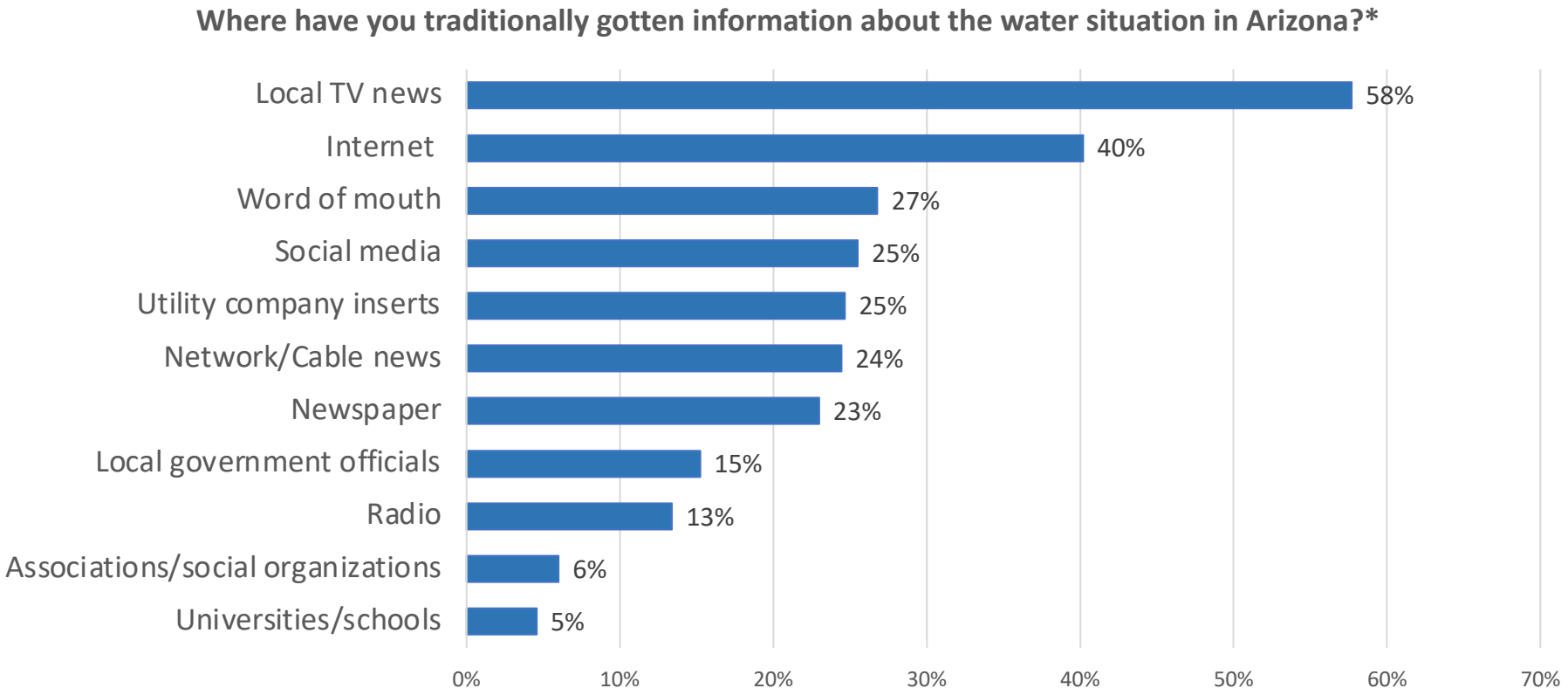
The number one concern about the Arizona water situation was population growth, cited by half the respondents. Having an adequate water supply was mentioned by four in ten of those surveyed.



**Respondents were allowed to select up to three responses; therefore, the total exceeds 100%. | N=1,314*

Local news & internet are main sources of AZ water information

Nearly six in ten respondents surveyed said they get information about Arizona water issues from their local news team. The internet was mentioned second by 40% of the respondents.



**Respondents were allowed to select up to three responses; therefore, the total exceeds 100%. | N=1,314*

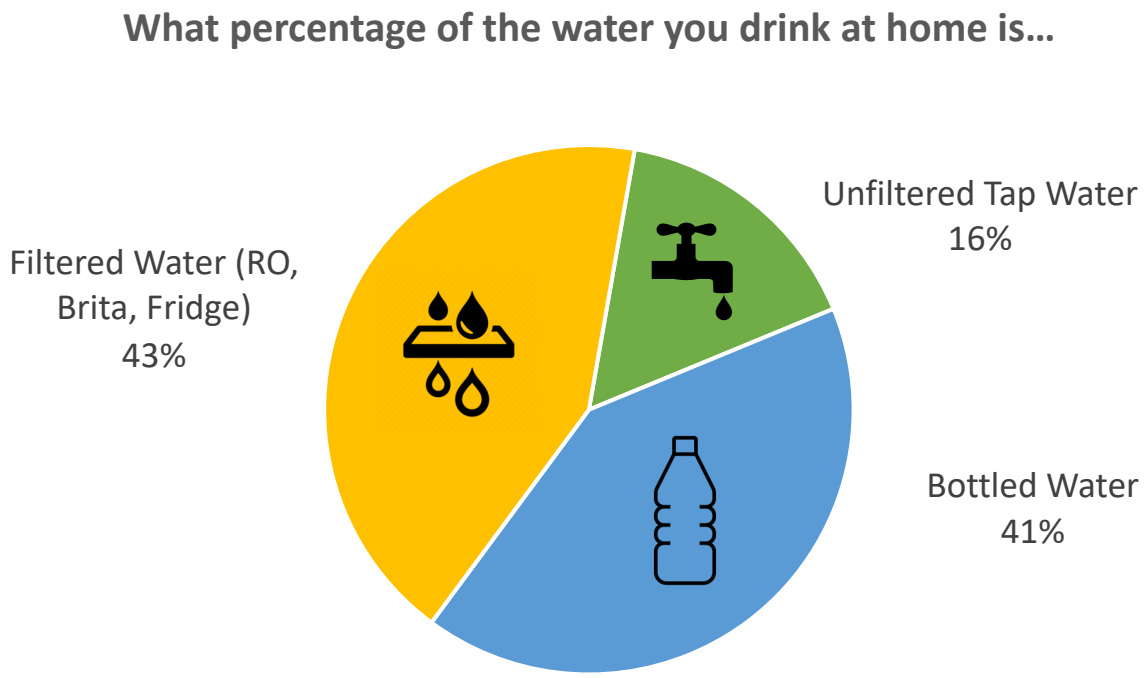
Current Water Consumption

Section Summary – Current Water Consumption

- Current water consumption:
  - Only a small percentage of people are drinking unfiltered water from the tap.
  - Most people either filter their tap water or drink bottled water.
  - The main objections to drinking unfiltered tap water are the taste of the water and potential safety or health concerns.

Most respondents do not drink unfiltered tap water

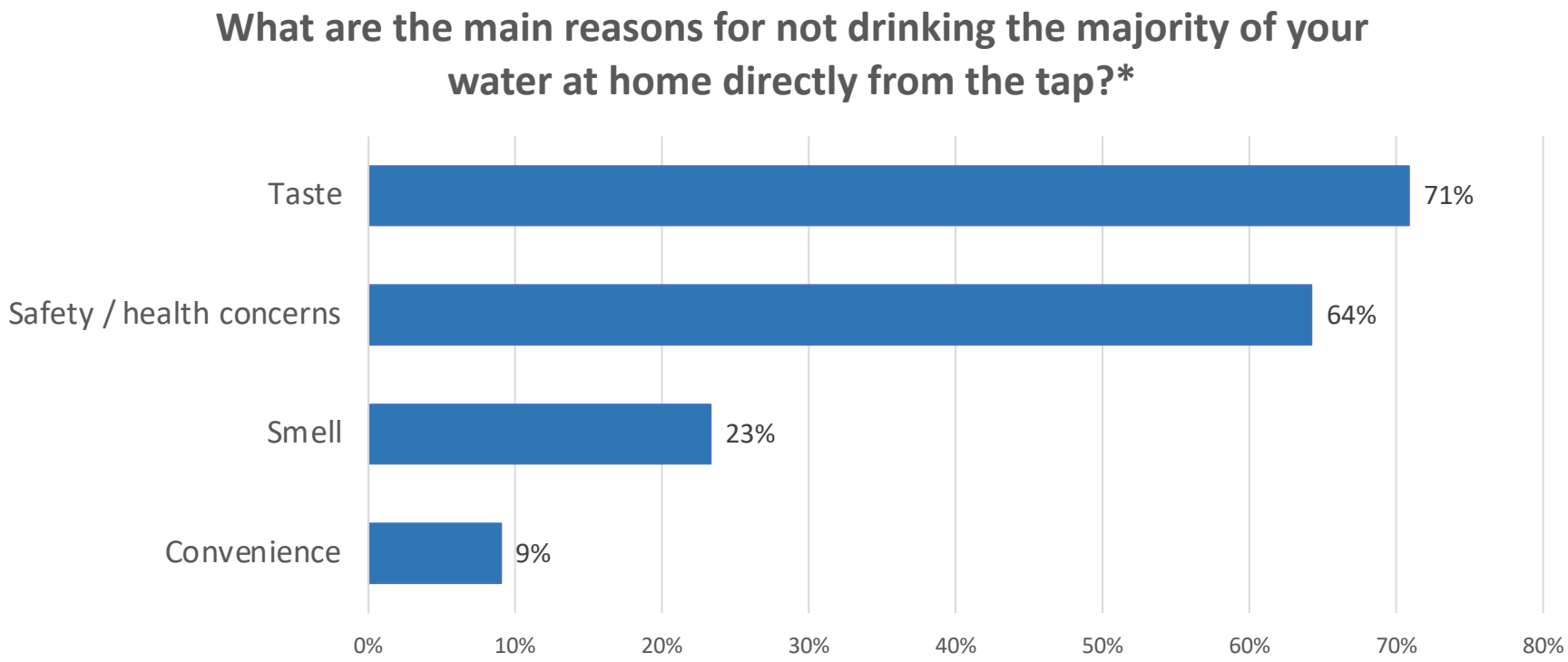
Over four in ten respondents currently consume either filtered tap water or bottled water in their homes. Only 16% said they drink water at home directly from the tap.



N=1,314

Taste and safety were the main reasons for avoiding unfiltered tap water in the home

Seven in ten respondents who consumed little to no unfiltered tap water at home said they objected to the taste. Sixty-four percent (64%) said they had safety or health concerns about tap water.



**Only respondents who consumed 50% or less of unfiltered tap water were asked this question. | N=1,163*

Perceptions about

Section Summary – Perceptions about DPR water

- Most respondents reacted favorably to the information in the video about DPR water.
  - They appreciated that it allowed Arizona to reuse or recycle their water. They also felt that they learned new information from the video.
- Those who did not react favorably to the video, said they were skeptical about the safety of DPR water or skeptical that the process of cleaning it really would work.
- A majority of respondents said it would likely help address the water situation in AZ.
- Most respondents said they would be very likely or somewhat likely willing to drink DPR water.
  - They said that they would trust that the process mentioned in the video would produce safe, clean and drinkable water.
- About a third said they would be unlikely to drink DPR water.
  - They were skeptical about the safety of the water and did not trust that the process could produce drinkable water.
  - Others cited their aversion due to the yuck factor of the source of DPR water.

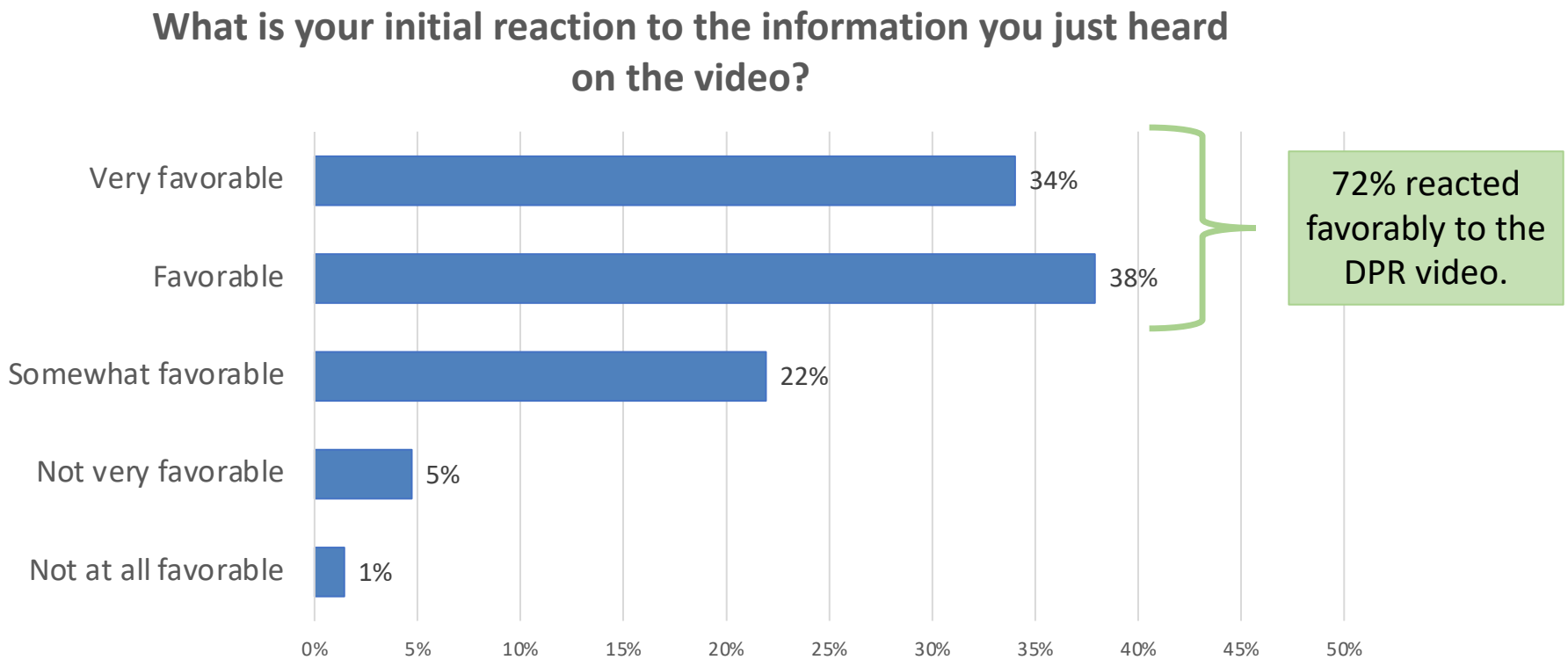
Video Embedded in Survey

To ensure that all respondents were equally informed about Direct Potable Reuse (DPR) water, an educational video was embedded into the survey. The content of the video described the process by which household wastewater was converted into drinkable water through various scientific processes.

- The video was one minute and 22 seconds long (1:22).
- The video was narrated in English.
- Subtitles were hard-coded into the video in English and Spanish.
    - Language preference dictated which video was viewed by the respondent.

Initial reaction to DPR information was favorable by most

A small percentage of respondents said their reaction was unfavorable after watching the video explaining Direct Potable Reuse (DPR) water.



N=1,314

UNAIDED: Reasons for *favorable* reaction to the DPR video and information

The top reason people gave for being in favor of DPR water was that they appreciated that it allowed Arizona to reuse or recycle their water. Other respondents cited that they learned something new about water by watching the video.

UNAIDED: Why was your initial reaction 'favorable' or 'very favorable'? (n=945)*	
Good to reuse/recycle water	21%
New information/learned something	18%
Safe/clean/drinkable water	13%
Generally positive	12%
Good for water conservation	8%
Good information/useful information	8%
DPR is a solution for water crisis	7%
Already knew info	5%
Skeptical about the process/safety of water	4%
Easy to understand the process	3%
Good for the environment	3%
Hopeful for the future	2%
DPR is a useful solution	2%

**Only comments that were made by 2% or more of the respondents are shown in the table.*

UNAIDED: Reasons for *unfavorable* reaction to the DPR video & information

The biggest reason people gave for not being overly favorable to DPR water was that they were skeptical about the water cleaning process and had reservations about the safety of DPR water. Other respondents brought up the yuck factor as a reason for undesirability.

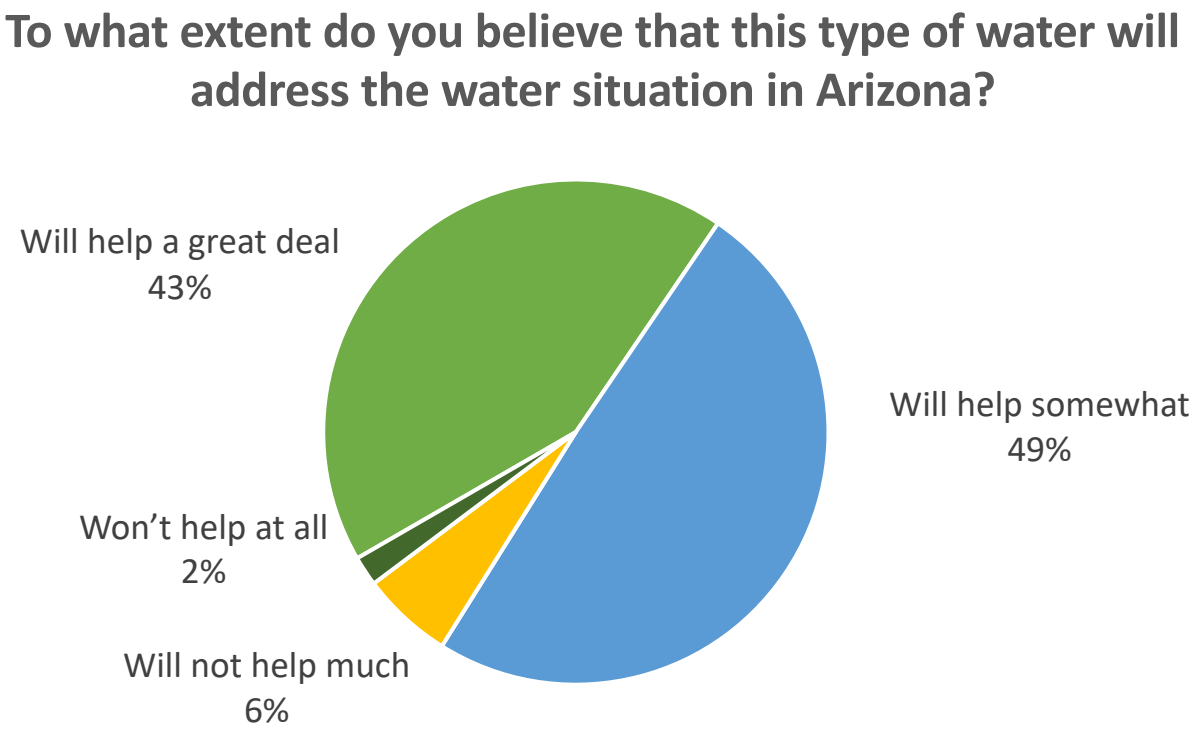
UNAIDED: Why was your initial reaction 'somewhat favorable,' 'not very favorable' or 'not at all favorable'? (n=369) *	
Skeptical about the process/safety of water	31%
Gross/yuck factor	9%
New information/learned something	7%
Unsafe water to drink	7%
Good to reuse/recycle water	5%
Needs more information about DPR	5%
Generally negative	5%
Use water for other purposes not drinking	5%
Will not drink tap water	4%
Already knew info	4%
Good for water conservation	3%
Generally positive	3%
Safe/clean/drinkable water	3%

I don't trust the processes for decontamination and making this type of water drinkable.

**Only comments that were made by 3% or more of the respondents are shown in the table.*

Majority believes DPR can help address the Arizona water situation

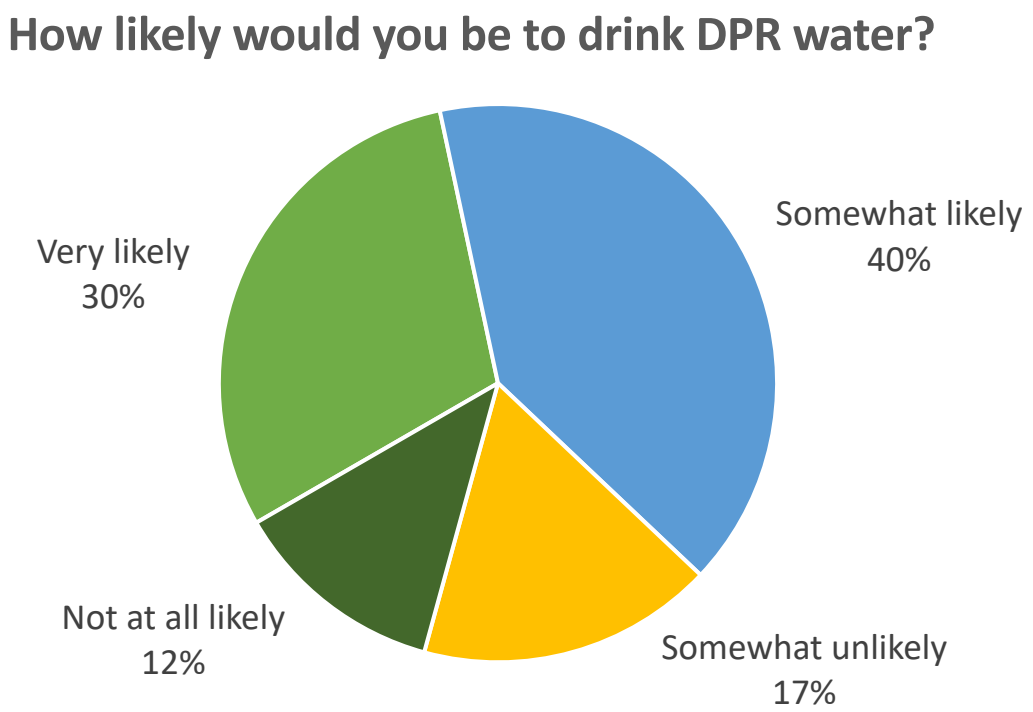
The majority of respondents (92%) believe that DPR water can either help a great deal or help somewhat with the possible impending water supply crisis in Arizona.



N=1,314

Majority of respondents would drink DPR water

Thirty percent of the respondents said they would be very likely to drink DPR water and another 40% said they would be somewhat likely to drink it. Slightly less than a third of respondents said they would be unlikely to try DPR water if it were offered to them.



N=1,314

UNAIDED: Reasons for *being likely* to drink DPR water

Over a third of the people who would drink DPR water said they trust that the processes mentioned in the video would make the water safe to drink. Although others would try it, they still had reservations about the safety of DPR water.

UNAIDED: Why are you likely to drink DPR water? (n=925)*	
Safe/clean/drinkable	34%
Skeptical about safety of water	14%
Generally positive towards	11%
Need to taste it	8%
Have reverse osmosis/filter/Brita	7%
Needs more information	6%
Sustainable source of water	5%
Already drinks tap water	4%
Only choice/option available	3%
Prefer bottled water	2%
Good for the environment	2%
Gross/yuck factor	2%
Won't drink tap water	2%

Because it goes through UV sanitation, reverse osmosis and uses advanced technology to ensure it is safe.

**Only comments that were made by 2% or more of the respondents are shown in the table.*

UNAIDED: Reasons for *being unlikely* to drink DPR water

Safety was mentioned as the biggest reason people would not want to drink DPR water. They were not convinced that the processes would be adequate to make the water safe to drink or that there could be long-term health implications. One in five respondents said they could not get over the yuck factor.

UNAIDED: Why are you unlikely to drink DPR water? (n=389)*	
Skeptical about safety of water	36%
Gross/yuck factor	19%
Prefer bottled water	10%
Have reverse osmosis/filter/Brita	7%
Unacceptable taste	7%
Won't drink tap water	5%
Needs more information	5%
Wants to drink current water source	5%
Need to taste it	3%
Only choice/option available	2%
Generally negative towards	2%
Would use for cooking / other purposes	2%

**Only comments that were made by 2% or more of the respondents are shown in the table.*

There is not enough research to verify there would not be any health issues.

DPR Adoption
Barriers & Influencers

BrandOutlook
Brand Strategy + Market Research

HMA PUBLIC RELATIONS

Section Summary – DPR Adoption Barriers & Influencers

- Structure/practical barriers to adoption of DPR
  - Cost to the respondent in the form of higher water bills or taxes was ranked as the #1 barrier. Respondents want to know how it will affect them personally.
- Personal barriers to adoption of DPR
  - The personal barriers to the adoption of DPR water were skepticism about its safety, the yuck factor and unfamiliarity with the DPR process.
- Influencers to support adoption of DPR
  - Influential statements about the safety of DPR water stressed high levels of testing and comparisons to both bottled water and water currently in the home. Statements most likely to assist in the water supply issues in Arizona centered around:
    - Drought-proof, constant source of water
    - Local control over water supply
    - Ability to significantly offset shortages

Barriers to DPR adoption

Respondents were asked to rank the top barriers to DPR adoption in their communities. Cost to the respondent in the form of higher water bills or taxes was ranked #1 by 57% of the respondents.

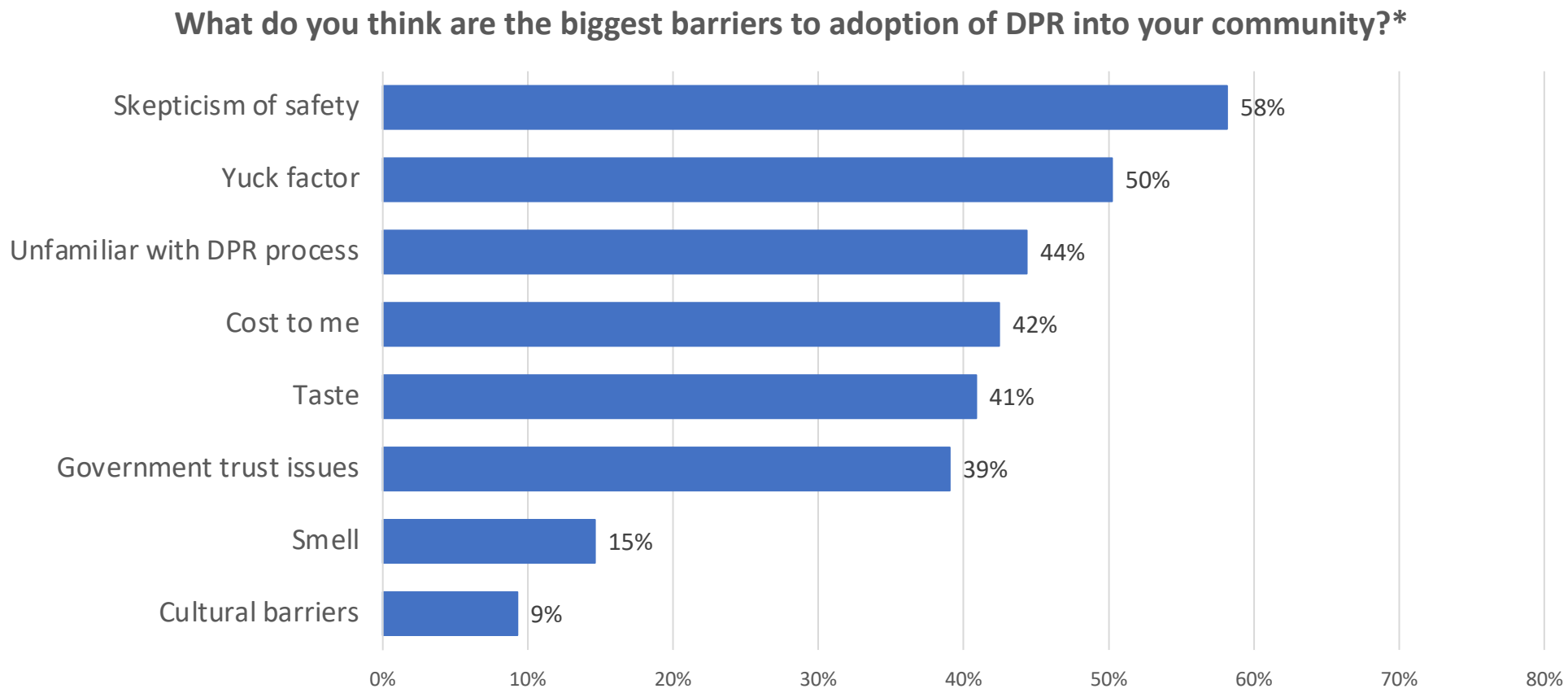
What do you think are the biggest barriers to adoption of DPR into your community?*

Barriers to DPR Adoption	Barrier #1	Barrier #2	Barrier #3	Total Mentions
Skepticism about safety	28%	40%	32%	764
Yuck factor	29%	29%	43%	660
Unfamiliar with DPR process	39%	37%	25%	583
Cost to me	57%	16%	28%	558
Taste	15%	46%	39%	537
Government trust issues	38%	33%	30%	513
Smell	15%	31%	55%	192
Cultural barriers	48%	34%	18%	122

**Respondents were asked to choose the top three barriers in order. | N=1,314*

Skepticism biggest barrier by total number of mentions

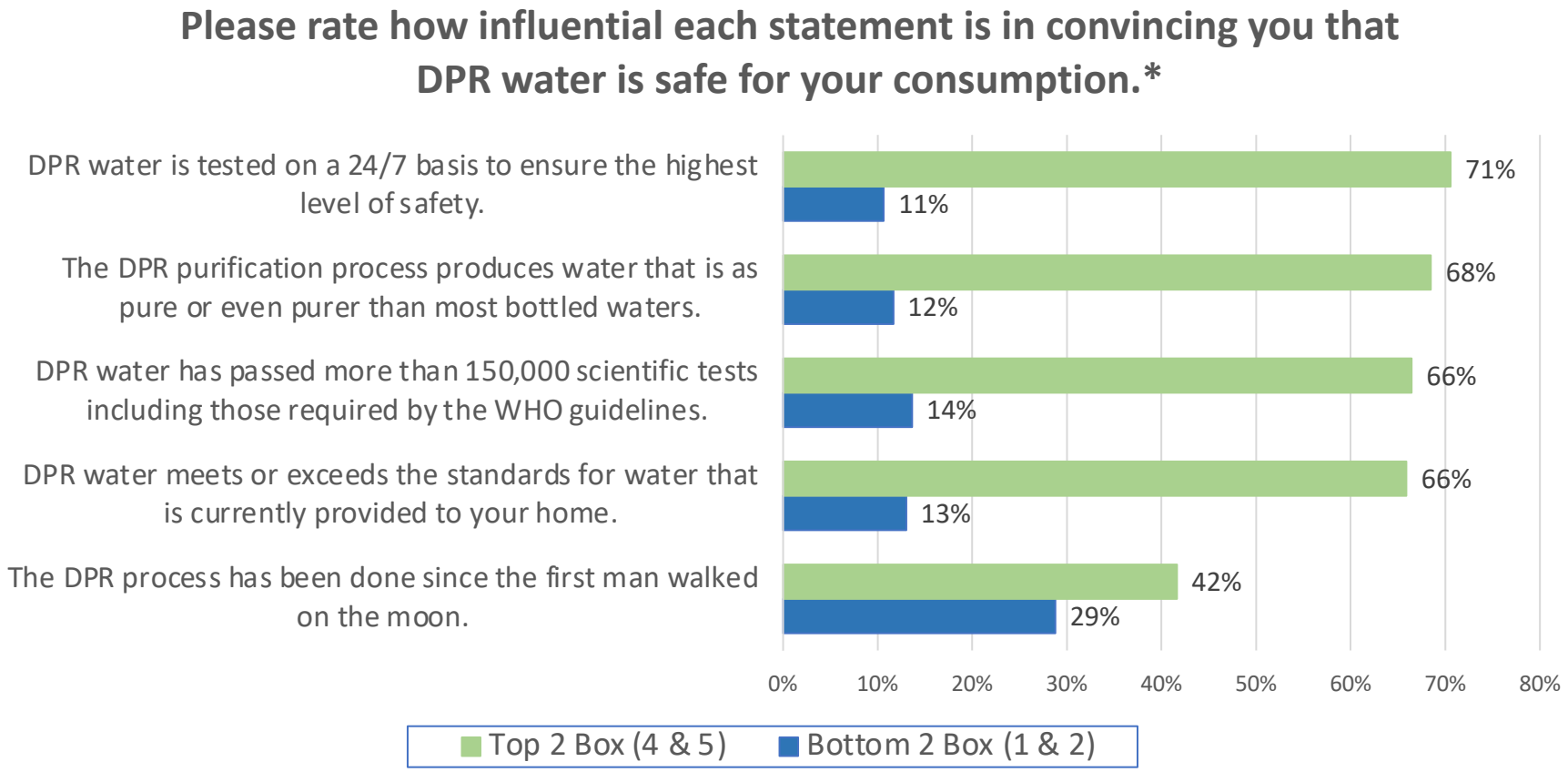
However, the barrier mentioned *by the most people overall* was skepticism about the safety of DPR water, followed by the yuck factor.



**Respondents were allowed to select multiple responses; therefore, the total exceeds 100%. | N=1,314*

Influential statements regarding safety of DPR water

All the statements below had approximately the same level of influence on the respondents regarding how safe they made them feel about DPR water. The only exception is the statement about the legacy of DPR water dating back to the first moon landing.

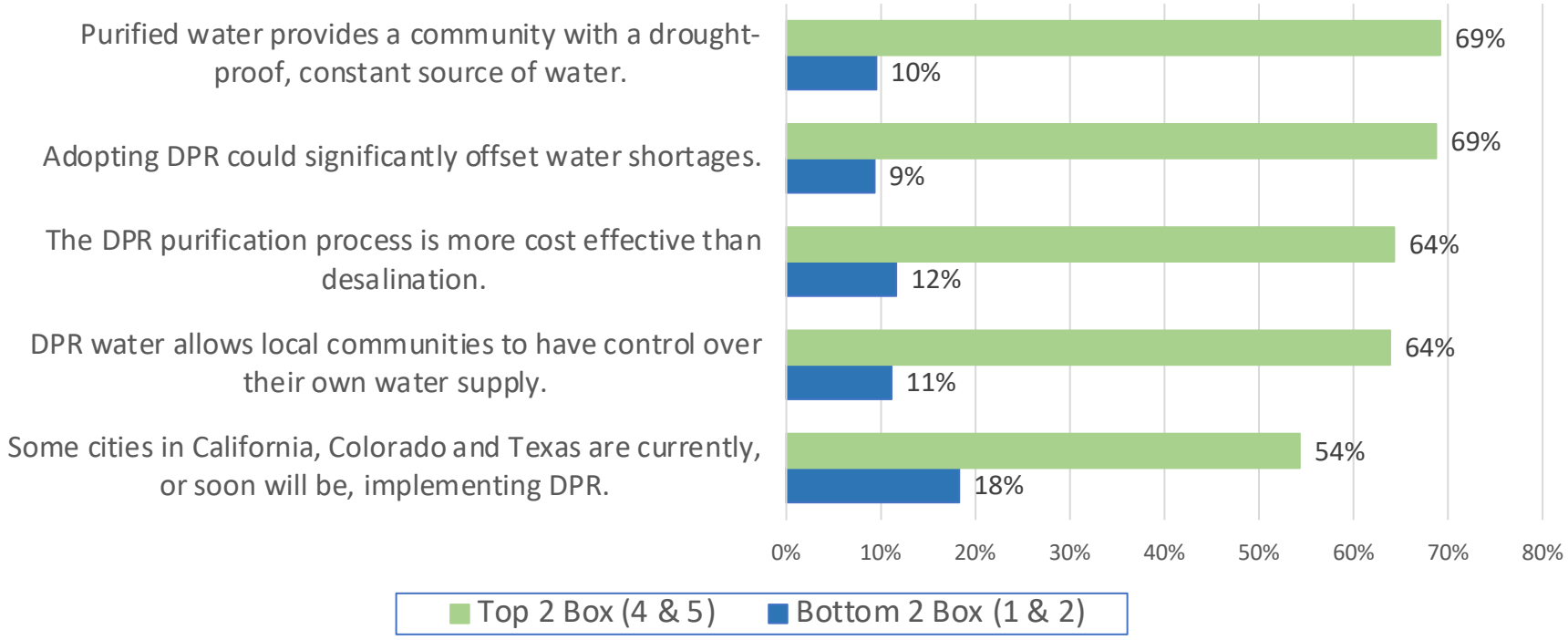


**Respondents rated each statement on a scale of 1-5, where 1 was not at all influential and 5 was very influential. | N=1,314*

Influential statements on DPR water addressing AZ's water issues

The most influential statements convincing respondents that DPR can help water shortages in Arizona were that it is a drought-proof source of water and can offset water shortages. Conversely, survey respondents were less influenced by what cities in other states may have done with DPR.

Please rate how influential each statement is in convincing you that DPR water will address Arizona's water supply issues.*

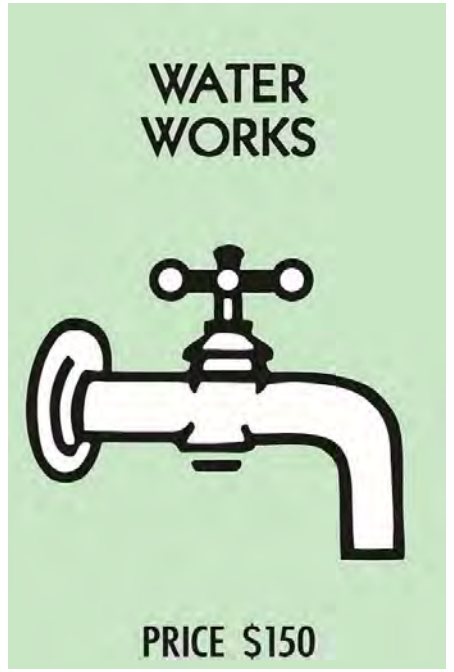


**Respondents rated each statement on a scale of 1-5, where 1 was not at all influential and 5 was very influential. | N=1,314*

Outreach Strategies

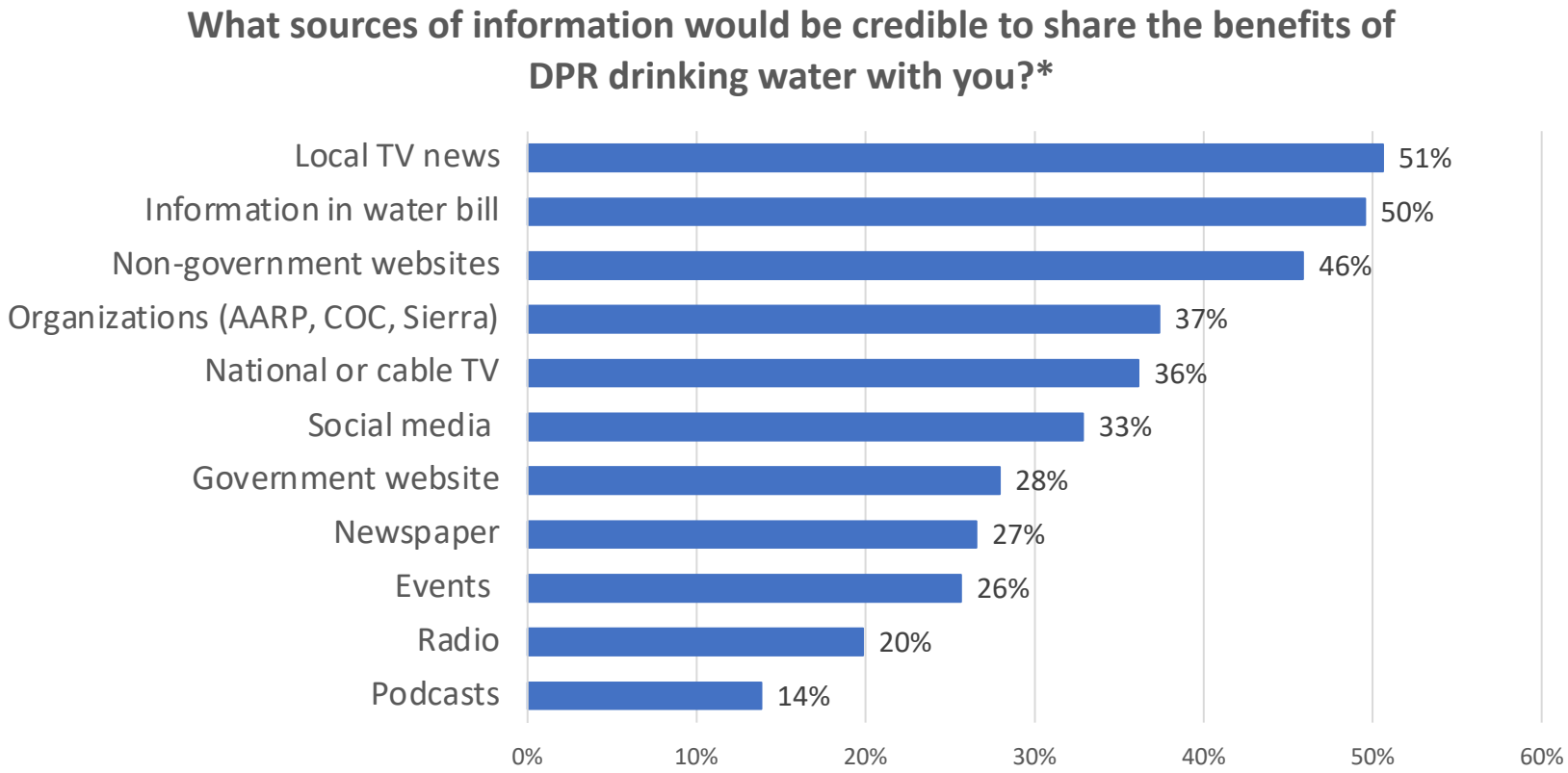
Section Summary – Outreach Strategies

- Credible sources of information about DPR:
  - Local news, utility bill inserts and non-government websites
  - Other credible sources would be organizations like Sierra Club or AARP, cable news or social media
- Most trustworthy influencers or spokespeople to discuss DPR:
  - Scientists
  - Water department officials
  - Academic leaders, local government officials and educators were also mentioned
- Naming DPR Water
  - Best name for DPR water is Purified Water or Recycled Drinking Water
  - No one name came out as the clear winner



Local news & utility company would be credible sources for DPR info

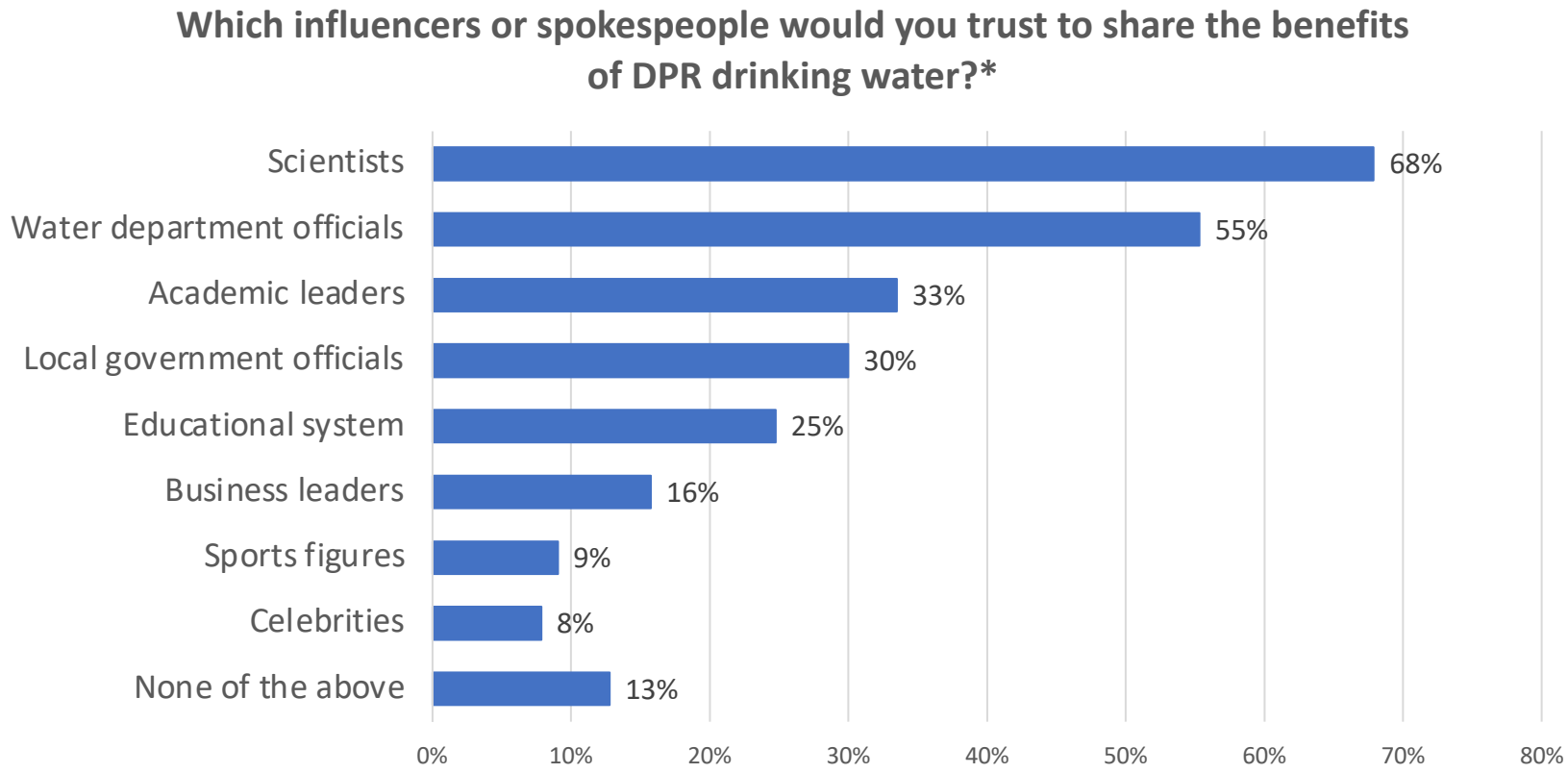
Nearly six in ten respondents surveyed said they get information about Arizona water issues from their local news team. The internet was mentioned second by 40% of the respondents.



**Respondents were allowed to select multiple responses; therefore, the total exceeds 100%. | N=1,314*

Top influencers for DPR would be scientists and water officials

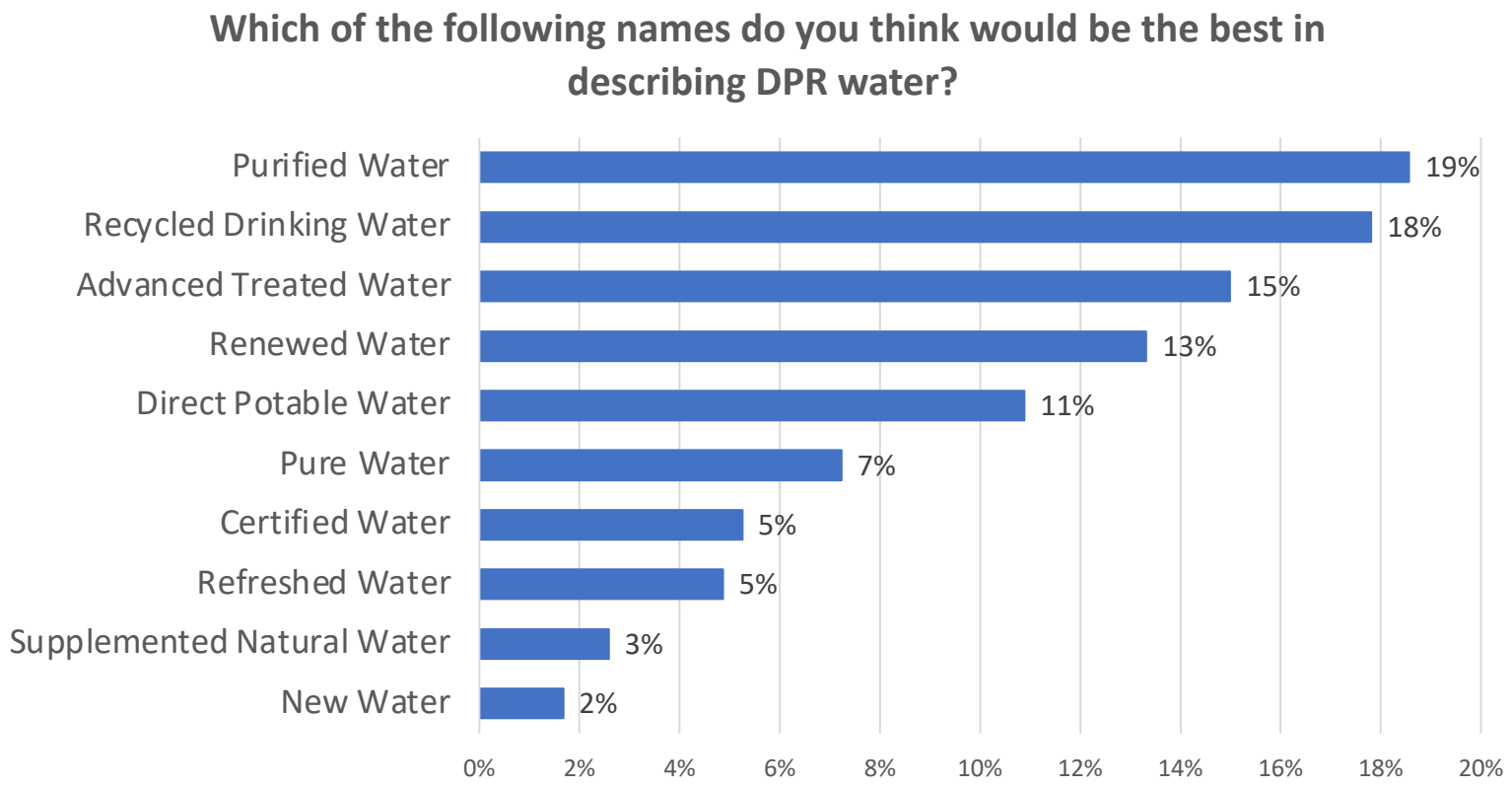
Nearly seven in ten respondents surveyed said they believe scientists would be the best spokespeople to present DPR information. Water department officials were mentioned second most often as credible influencers.



**Respondents were allowed to select multiple responses; therefore, the total exceeds 100%. | N=1,314*

Best name for DPR water is Purified Water or Recycled Drinking Water

No one name came out as the clear winner among the survey respondents.



N=1,314

Analysis by Sub-Populations

Differences between likely and unlikely DPR water drinkers

Respondents who were likely to say they would drink DPR water were statistically significantly more likely to be male, own their home and drink either unfiltered or filtered tap water.

Conversely, those who did not want to drink DPR water tended to be female, renters and bottled water drinkers.

Description	Likely to drink DPR water (N=925)	Unlikely to drink DPR water (N=389)
Gender		
Male	54%*	42%
Female	45%	58%*
Housing Situation		
Own my home	70%*	61%
Rent	30%	39%*
Voting Plans		
Planning to vote in 2024	87%	84%
Not planning to vote in 2024	4%	9%*
Current Consumption (mean %)		
Unfiltered tap water	20%*	7%
Bottled Water	36%	54%*
Filtered tap water	44%*	39%

** Statistically significantly different at a 95% confidence interval.*

Likely DPR water drinkers' welcome info from a variety of credible sources

Respondents who would drink DPR water were more likely to name a wide variety of credible sources and spokespeople for DPR water information compared to those who do not prefer to drink DPR water.

Preferences	Likely to drink DPR water (N=925)	Unlikely to drink DPR water (N=389)
Credible Sources of DRP Information		
Local news	56%*	37%
Water bill insert	55%*	38%
Non-govt. websites (businesses, univ.)	46%	47%
Organizations (COC, AARP, Sierra Club)	40%*	31%
National/cable TV	39%*	30%
Social media	35%*	28%
Government websites	30%*	22%
Newspaper	30%*	19%
Events	28%*	19%
Credible Spokespeople for DRP Information		
Scientists	73%*	57%
Water department officials	63%*	37%
Academic leaders	36%*	27%
Local government officials	35%*	18%
Educational system	29%*	15%
Business leaders	18%*	10%

** Statistically significantly different at a 95% confidence interval.*

Likelihood of drinking DPR water drives name preferences

Likely DPR water drinkers preferred names that conveyed the cleanliness of the water after processing, like Purified, Pure, Certified and New Water. Conversely, those who would be unlikely to drink DPR water were statistically significantly more likely to prefer more clinical names like Recycled and Renewed Water.

Preferences	Likely to drink DPR water (N=925)	Unlikely to drink DPR water (N=389)
DPR Water Names		
Purified Water	20%*	14%
Recycled Drinking Water	16%	21%*
Advanced Treated Water	15%	15%
Renewed Water	12%	17%*
Direct Potable Water	11%	10%
Pure Water	9%*	4%
Certified Water	6%*	3%
Refreshed Water	5%	5%
New Water	2%*	1%

** Statistically significantly different at a 95% confidence interval.*

Differences between Hispanic and Non-Hispanic respondents

Hispanic respondents were statistically significantly more likely to be renters.

They were also more likely to believe the biggest challenges facing Arizona were affordable housing and quality of education. Conversely, non-Hispanic respondents were more concerned about decreasing water supply and immigration.

Description	Hispanic (N=234)	Non-Hispanic (N=1,080)
Housing Situation		
Own my home	44%	73%*
Rent	56%*	27%*
Biggest Challenges Facing AZ		
Affordable housing	73%*	48%
Quality of education	43%*	34%
Decreasing water supply	37%	57%*
Immigration	35%	51%*
Political divide	25%	31%
Over development	14%	20%

** Statistically significantly different at a 95% confidence interval.*

Hispanics more likely to drink bottled water than Non-Hispanics

Hispanic respondents avoided unfiltered tap water due to safety and health concerns.

No differences existed between Hispanics and Non-Hispanics regarding their likelihood to drink DPR water.

Preferences	Hispanic (N=234)	Non-Hispanic (N=1,080)
Current Consumption (mean%)		
Unfiltered tap water	13%	17%
Bottled Water	52%*	39%
Filtered tap water	35%	44%*
Reasons for Aversion to Tap Water		
Safety / health concerns	76%*	62%
Taste	70%	71%
Smell	24%	23%
Convenience	9%	9%
Likelihood to Drink DPR Water		
Likely	74%	70%
Unlikely	26%	30%

** Statistically significantly different at a 95% confidence interval.*

Best ways to reach Hispanics are through social media, cable TV & radio

Non-Hispanics were more likely than Hispanics to name non-government websites and organizations as credible sources of information about DPR water.

Hispanic respondents were more likely than non-Hispanics to attribute credibility to the educational system, sports figures and celebrities.

Preferences	Hispanic (N=234)	Non-Hispanic (N=1,080)
Credible Sources of DRP Information		
Local news	47%	51%
Water bill insert	46%	50%
Social media	43%*	31%
Non-govt. websites (businesses, univ.)	37%	48%*
Government websites	35%*	26%
National/cable TV	35%	36%
Newspaper	29%	26%
Organizations (COC, AARP, Sierra Club)	28%	39%*
Radio	27%*	18%
Credible Spokespeople for DRP Information		
Scientists	68%	68%
Water department officials	60%	54%
Educational system	34%*	23%
Local government officials	34%	29%
Sports figures	16%*	8%
Celebrities	13%*	7%

** Statistically significantly different at a 95% confidence interval.*

Differences in Age Groups

The youngest respondents (under 40) were statistically significantly more likely to be renters.

Affordable housing was named as the biggest concern for the younger respondents. Those respondent under 40 were also concerned about the quality of education in Arizona. Conversely, respondents 40 and older were statistically significantly more likely to mention the decreasing water supply, immigration and political divide.

Description	Under 40 (N=420)	40-59 (N=382)	60+ (N=512)
Housing Situation			
Own my home	46%	66%*	86%*
Rent	54%*	34%	14%
Biggest Challenges Facing AZ			
Affordable housing	73%*	56%*	33%
Quality of education	45%*	33%	30%
Decreasing water supply	38%	53%*	67%*
Immigration	31%	50%*	62%*
Political divide	24%	31%*	34%*
Over development	18%	20%	18%

** Statistically significantly different at a 95% confidence interval.*

Younger respondents drink bottled water

The older age group (60+) was more likely to drink tap water (either filtered or unfiltered) compared to the younger age group. The youngest age group cited safety/health concerns and convenience as reasons for not drinking unfiltered tap water.

The oldest and youngest age groups were the most likely to say they would be likely to drink DPR water.

Preferences	Under 40 (N=420)	40-59 (N=382)	60+ (N=512)
Current Consumption (mean%)			
Unfiltered tap water	14%	14%	19%*
Bottled Water	48%*	46%*	33%
Filtered tap water	38%	40%	49%*
Reasons for Aversion to Tap Water			
Safety / health concerns	73%*	63%	57%
Taste	70%	74%	70%
Smell	25%	24%	21%
Convenience	12%*	6%	8%
Likelihood to Drink DPR Water			
Likely	72%*	64%	74%*
Unlikely	28%	36%*	26%

** Statistically significantly different at a 95% confidence interval.*

Best way to reach under 40 age group is through social media & podcasts

Those respondents under 40 were more likely than those over 40 to name the educational system, local government officials, celebrities and sports figures as credible sources for DPR water information.

The 60+ respondents put more of their trust in scientists.

Preferences*	Under 40 (N=420)	40-59 (N=382)	60+ (N=512)
Credible Sources of DRP Information			
Local news	37%	52%*	61%*
Water bill insert	44%	47%	56%*
Social media	51%*	33%	18%
Non-govt. websites (bus., univ.)	38%	45%	53%*
Government websites	34%*	26%	25%
National/cable TV	29%	32%	45%*
Newspaper	25%	22%	31%*
Organizations (COC, AARP, Sierra)	32%	30%	47%*
Podcasts	20%*	15%*	8%
Credible Spokespeople for DRP Information			
Scientists	64%	65%	73%*
Water department officials	58%	55%	54%
Educational system	32%*	24%	20%
Local government officials	35%*	27%	28%
Sports figures	15%*	9%*	4%
Celebrities	13%*	9%*	3%

** Statistically significantly different at a 95% confidence interval.*

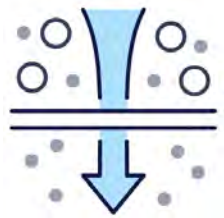
Recommendations

Recommendations

- Create outreach programs to explain how DPR can help with AZ water supply issues.
  - Highlight statements that were influential in showing how DPR helps water supply issues:
    - Drought-proof, constant source of water
    - Local control over water supply
    - Offsetting water shortages

Recommendations

- Institute educational programs starting at an early stage to explain DPR processes to alleviate fears about safety and health.
  - Stress the statements about DPR safety that were most influential:
    - Testing 24/7
    - 150K tests and WHO guidelines
    - Comparison to bottled water and current tap water
  - Reference studies that prove there are no long-term adverse health effects from drinking DPR water.



Recommendations

- Create outreach programs to all segments of the population:
  - Attract local news coverage through PR campaigns.
  - Coordinate with local community utility leadership to ensure consistent messaging.
  - Host live taste testing events to overcome the barriers of taste, smell and the yuck factor.

- Enlist scientists and water department leaders to explain the process of DPR in plain speak.
  - Provide community outreach packages for the top influencers from local government, blogs, newspapers, websites and community organizations.

Recommendations – Potential Future Research Initiatives

- Additional Perceptions Research (Mid-2023 and Mid-2024)
  - A wider array of commercial, academic and governmental leaders
  - New respondent groups identified in the first round
  - Consumers

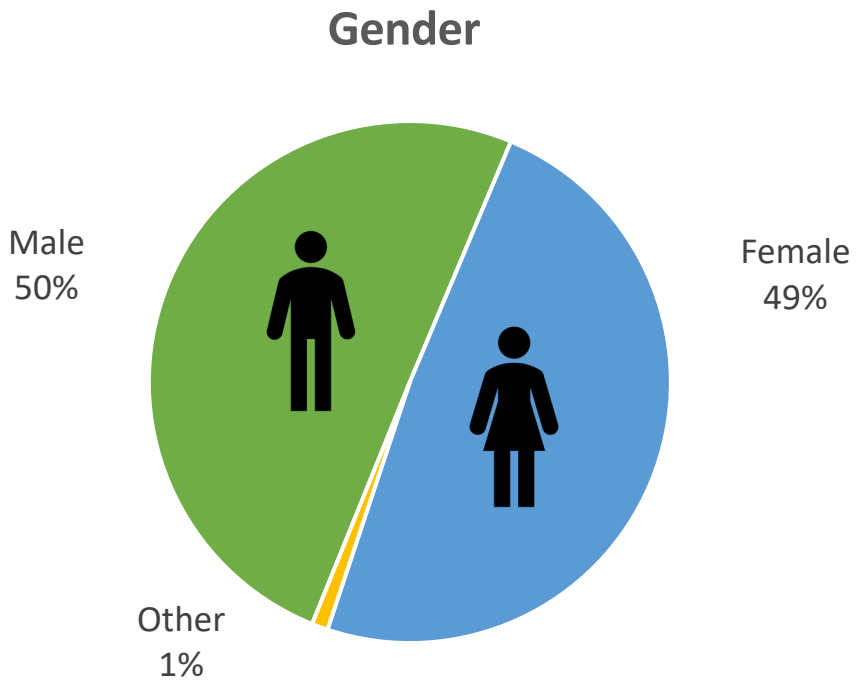
- Creative Testing (Q3 2023, Q2 2024)
  - Test materials that ADEQ and its creative teams/agencies will develop
  - Anticipate that materials will come in multiple waves and formats (e.g., print and digital)

- Awareness and perceptions tracking (Annually beginning in late 2023)
  - Annual tracking study, one with water stakeholders and one with consumers
  - First one will be used to develop a baseline understanding of perceptions against which all future trackers will be compared

- Measure the effectiveness of public forums (Ongoing beginning in Q3 2023)
  - Town hall meetings
  - Outreach events

Demographics

Gender



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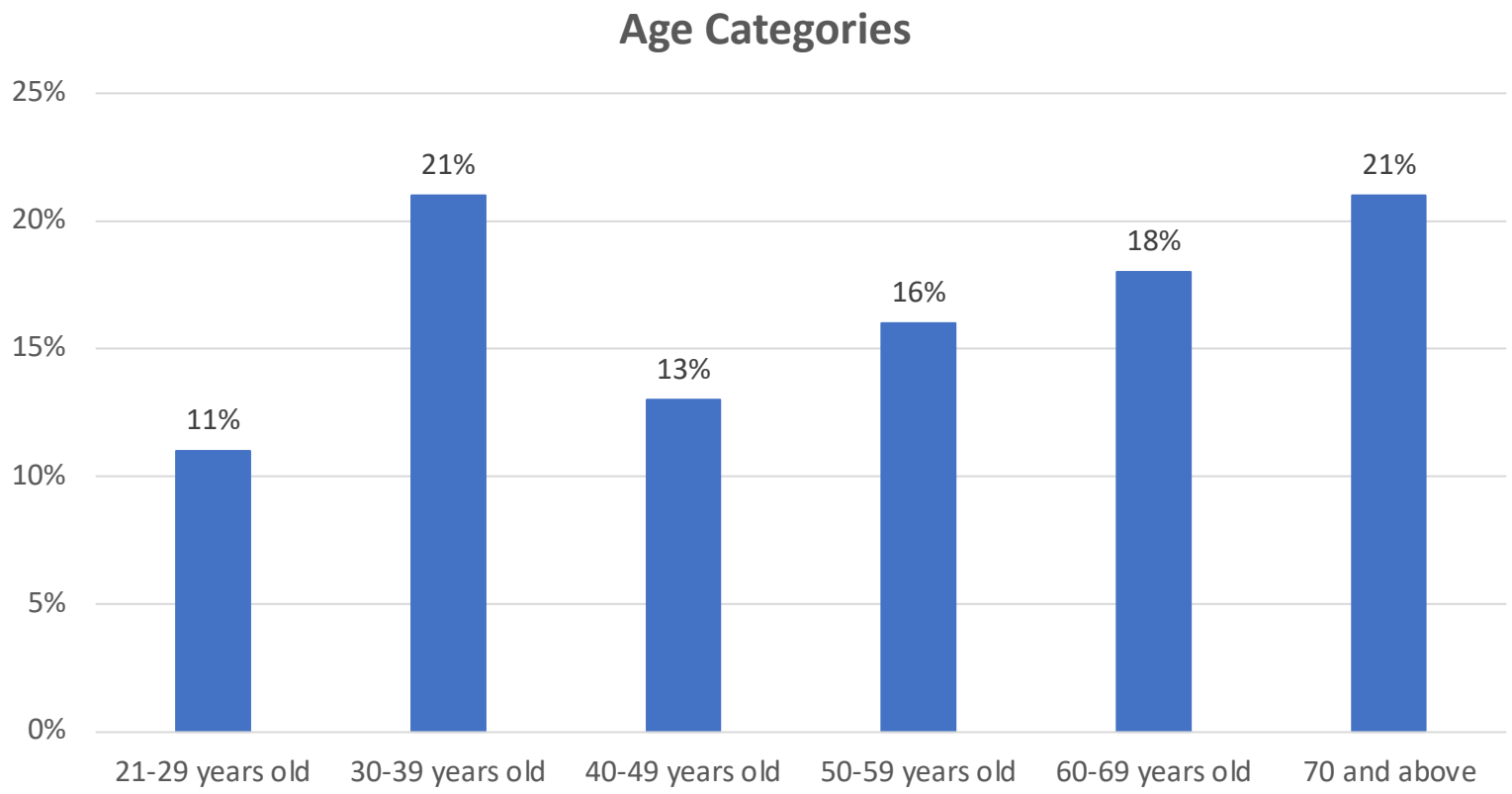
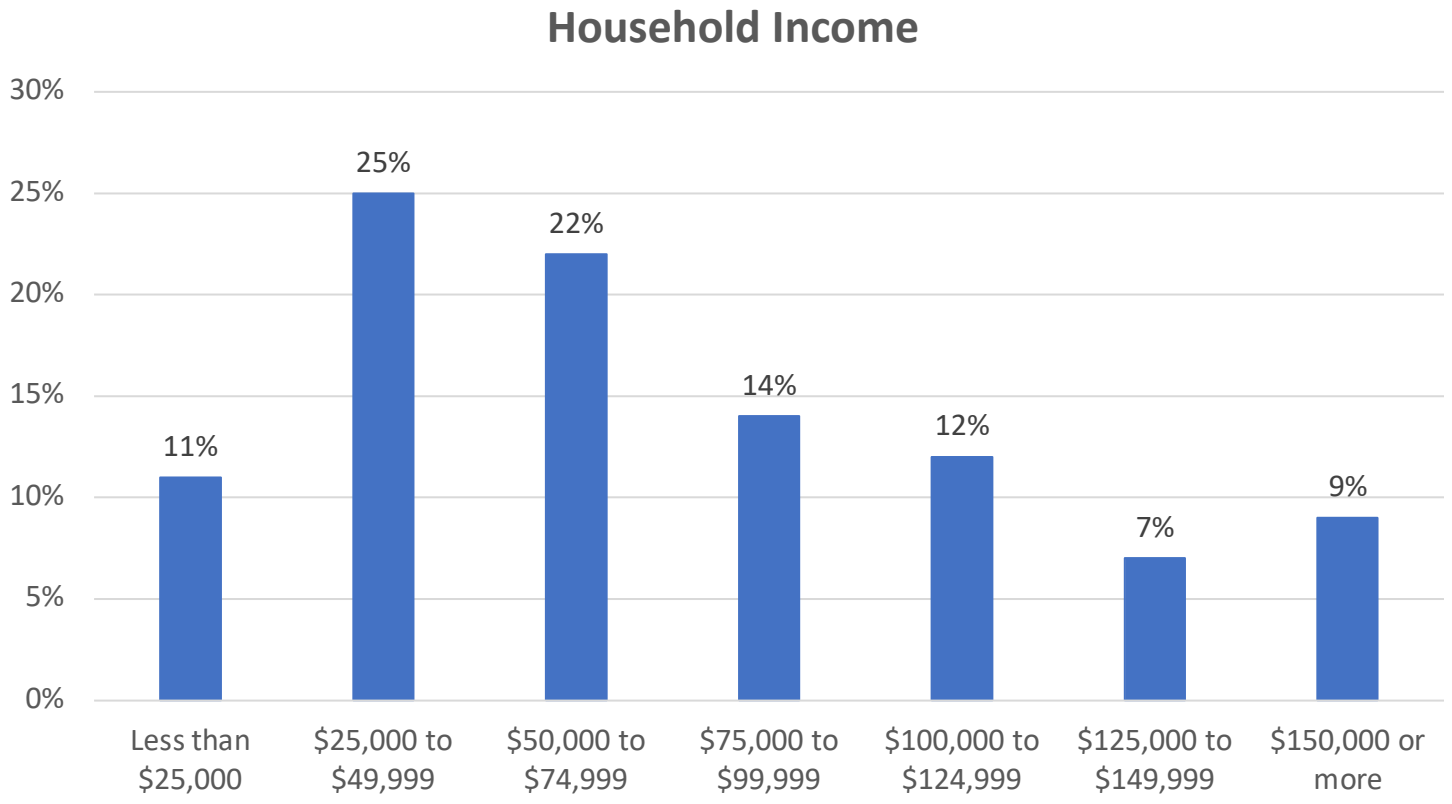
Age Categories



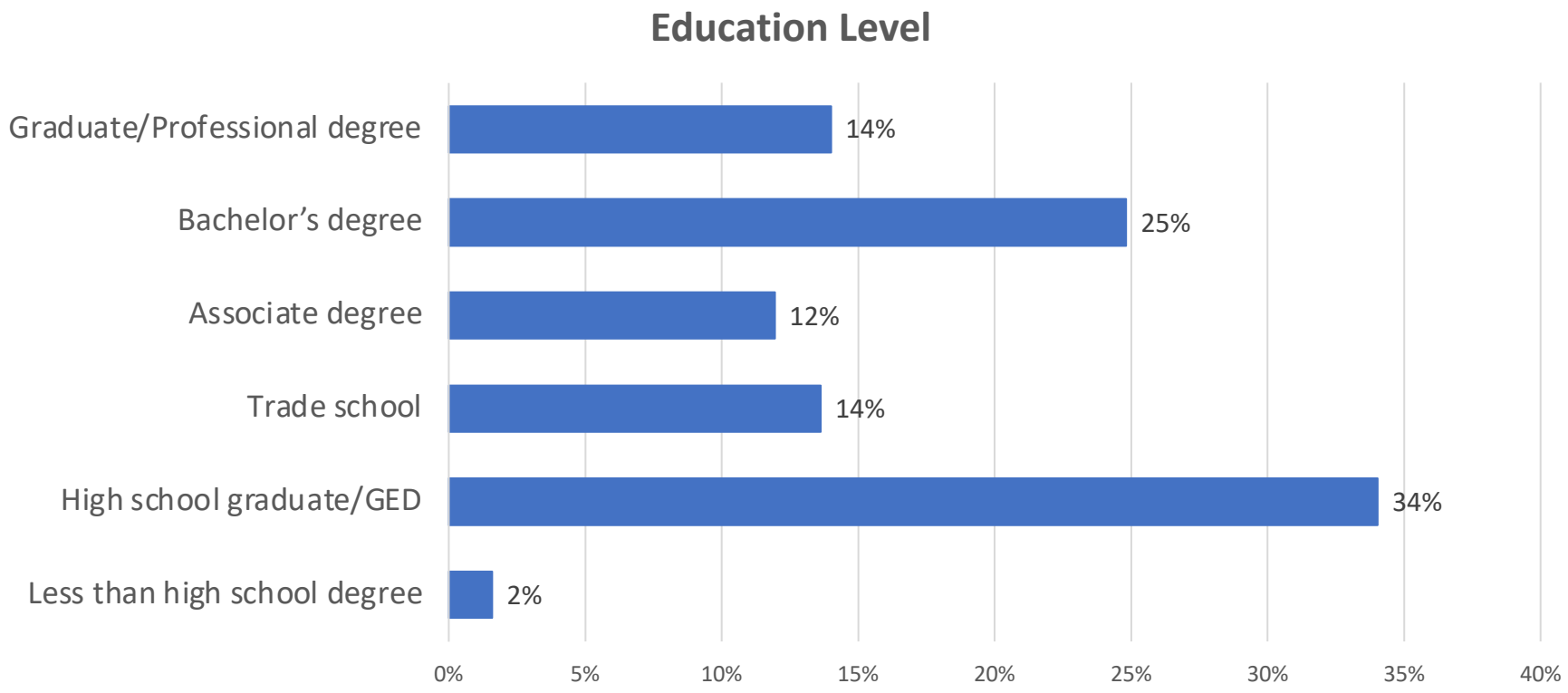
N=1,314

Household Income



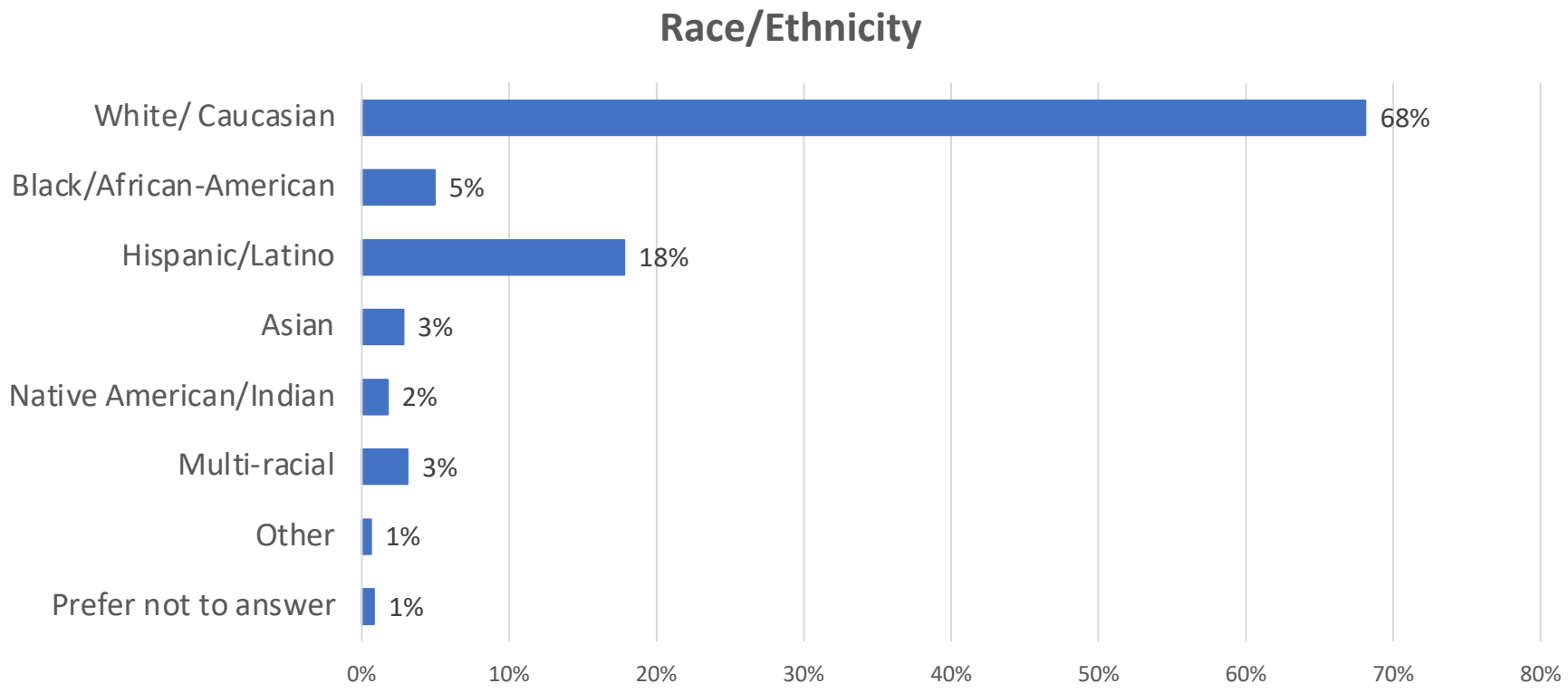
N=1,314

Education Level



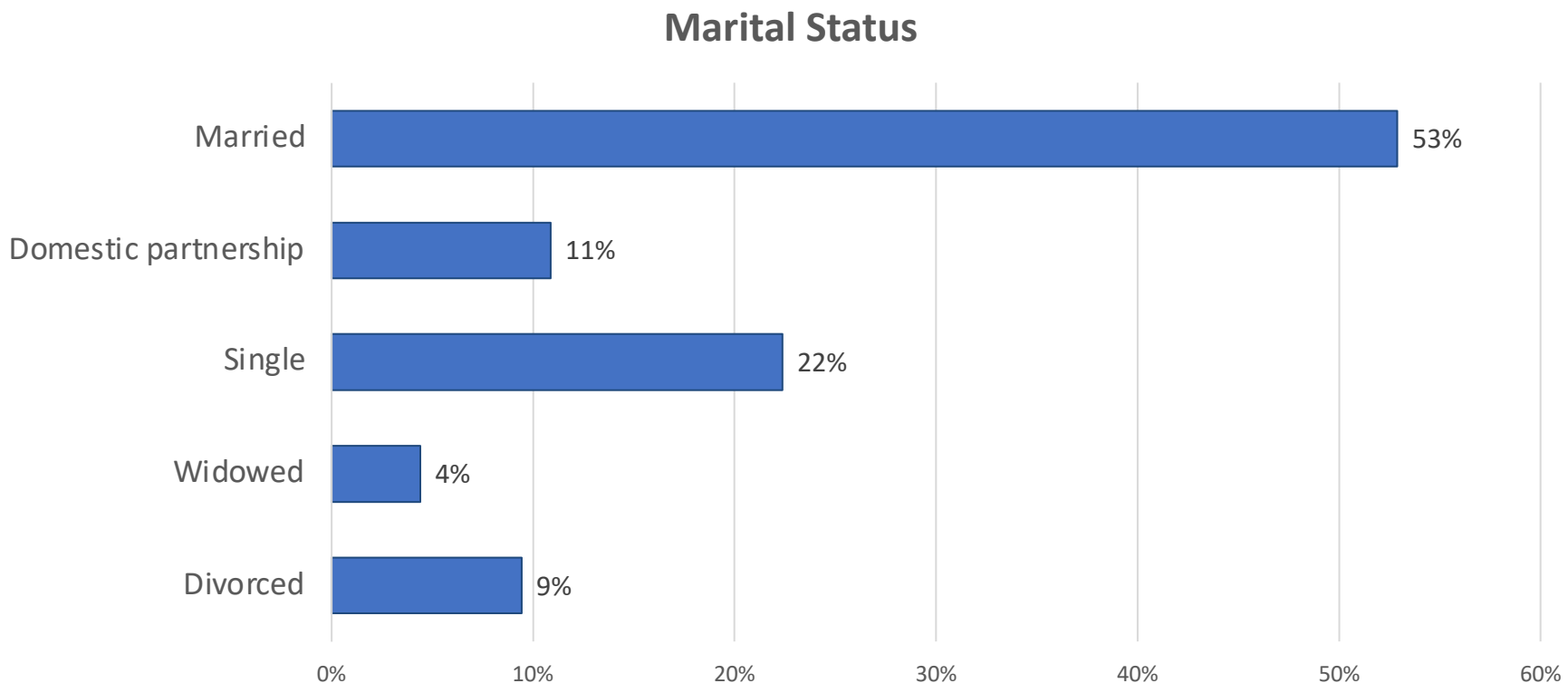
N=1,314

Race/Ethnicity



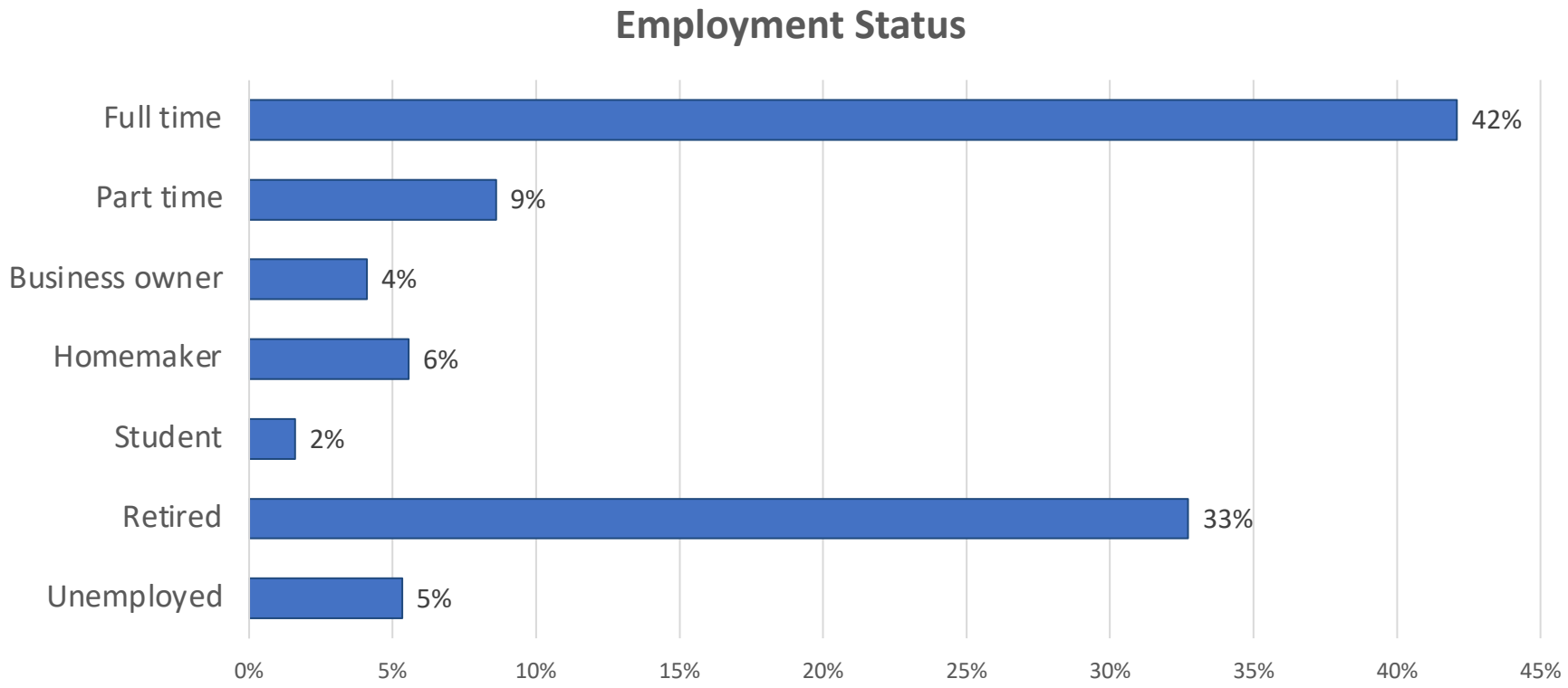
N=1,314

Marital Status



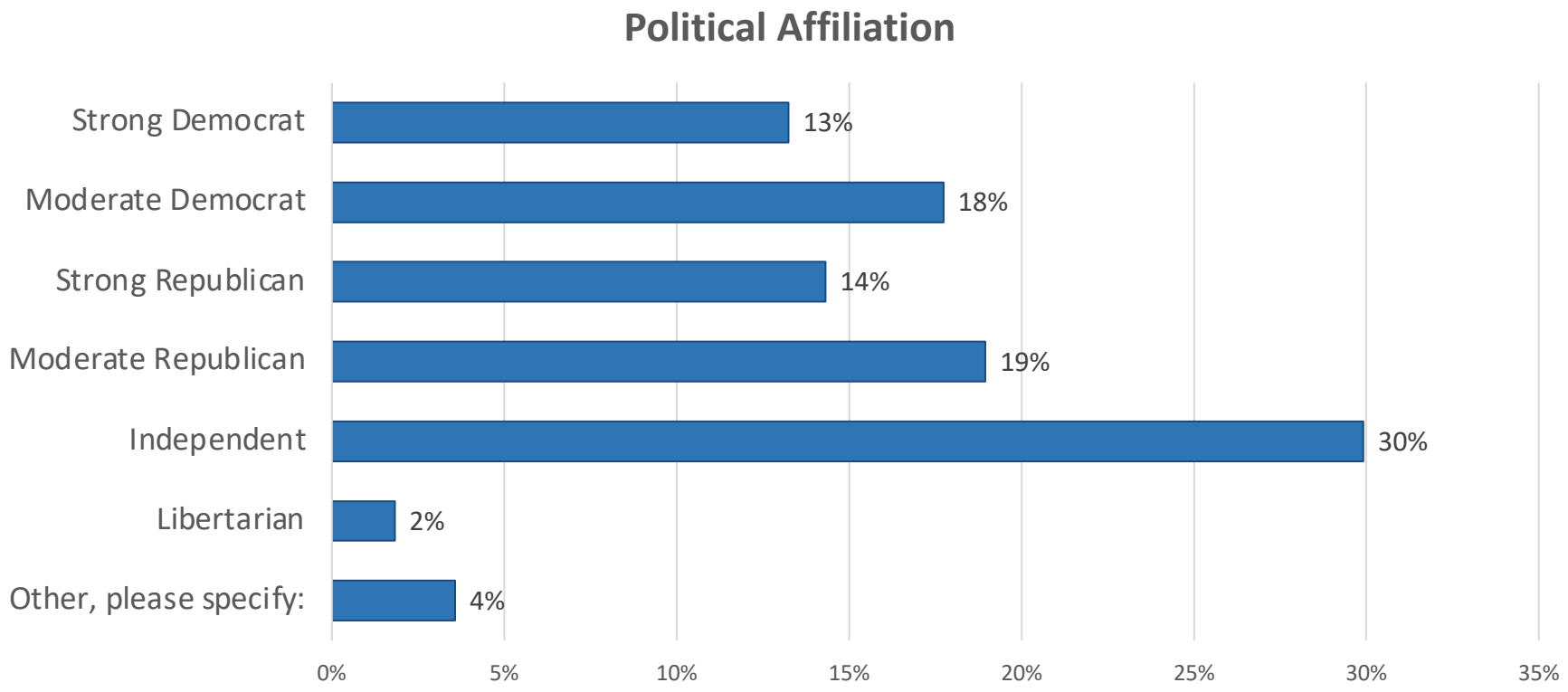
N=1,314

Employment Status



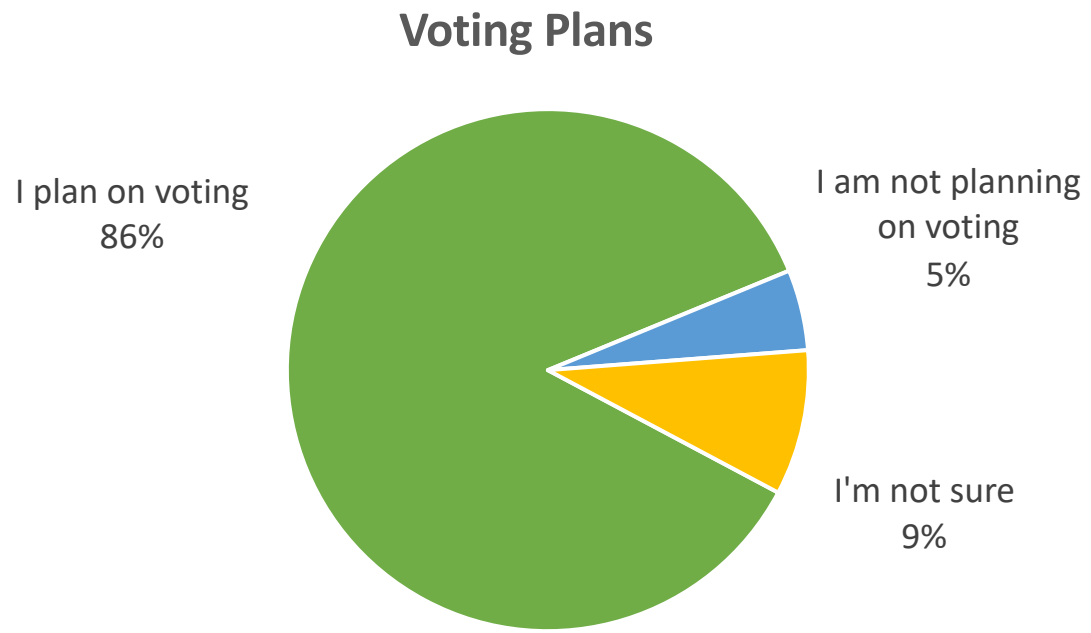
N=1,314

Political Affiliation



N=1,314

Voting Plans



N=1,314

Appendix

Study Documents

Survey

DPR Video

Thank you!

BrandOutlook
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HMA PUBLIC RELATIONS

ADEQ
Arizona Department
of Environmental Quality

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