

# EXECUTIVE SUMMARY

## Residents' Perceptions of Wastewater Reuse and the Little Rock Water Reclamation Authority

**PREPARED BY**

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# INTRODUCTION

Water scarcity, driven by climate change and human activity, has profound implications for environmental sustainability and public health. Climate models project that the Southern United States will see **increased drought frequency and intensity**, threatening water security, especially in Central Arkansas.<sup>1</sup>

Wastewater reuse emerged as a critical strategy for diversifying water resources, enhancing resiliency by using treated water as a replacement for freshwater. In arid western states facing drought conditions, like Arizona and Nevada, wastewater reuse has curbed freshwater demand for non-drinking purposes.<sup>2</sup>

**“amplifications in temperature change in the southern United States will have severe ramifications in environmental and social sectors”<sup>1</sup>**

**ARIZONA AND NEVADA RECYCLE**

**52% AND 85%**  
**OF THEIR WASTEWATER<sup>2</sup>**

**ARKANSAS  
RECYCLES**

**0%**

## Project Goal

Dedicated to **strengthening environmental stewardship** and accelerating water conservation efforts, the Little Rock Water Reclamation Authority (LRWRA) tasked itself with ensuring long-term sustainability through a non-potable wastewater reuse project. This research sought to understand public approval for proactively diversifying the city’s water sources in the face of future hardships posed by climate change. The **ultimate goal** of this research was to assess Little Rock residents’ perceptions of wastewater reuse and LRWRA. To do this we had two guiding research questions:

- 1) What are the knowledge, attitudes, and concerns about wastewater reuse among Little Rock residents?**
- 2) What is the general public’s understanding of the local wastewater utility?**



# LITERATURE REVIEW

## USAGE TYPE

Several studies found that acceptance of wastewater reuse depends heavily on the usage type and level of human contact, with people being less likely to accept reuse in close proximity.<sup>3,4</sup> For example, respondents showed a greater inclination towards outdoor uses, such as farming and irrigation, than they did toward indoor uses, such as laundry and cleaning.<sup>5,6,7</sup>

## “YUCK” FACTOR

The “yuck” factor describes feelings of disgust that are typically associated with the perceived health risks of wastewater reuse and has been found to significantly influence acceptance. Strong negative emotions stemming from fear of disease can cause rejection.<sup>8,9</sup>

## DEMOGRAPHIC-BASED ACCEPTANCE

Multiple studies found mixed results for all demographic characteristics except for education level, which was found to positively influence acceptance of wastewater reuse. People who have a higher education level are more likely to accept wastewater reuse.<sup>10,11,12</sup>

## KNOWLEDGE + TRUST

While several studies show that knowledge about the treatment process can encourage acceptance of wastewater reuse, this information is most influential when coming from a trusted public source. People are more likely to accept wastewater reuse projects that are endorsed by experts in the field, such as doctors, professors, and government officials.<sup>13,14</sup>

# METHODS



We utilized both survey and focus group data to provide LRWRA with a comprehensive understanding of public perceptions of wastewater reuse and the utility.

## SURVEYS

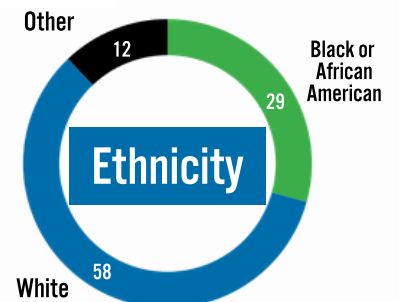
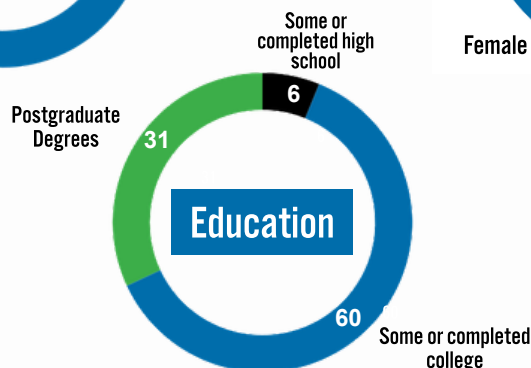
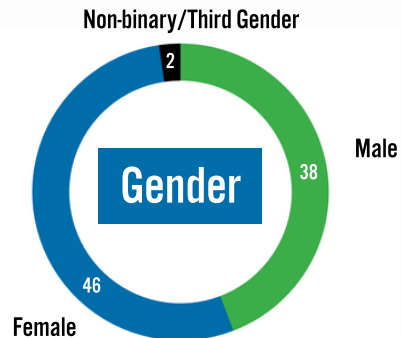
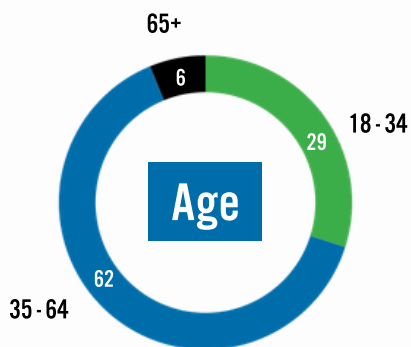
A public survey was conducted to gauge public knowledge, attitudes, and concerns about wastewater reuse, as well as knowledge and trust in LRWRA. A total of 103 eligible Little Rock adult residents completed the survey.

## FOCUS GROUPS

Three focus groups were held to gather in-depth information on public knowledge, attitudes, and concerns about wastewater reuse, as well as trust in LRWRA. Each focus group included 2–4 Little Rock residents, recruited via association leaders and community contacts.

## DEMOGRAPHICS

Our study included 103 survey respondents and nine focus group participants.





# RESULTS

The **majority** of respondents (61%) felt they had **little to no familiarity** with wastewater reuse. 39% reported that they had some to high familiarity (n=99).



Focus group participants displayed **higher than average** familiarity. On the other hand, survey respondents demonstrated less familiarity overall in written responses. A small number of respondents demonstrated a good understanding of wastewater reuse (n=5), but the largest group showed a moderate understanding of the concept (n=37), describing it in general terms like “utilizing sewer water that has been treated for some purpose” but they **lack details** regarding either the treatment processes or specific reuse applications. Some focus group respondents mentioned that their understanding of wastewater processes increased greatly after receiving a facility tour.

## SUPPORT OF WASTEWATER REUSE

A large **majority** of respondents (80%) reported that they are in support of the implementation of wastewater reuse in Little Rock (n=95). Focus group participants echoed this support, with many saying that reusing water for non-drinking purposes **just makes sense**, and some even thought it was already happening.

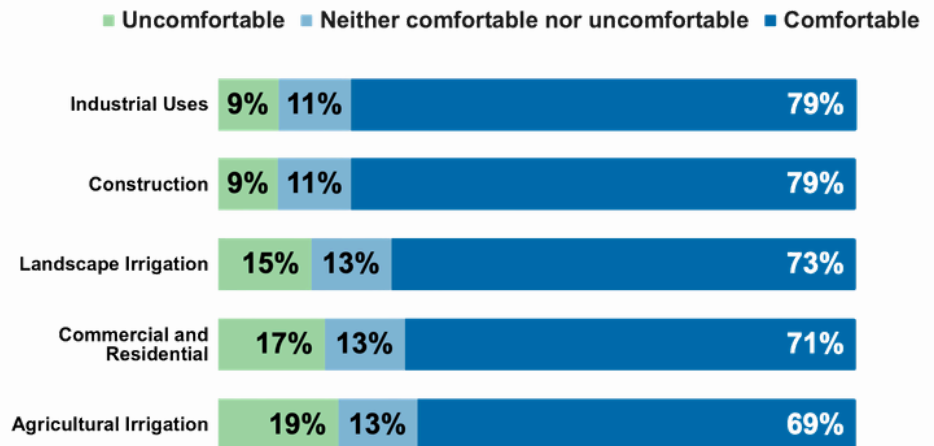
“I’m going to say they should go ahead and pursue [wastewater reuse], just be transparent about it so we know what they’re doing.”

**80%**  
OF SURVEY RESPONDENTS  
SUPPORT WASTEWATER REUSE

Many participants emphasized **trust in scientific evidence** and **expert judgment**, expressing that personal opinions were secondary to research findings. Others shared that they would be indifferent to future plans as long as **laws and health regulations are followed**.

# COMFORT ACROSS USE TYPES

Survey respondents reported a **high level of comfortability** when presented with a range of non-drinking applications (n=96). Focus group participants generally agreed with survey trends, especially for industrial and landscaping uses. One focus group participant shared, “Landscaping, industrial, I think that is fine. I would love to see those uses.” However, focus group participants were more cautious about residential and agricultural uses, specifically related to food crops.



## REUSE CONCERNS

**“The only real reservation that I have to water reuse would be agriculture, just knowing how much the water has been purified and contaminated before it's going on like plants and crops that we use that might not be cooked.”**

Findings highlighted several recurring concerns regarding wastewater reuse. Health and safety worries focused on **potential exposure** to pathogens or contaminants with participants citing perceived risks from system failures or public contact with treated water. Environmental concerns included **long-term impacts** such as chemical buildup

and potential soil contamination. Economic concerns centered on the **high costs** of implementing wastewater reuse systems and whether the infrastructure was necessary given Arkansas’s abundant water supply.

## PERCEPTIONS OF LRWRA

When asked how they would describe their perception of LRWRA, a **majority** of respondents (58%) reported having a positive perception of their local wastewater utility (n=92). While focus group participants expressed positive views of LRWRA, they also had limited interaction with or knowledge of the utility. A majority of respondents reported that **they trust LRWRA** to manage wastewater safely and responsibly (n=92), but participants expressed a **desire for more knowledge, clear communication, and transparency** about the utility and wastewater reuse before feeling confident in moving forward.

**67%**  
OF SURVEY  
RESPONDENTS TRUST  
LRWRA



# DISCUSSION

This research was designed to determine whether support for wastewater reuse exists in Little Rock and assess understandings of LRWRA.

While Little Rock may not be facing an immediate water shortage, respondents indicated that they thought it was a **logical step** in the right direction. Many commended the utility for its proactive efforts to conserve drinking water and drive sustainable change in Little Rock. While residents demonstrated mild discomfort with agricultural uses in

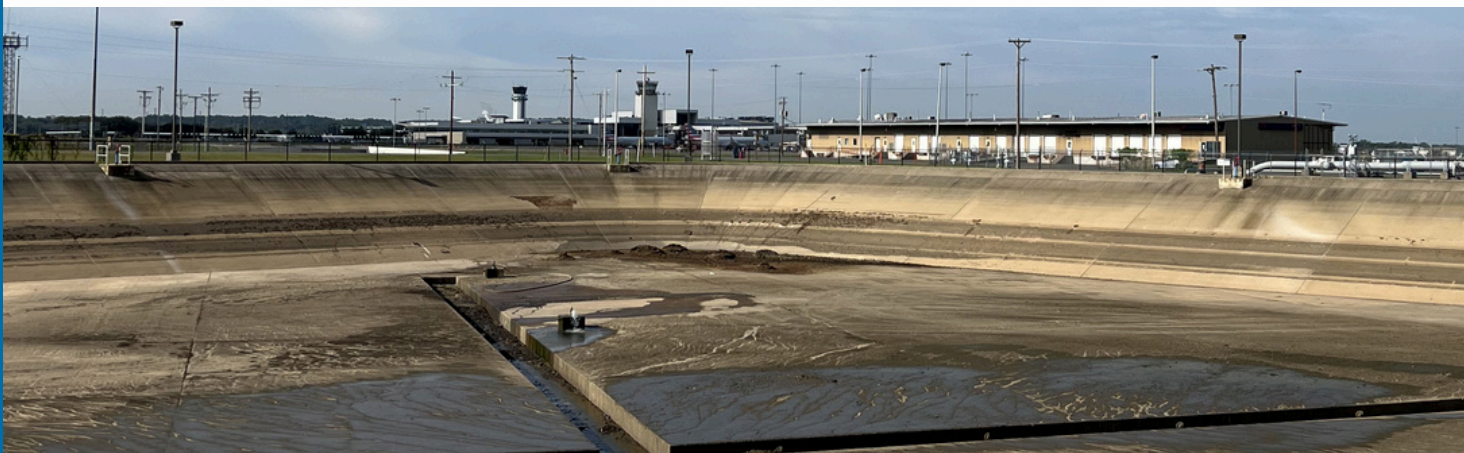
focus groups, a clear **majority supported all of the proposed usage types**. Comfort levels were highest for industrial and construction uses and lowest for agricultural irrigation, which reflected findings in the literature that acceptance dwindles as the perceived chances of contact with reuse increase.

Disgust and concerns about health and safety were also factors, but their effects on support appear negligible. Per the literature, this is most likely owed to all of the proposed uses being non-potable, creating psychological distance to prevent or at least mitigate the visceral rejection documented elsewhere in response to potable reuse proposals.<sup>14 15</sup>

Trust in LRWRA was strong, and participants indicated that they would defer to regulatory oversight and scientific experts on reuse safety. Still, residents stressed the importance of transparency and clear communication if LRWRA goes forward with a reuse project.

Understanding what residents know and how they feel about wastewater reuse and LRWRA makes it clear that the path forward is not about building support, but about sustaining it through a range of strategies designed to improve public perceptions and intensify LRWRA's outreach efforts to residents.

**After analysis, it is clear that the vast majority of respondents support a reuse project**





# RECOMMENDATIONS

## IMPROVING PUBLIC AWARENESS & ACCEPTANCE

1

**Host civic deliberations** where LRWRA representatives and residents can openly discuss wastewater reuse. These forums would address public concerns, improve understanding, and build trust through transparent communication and ongoing engagement.

2

**Offer in-person tours** of treatment facilities to educate the public on the wastewater treatment process. These tours would help address misconceptions, answer questions, and build confidence in the safety and effectiveness of wastewater reuse by providing a firsthand experience.

3

**Expand LRWRA's social media** content to include more educational posts, such as explainer videos and Q&A content. This would make information about wastewater reuse more accessible.

## COMMUNICATION CHANNELS WITH RESIDENTS

1

**Distribute informational mailers** to rate payers to provide clear, accessible information about wastewater reuse. This approach would broaden outreach, address common misconceptions, and ensure equitable access to education for residents who may not engage with digital platforms.

2

**Develop a virtual tour** of a wastewater treatment facility on LRWRA's website to provide an interactive and accessible way for residents to learn about the process. This would expand access to education, overcome participation barriers, and complement in-person tours.

3

**Collaborate with local news** outlets to produce a segment on wastewater reuse and LRWRA's role. This would educate a broad audience, enhance credibility, and increase public understanding and trust through trusted media coverage.

# CONCLUSION

**The vast majority of survey respondents indicated support for a reuse project, and findings from focus groups and survey responses corroborate its necessity.**

Our assessment of Little Rock residents' knowledge, attitudes, and concerns regarding non-potable wastewater reuse found that a broad base of support exists for a reuse project. Despite living in a water-rich state, residents **favor a proactive approach** to ensuring the security of the city's water supply. While there was clear support for all uses, comfort levels across surveys and focus groups were highest for construction and industrial uses. Minor trepidation existed regarding agricultural use due to health

and safety concerns, but our results indicated that they do not appear to affect the level of support for reuse. In order to maintain this level of public consensus, LRWRA should diligently adhere to respondent calls for **transparency** and **clear communication**. Investing in outreach such as civic deliberations, facility tours, and targeted communication campaigns through print, social media, and other digital platforms can proactively build awareness and help sustain the social license necessary to move forward with a reuse project.



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