




# siliconvalley

## ADVANCED WATER PURIFICATION CENTER

Presented to the Valley Water Youth Commission  
January 28, 2026

# The Water We Share Activity

<p>Group member names: _____</p> <p><b>The Water We Share</b></p>  <p><b>Warm Up: What do you know about purified water?</b></p> <p>Currently, I think/know _____</p> <p>_____</p> <p>_____</p> <p><b>The Water Situation</b></p> <p>Water is a finite resource. All the water on Earth has been around since the planet's formation around 4.6 billion years ago and is being recycled through its movement through the water cycle.</p> <p>Humans divert some water from natural sources into our human-constructed water cycle.</p> <p>Meeting our growing water needs through the natural process alone is becoming increasingly challenging, especially in the face of drought and climate change. An adequate supply of safe, reliable water is crucial to protecting our future.</p> <p>We have the potential to use purified water to supplement our drinking water supply.</p> <p>One critical benefit of purified water is it can be used to replenish the region's groundwater by blending purified water with existing groundwater.</p> <p>Purified water can also be used to increase water levels in our reservoirs and increase our local water supply.</p> <p>To boost local drinking water supplies, highly treated purified water could, in the future, be sent directly into the drinking water system.</p> 	<p><b>Your Task</b></p> <p>Use your group's poster to represent your solutions to how we can convince people to promote the use of purified water. Your group may write and/or draw to show your thinking. Use the space below to brainstorm and plan.</p> <p><i>Example: We have seen imported water sources impacted during drought periods. Purified water can support a more sustainable water supply for our county.</i></p> <p><b>Exit Ticket: What do you know about purified water?</b></p> <p>I used to think/know _____</p> <p>_____</p> <p>Now, I think/know _____</p> <p>_____</p> 
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# Warm Up



*Please begin with the Warm Up after you receive your paper.*

**QUESTION:** What do you currently think or know about purified water?

“Currently, I think/know.....”

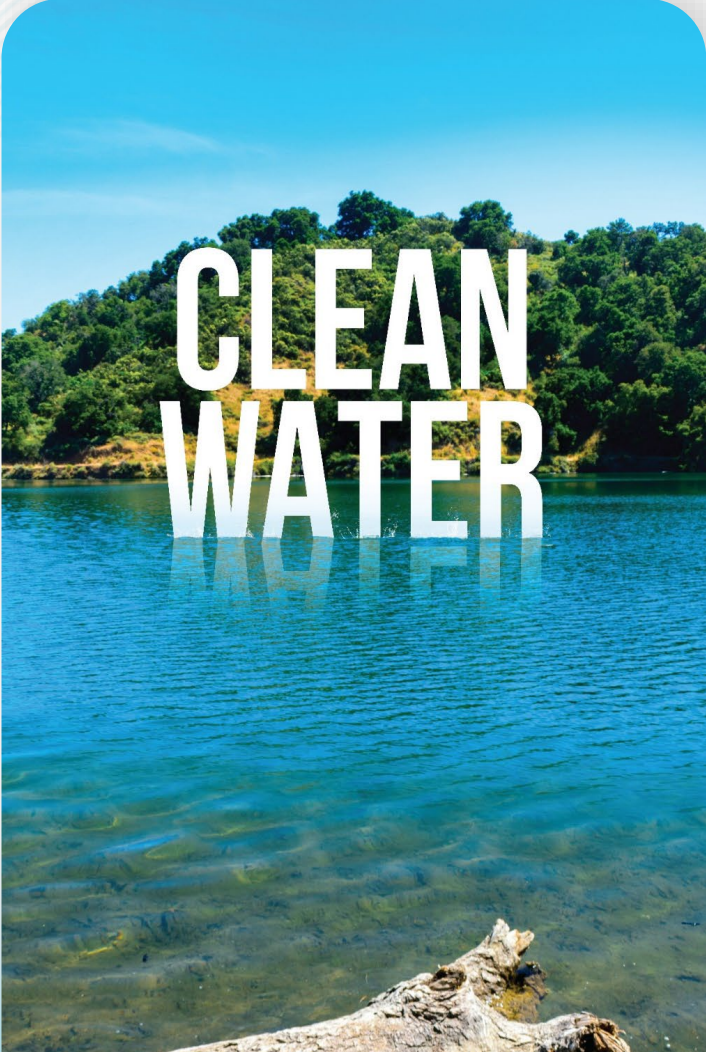


# Introduction Video

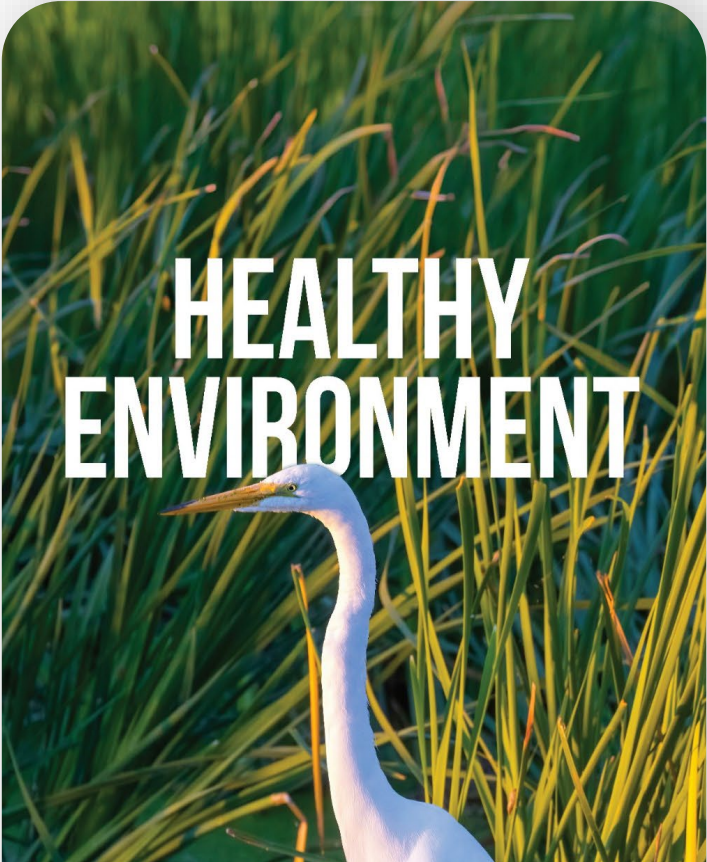
<https://fta.valleywater.org/dl/qhgjbcbrBbTq>



# Valley Water Provides



**CLEAN  
WATER**



**HEALTHY  
ENVIRONMENT**



**FLOOD  
PROTECTION**



# By the Numbers



**333**

Miles owned  
out of 800 miles  
of streams in  
Santa Clara County



**10**

Dams and surface  
water reservoirs



**3**

Water treatment  
plants



**102**

Ground water  
recharge ponds  
covering 277 acres



**1**

State-of-the-art  
water quality  
laboratory



**142**

Miles of  
pipelines



**1**

Advanced  
water purification  
center

# Comprehensive Water Supply System

The Santa Clara Valley Water District (Valley Water) is the groundwater management agency and primary wholesale water provider for Santa Clara County.

15 cities

2,000,000 people

13 local water retailers

4,700 direct well owners

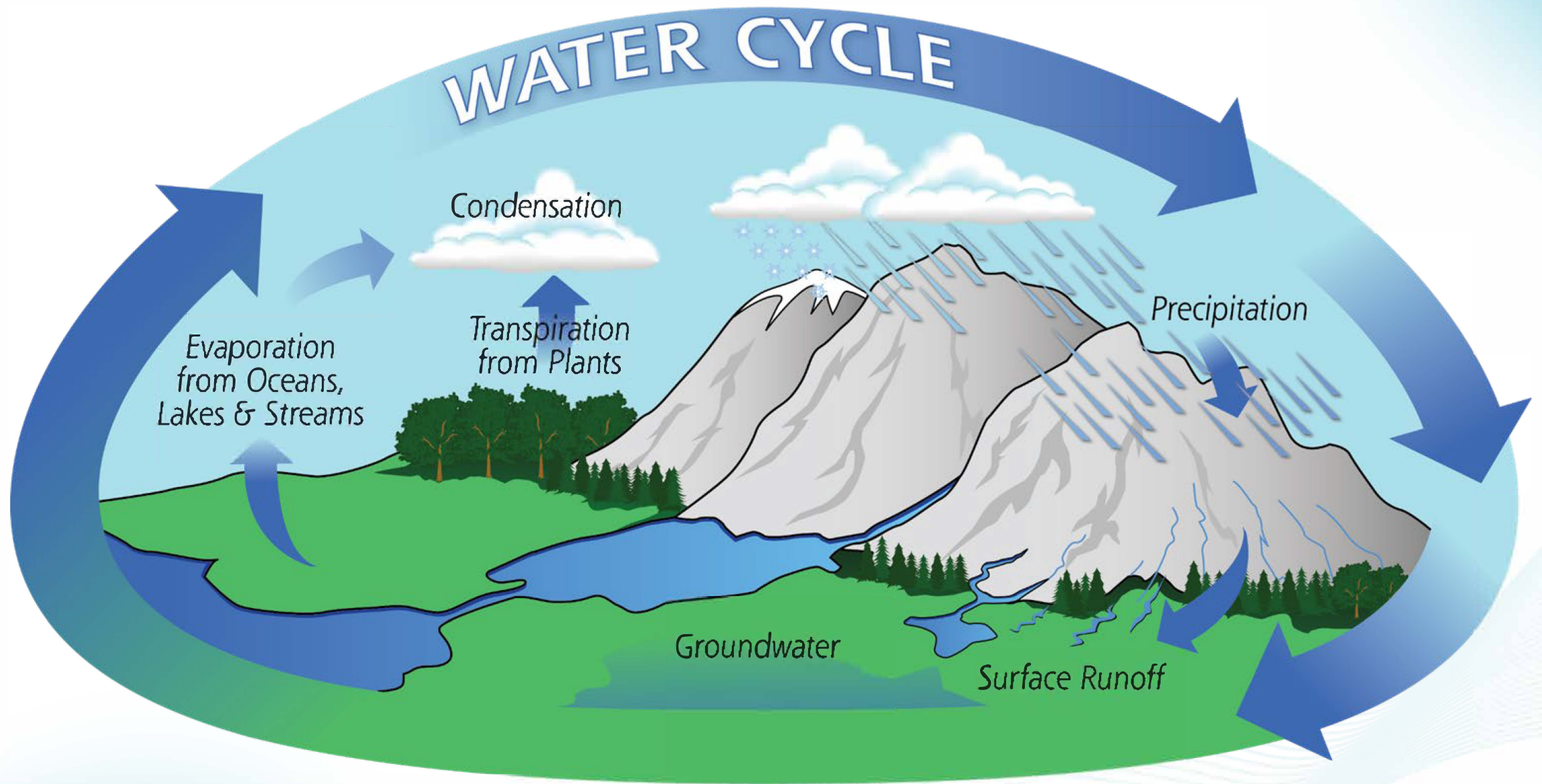


**Valley Water**

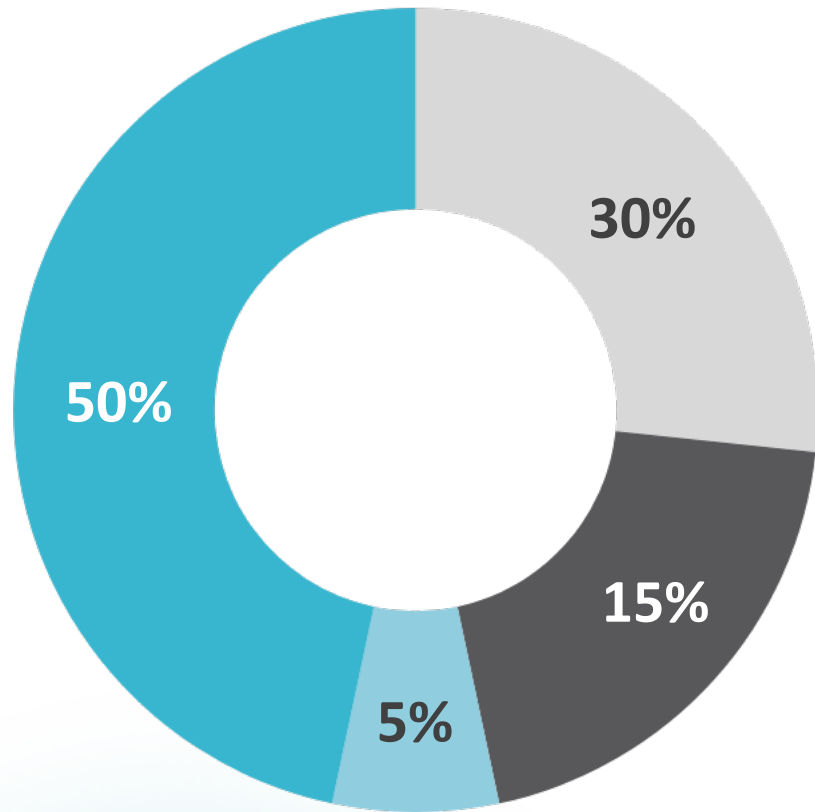
Clean Water • Healthy Environment • Flood Protection







# Santa Clara County Water Supplies



50%

**Imported Water:** Water from the Sierra Snowpack that melts and fills state reservoirs

40% Delta supplies | 10% Hetch Hetchy

30%

**Local Water:** Rainwater captured in Valley Water reservoirs and natural groundwater

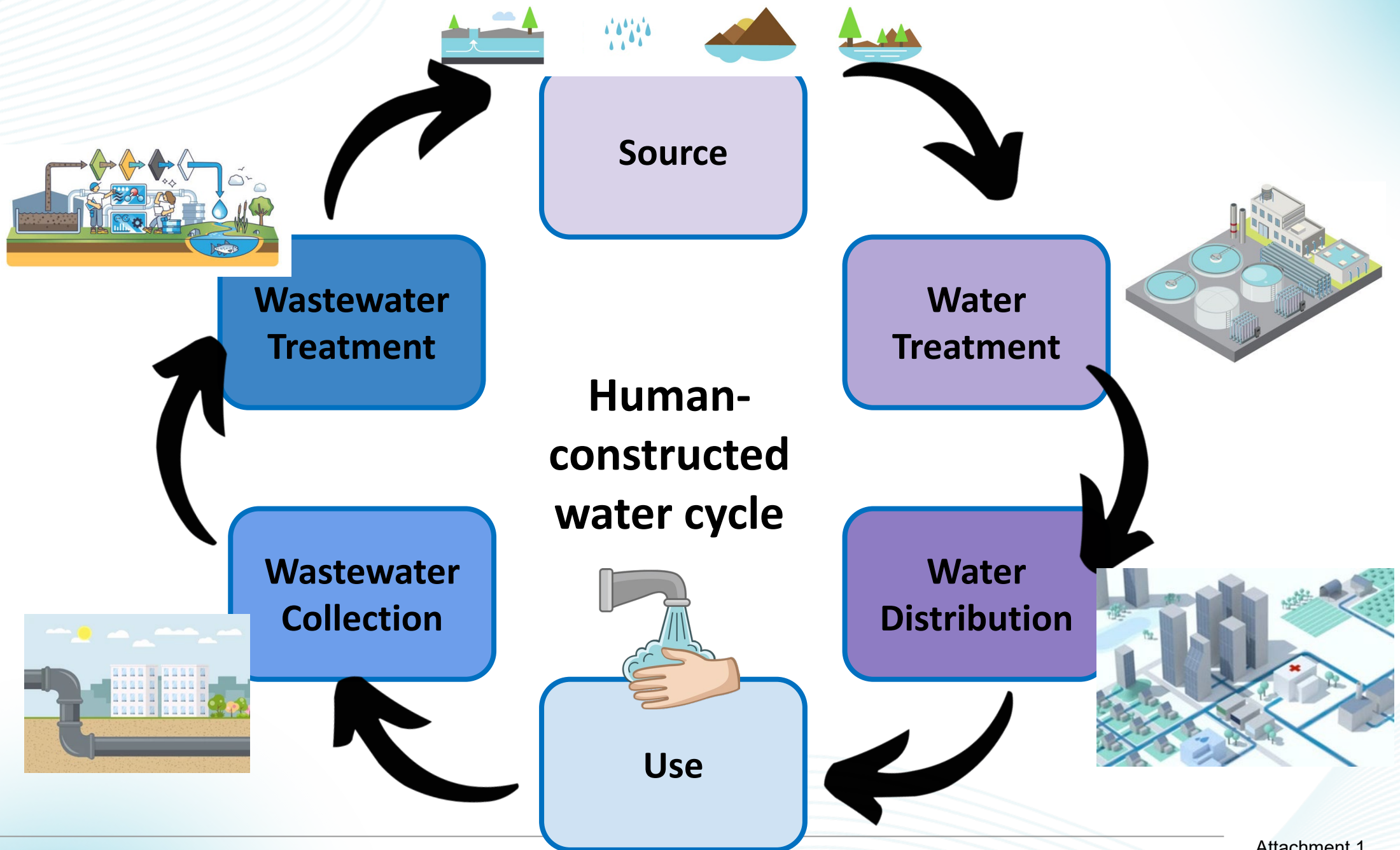
15%

**Conservation:** Consistent short and long-term reductions in water use

5%

**Water Reuse:** Treated wastewater used as recycled water





# Risks to Our Water Supply



Aging Infrastructure



Reduced Imported Water



Climate Change



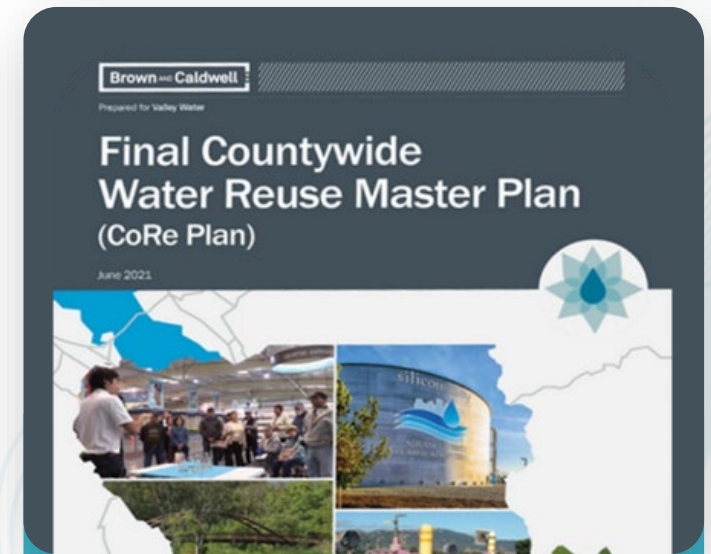
# Responding to Challenges



Infrastructure Upgrades



Water Conservation



Expanding Water Reuse

# What is Purified Water?

## Wastewater



Wastewater comes from what flows down the drains of your homes and is treated at a wastewater facility.

## Recycled Water



Recycled water refers to wastewater that has been cleaned and meets requirements for industrial and irrigation use (non-potable).

## Purified Water



Purified water is highly treated wastewater that has gone through additional advanced treatment and disinfection.



# Purified Water



1

**Water is too valuable to use just once.**



2

**Potable reuse is safe, reliable, and sustainable.**



3

**Purified water provides a drought-resilient water supply in the face of a changing climate.**



# Partnership

The Silicon Valley Advanced Water Purification Center (SVAWPC) is a partnership between Valley Water and the Cities of San José and Santa Clara, who co-own the San José-Santa Clara Regional Wastewater Facility (RWF).

The SVAWPC receives treated wastewater from the RWF and purifies the water using advanced technology.



# A New Source of Water

Partnership with Cities of San José and Santa Clara

- Opened in early 2014
- Provides purified water to enhance the quality of South Bay Water Recycling Purple Pipe system
- Serves as a demonstration, research, and educational facility
- Hosts educational tours on-site





# Enhanced Recycled Water

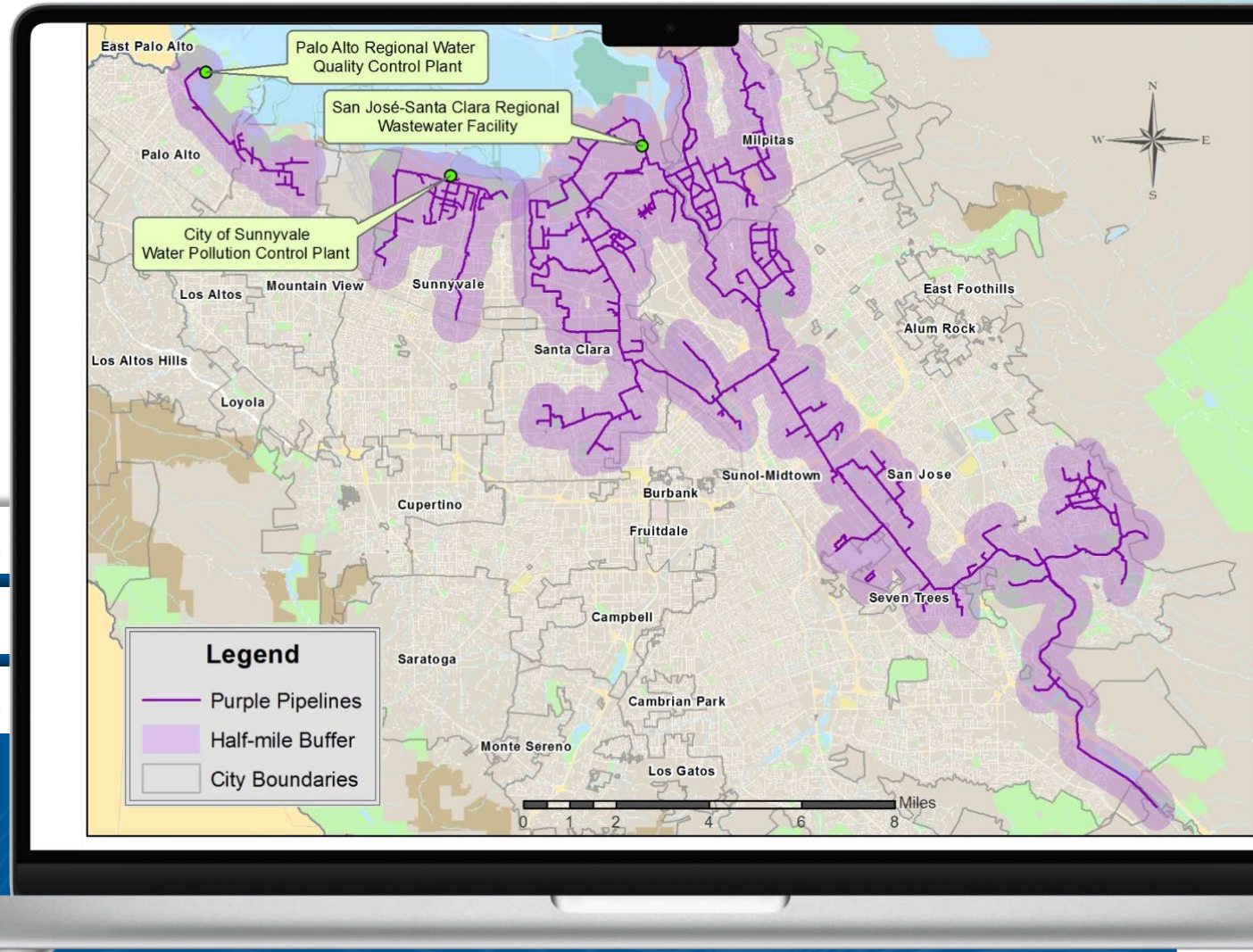


Providing **Drought Proof, High Quality Water**  
for our **COMMUNITY.**

150 miles of pipelines

11,000,000 gallons of water a day on average

900 commercial customers





# Advanced Water Purification



Microfiltration

01



Reverse Osmosis

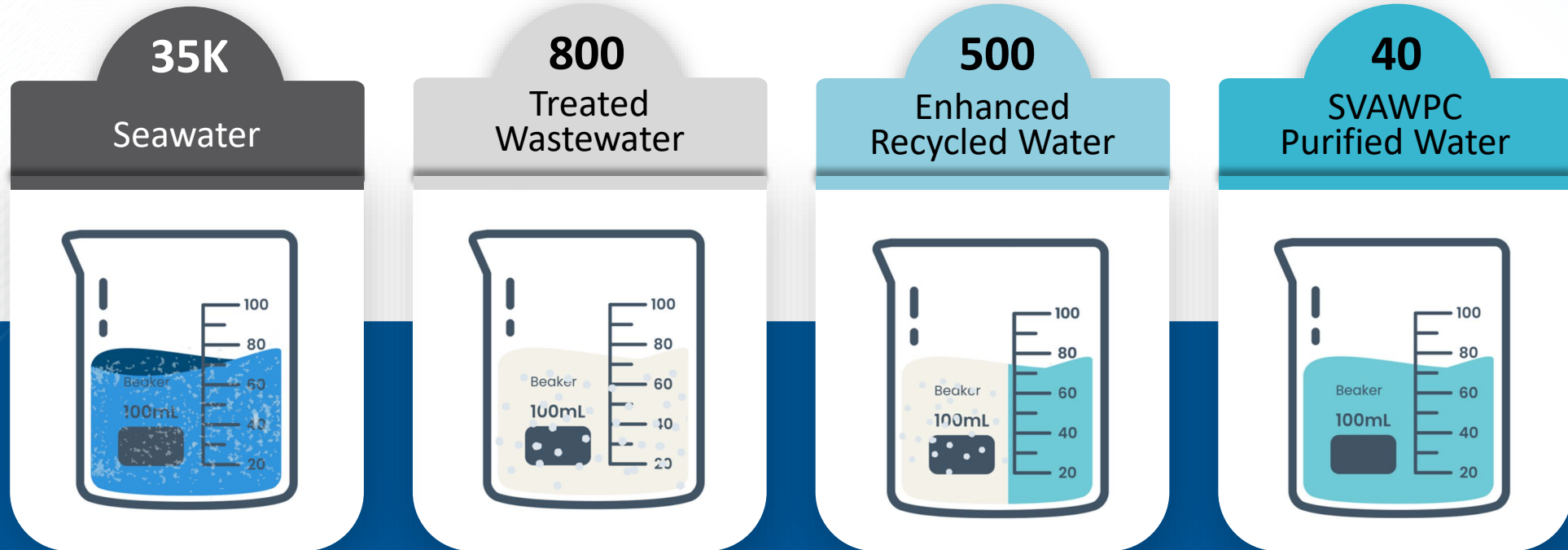
02



UV Light Disinfection

03

# Water Quality



Parts per million (ppm) of Total Dissolved Solids (TDS)

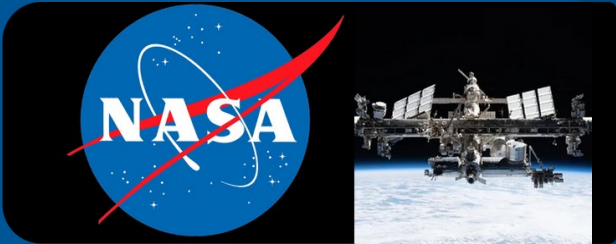


# Statewide Water Reuse Projects

## World Renowned Examples of Water Reuse



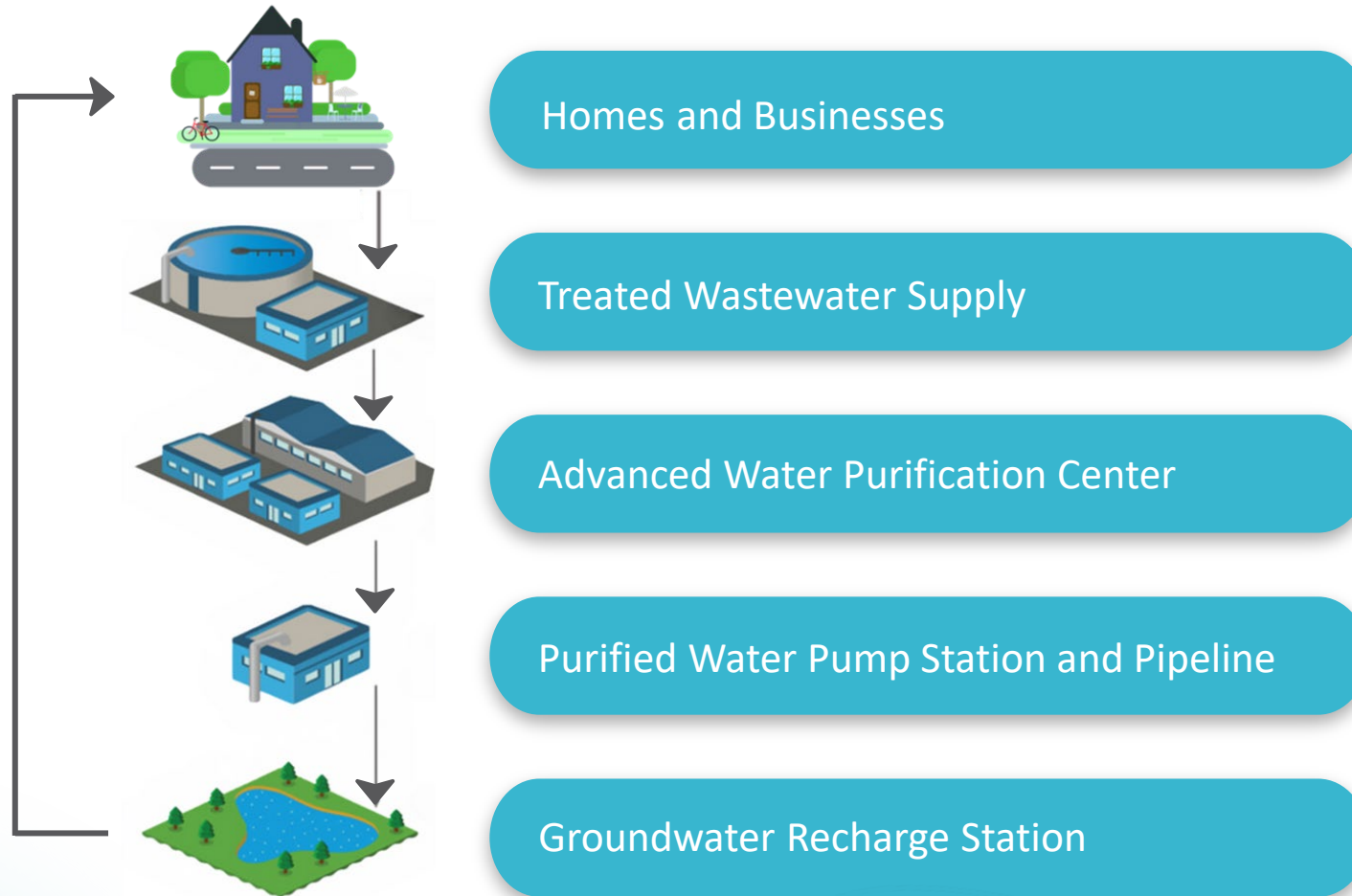
01



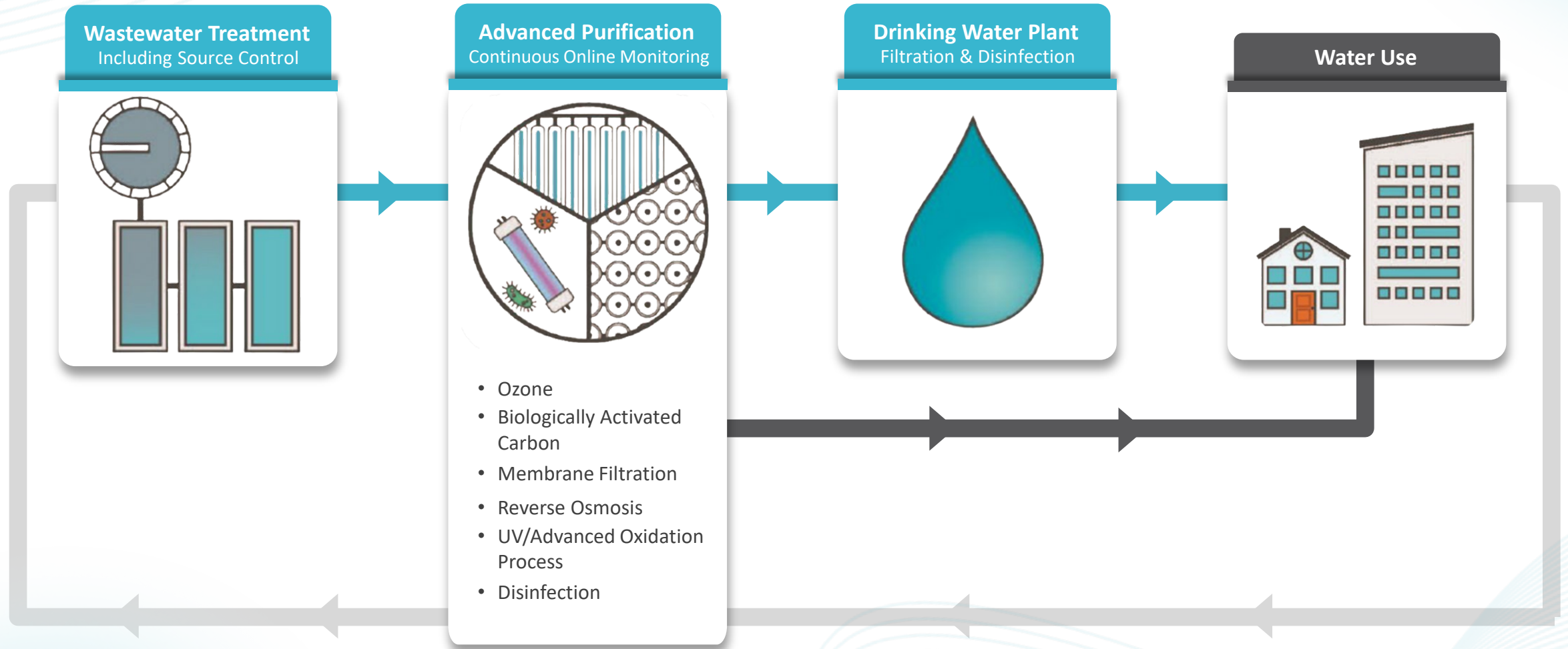
02



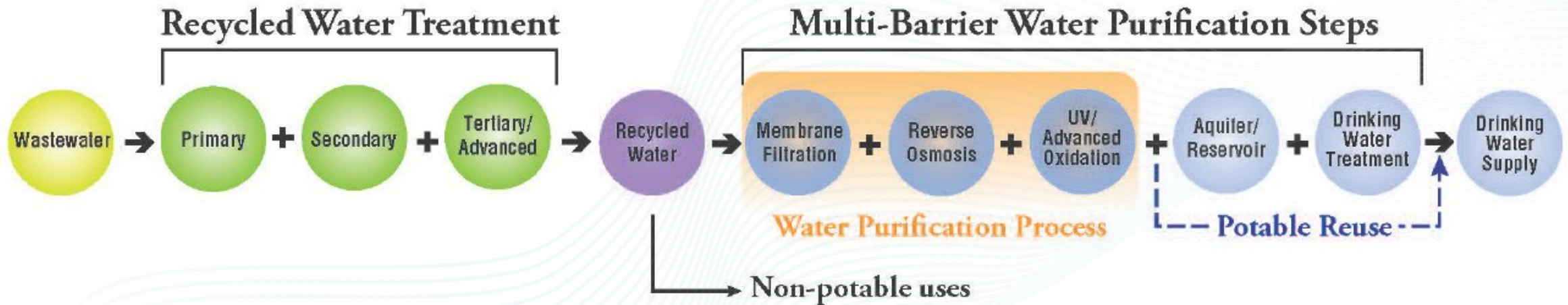
# Indirect Potable Reuse



# Direct Potable Reuse Steps



# The Purification Process









# Intake Pumps

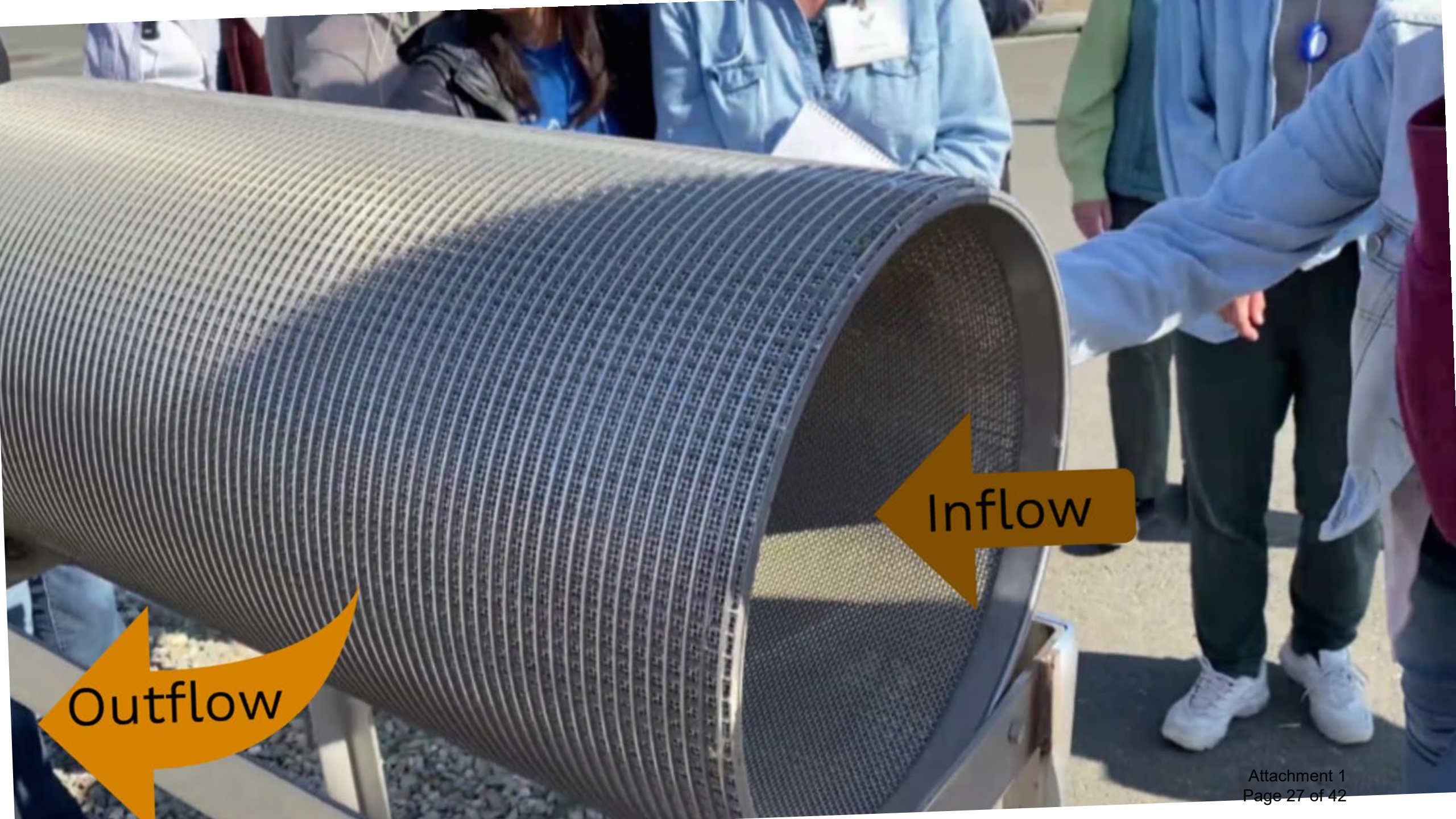




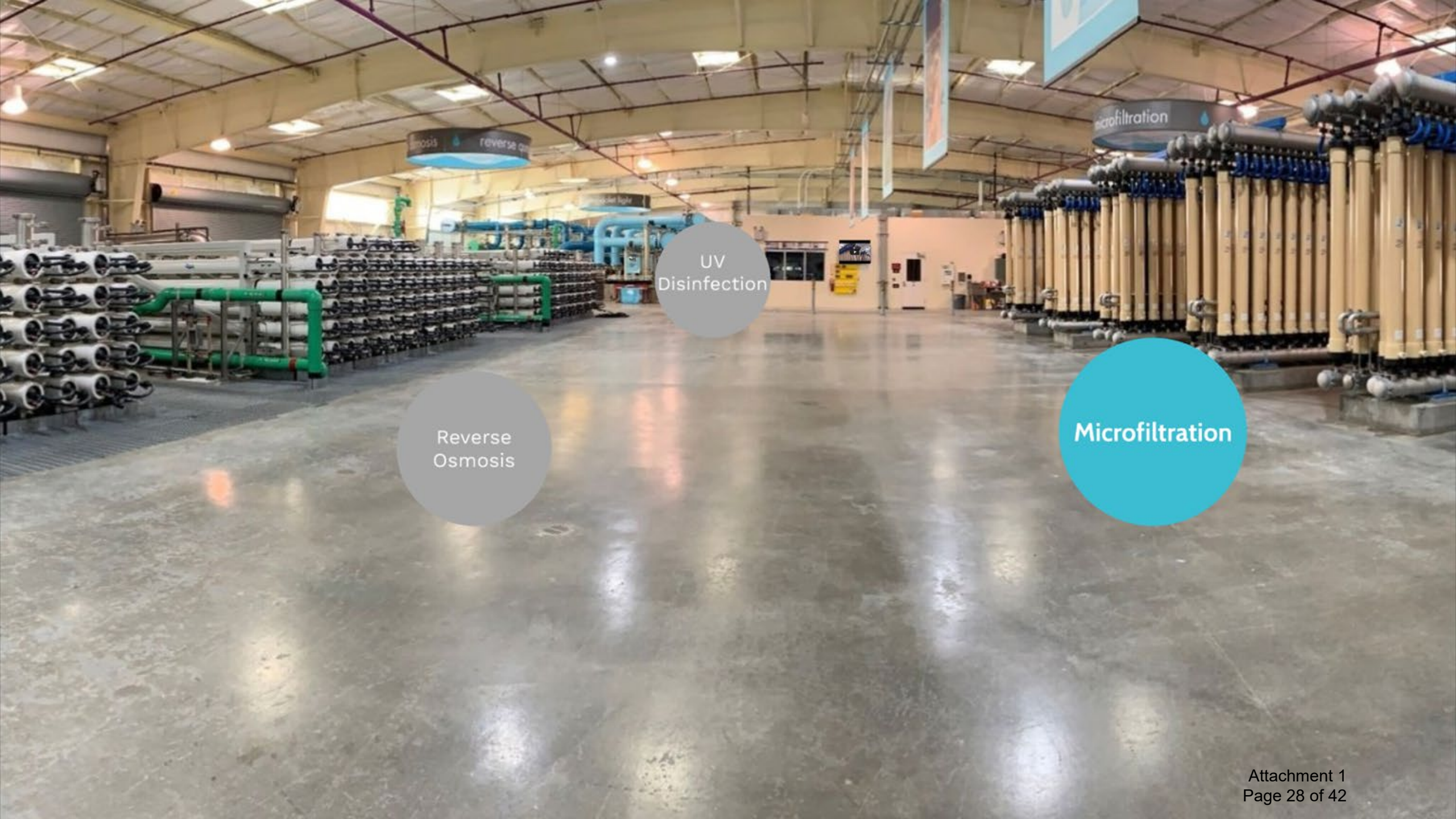
# Auto Strainers











Reverse  
Osmosis

UV  
Disinfection

Microfiltration



# Microfiltration





A circular microfiltration membrane module, likely a ceramic or metal housing, is shown from a top-down perspective. It is filled with a dense array of small, light-colored, cylindrical tubes or fibers. The tubes are arranged in a somewhat regular pattern, with their ends facing upwards. The module is placed on a light-colored, textured surface, possibly a table or workbench. The background is slightly blurred, showing a wooden surface.

# Microfiltration





# Inter-process Tank





# RO Feed Pumps





# Reverse Osmosis





# Decarbonation Towers





ultraviolet light

# UV Light Disinfection

Reactor

**WEDECO**  
a xylem brand



A large industrial machine, likely a UV water treatment system, is shown in a factory setting. The machine features a large, circular, metallic frame with numerous clear, cylindrical UV light bulbs arranged in a radial pattern. The bulbs are held in place by a complex metal structure. In the background, a man in a blue shirt is visible, working on the machine. The machine has several black ports and a yellow label that reads "CENTRAL MACHINERY 3/4 Ton Load Limit 1,500 lb. Capacity".

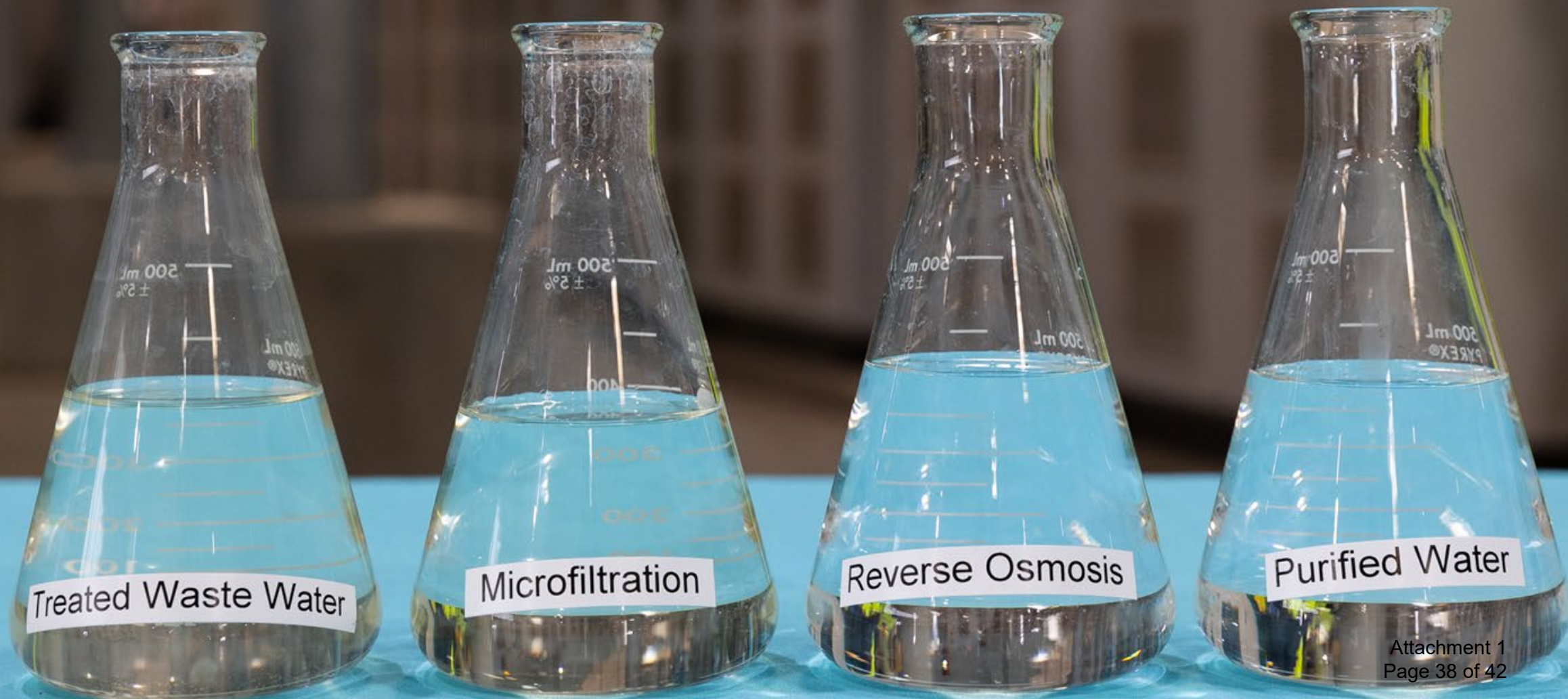
# UV Light Bulbs



# Finishing Tank







Treated Waste Water




Microfiltration

Reverse Osmosis

Purified Water



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# Your Task

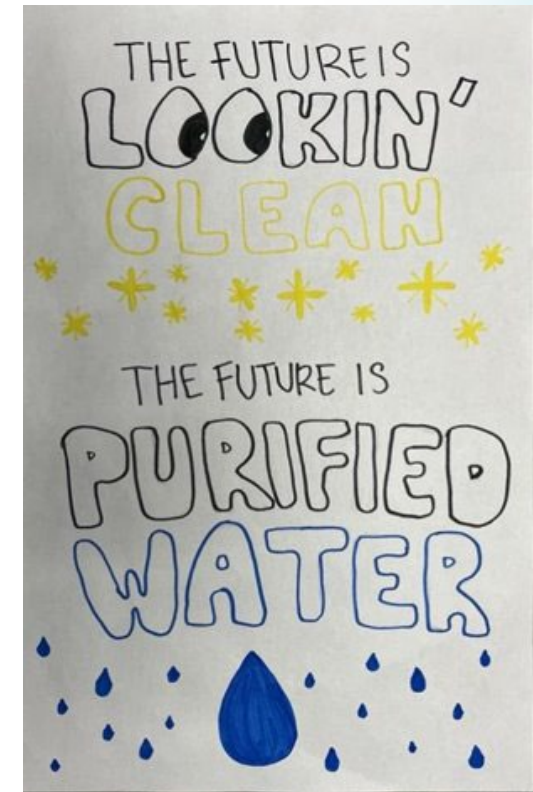
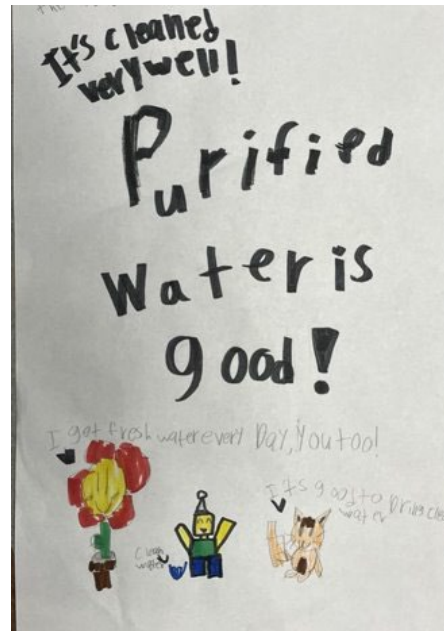
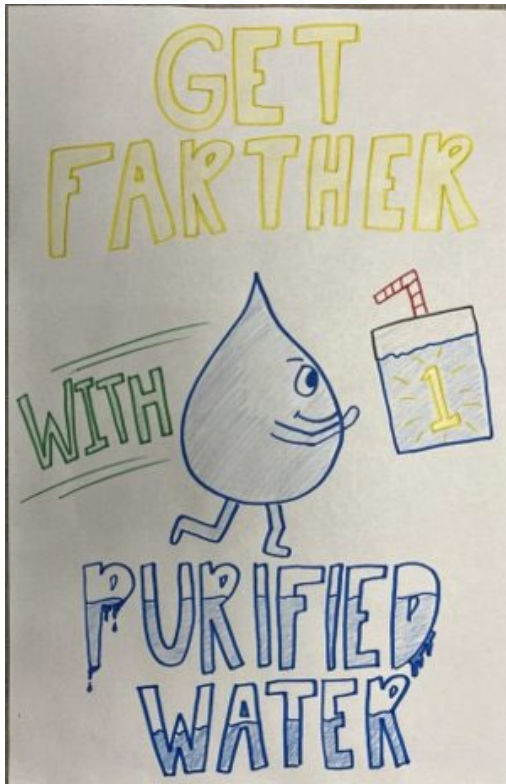


Use your group's poster to represent your solutions to answer the question:

How can we convince the public to promote the use/drinking of purified water?

1. Brainstorm and plan on your handout what you will put on your poster.  
Reference the “artifacts” for more details on purified water.
2. Write and draw on your poster paper (flyer, advertisement, social media post, comic strip, etc.)
3. Share out.

# Examples





# Reflection



What did you think or know about purified water?

What do you now think or know about purified water?