



Pure Water Brewing Alliance: "The World's Most Sustainable Beer"



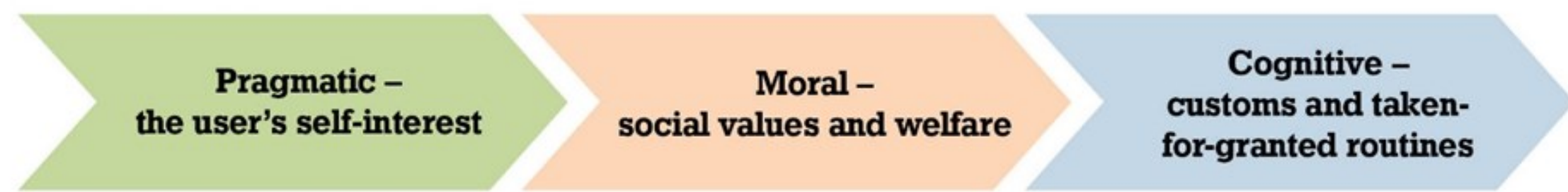
By:
Bri Nakamura, PE ENVSP
Sr. Manager,
Water Science & Engineering Center

Potable Water Reuse—The "YUCK"

Innovative **potable water reuse** or "**recycled wastewater**" have often been met with public opposition, despite having proven technology and water quality meeting or exceeding drinking water standards.

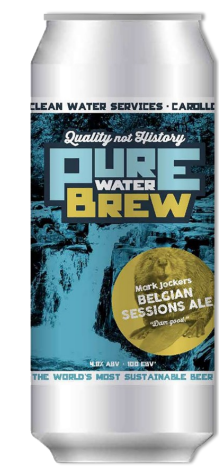
Beer has been a way to create an authentic conversation with the larger community about water quality. These conversations are the cornerstones of a sociological concept known as "**legitimacy**".

Three Levels of Legitimacy



- ◆ **Pragmatic Level** focuses on the user's self-interest, seeking to answer questions such as "How do I benefit personally?" and "How am I involved in the decision-making process?"
- ◆ **Moral Level** deals with social values and welfare, addressing questions like "How is quality and process safety guaranteed?" and "Is the organization trustworthy?"
- ◆ **Cognitive Level** deals with customs and routines that are taken for granted. "Does the technology fit with my daily life?" and "Is the technology essential, with no feasible alternatives?" are examples of the inquiries that community members need answered.

Why Partner with Brewers?



Brewers understand water and recognize the need to use it sustainably. And brewers are very picky about their water.

Clean, high-quality water is a vital ingredient in beer, **making up 90 percent of its content**. The commitment to conservation, along with brewers' passion for technological innovation and ability to brew beer in small batches, is what led to the Pure Water Brewing phenomenon.

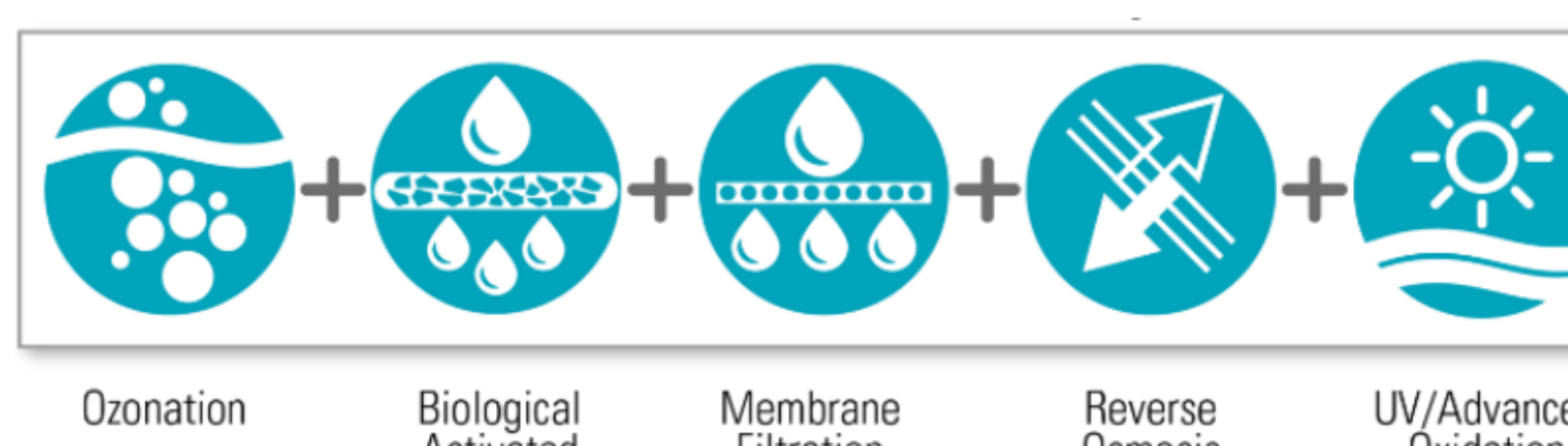
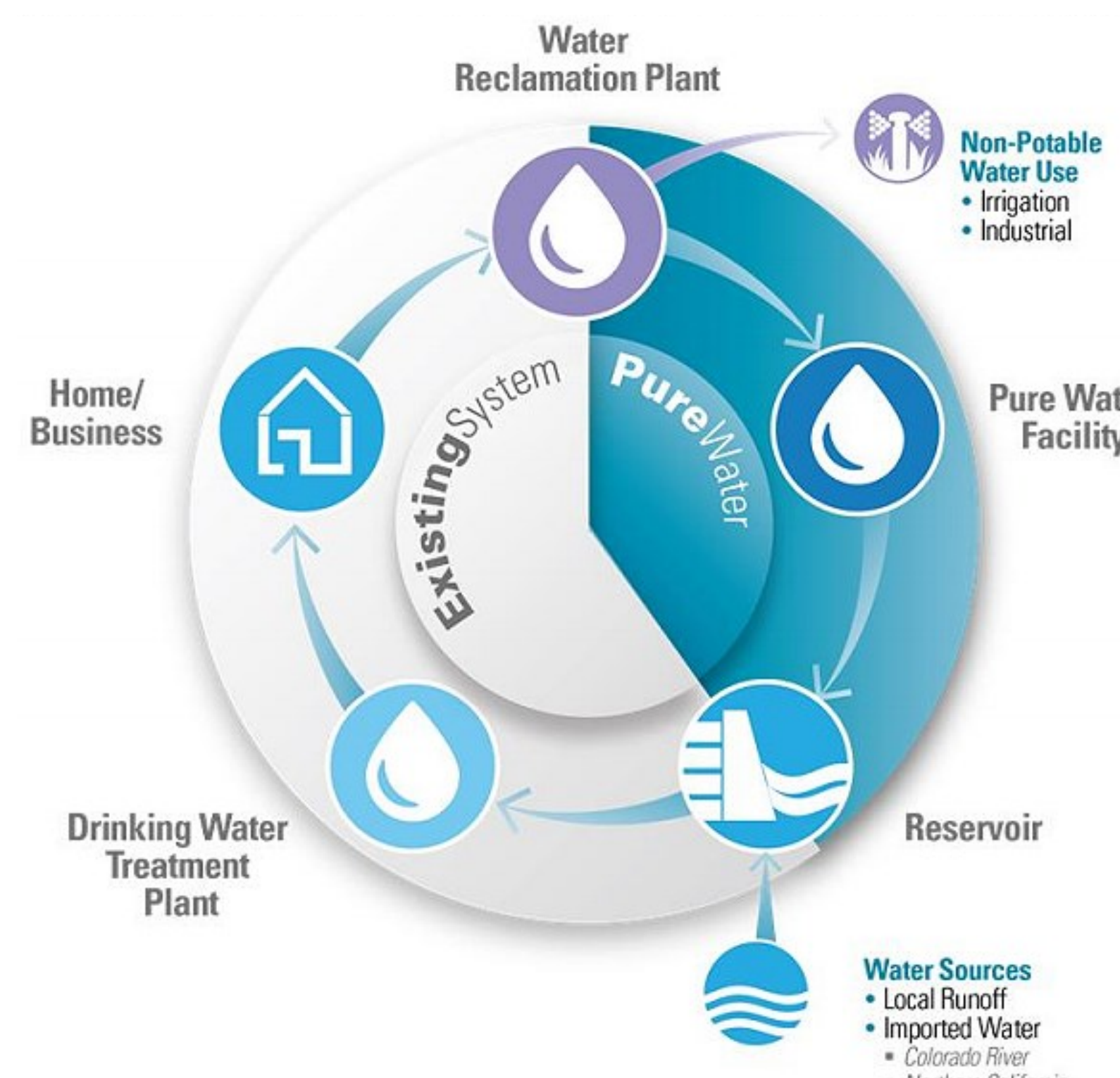
Type's of Water Choices

Municipal Water "The water from your tap"	Treated Water "Tap with extra on-site treatment"	Recycled Wastewater "Purified water"
<ul style="list-style-type: none"> ◆ Sources: Tap, Well, Spring, etc. ◆ Pros: <ul style="list-style-type: none"> ◇ Authentic ◇ Local ◇ Efficient ◇ Terroir ◆ Cons: <ul style="list-style-type: none"> ◇ Terroir ◇ Wear & Tear ◇ Limited Range 	<ul style="list-style-type: none"> ◆ Treatment Types: Charcoal, Reverse Osmosis (RO), Nanofiltration, Softeners ◆ Pros: <ul style="list-style-type: none"> ◇ Clean Slate ◇ More Control ◆ Cons: <ul style="list-style-type: none"> ◇ Less Efficient ◇ RO water is hungry, hard on equipment ◇ It's Expensive! (Installation costs & maintenance) 	<ul style="list-style-type: none"> ◆ Treated wastewater is run through a high purity water system. ◆ Pros: <ul style="list-style-type: none"> ◇ Cleaner than treated water ◇ Free ◇ Clean Slate ◇ More Control ◇ Sustainable ◆ Cons: <ul style="list-style-type: none"> ◇ Public Perception—"YUCK!"

Pure Water San Diego Water Purification Process

- ◆ What is **Pure Water San Diego**?
San Diego relies on **importing 85%** of its water supply from the Colorado River and Northern California Bay Delta. Pure Water San Diego is a phased, multi-year program that will provide **1/3 of San Diego's water supply locally by 2035**.

- ◆ How does the **Pure Water Program** work?
Only **8%** of the wastewater leaving homes and businesses in San Diego is recycled.



- The Pure Water Program:
- ◇ Uses proven technology to clean recycled water to produce *safe, high-quality* drinking water
 - ◇ Provides a *reliable, sustainable*, water supply
 - ◇ Offers a *cost-effective* investment for San Diego's water needs.

- ◆ What are the **steps** of the **Water Purification Process**?
Since June 2011, the City has produced 1 million gallons of purified water every day at its Pure Water Demonstration Facility.
- ◇ **50,000** lab tests: **Met all standards**
- ◇ Water quality: **Exceptional**
- ◇ Energy use: **Renewable**

Stone Brewing "Full Circle" Pale Ale

- ◆ Stone partnered with the City of San Diego to **elevate** the discussion regarding recycled water.

- ◆ "**Full Circle**" Pale Ale was described as:
 - ◇ Brewed to be **refreshingly clean!**
 - ◇ 5.4% ABV, 53 IBUs, Color 21
 - ◇ Brewed with very generous additions of Riwaka and Wai-iti hops, Pale 2 row malt, malted rye, and wheat malt
 - ◇ Tropical fruit notes from the New Zealand hops and some nice caramel flavors



Stone Brewing's Pat Tiernan and San Diego Mayor Kevin Faulconer, try Stone's Full Circle Pale Ale.

- ◆ **One-time release** of five half-barrels on March 16, 2017 at a special event held at the Stone Brewing World Bistro & Gardens at Liberty Station in San Diego, CA.
- ◇ **Coincided** the release to be the same week as World Water Day (March 22, 2017) and the WaterReuse California Annual Conference, which also held a "Pure Water Brew" competition for homebrewers.

- ◆ Full Circle Pale Ale aligns with Stone Brewing's other **sustainability** initiatives:

- ◇ Stone **recycles 50%** of its wastewater in their Escondido, CA location.
- ◇ Escondido location generates about **65,000 gallons-per-day (gpd)** of reclaimed water per production day for non-potable process usage in the cooling towers, boilers, and clean-in-place skids, that was around **17 million gallons** in 2017!
- ◇ **Brewing by-product** from Stone Brewing's Richmond, VA location is used at Richmond (VA) Water Resource Recovery Facility (WRRF) to meet effluent discharge requirements for nitrogen.
- ◇ Working with a local WRRF to utilize their high strength organic by-products for use in generating electricity.



Stone Brewing's, Director of Operations, West Coast, Tim Suydam, talks about Stone's experience at WEFTEC 2017.

Media Response to "Poo" Beer

- ◆ With Stone Brewing's high profile in the craft brewery and mainstream world, there was **lots of publicity** surrounding the "Full Circle" Pale Ale's release.

- ◆ **Not all publicity was good!** Many articles still had the "eww" or "yuck" factor.

- ◆ "**Yucky**" Media Headlines:

- ◇ "Stone Brewing Creates 'Toilet to Tap' Sewer Beer"
- ◇ "This Brewery is Making Beer Out of **Poop Water**, And It's 'Delicious'"
- ◇ **James Corden's** next Stone Brewing suggestions included: "Stone I, Pee, A", "Stone Extra Brown Ale", and "Stone Someone Had Asparagus Last Night Lager"

- ◆ Stone Brewing released a "**facts**" article to combat many of the press reports that were inaccurate. Here are some of the facts:

- ◇ "Toilet to tap? No, not quite."
- ◇ It is no longer available. It got consumed in a few hours by politicians and VIPs. Sorry, it was not available to the public.
- ◇ The reclaimed water we used in Stone Full Circle Pale Ale was:
 - ◇ Cleaner than normal tap water
 - ◇ Allows for a more reliable source of supply
 - ◇ Benefits the environment and community
 - ◇ Reinforces Stone Brewing's commitments to sustainability and the community



Pure Water Brew Telling the story of **ONE WATER** a pint at a time.



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