**THE BUSINESS CASE FOR INDUSTRIAL REUSE**

Industrial facilities adopt water reuse for a variety of business reasons:

- **WATER SECURITY**
  As persistent drought, increasing demand, and other pressures strain local fresh water resources, water reuse offers a reliable option for facilities that depend on water to operate.

- **COST SAVINGS**
  Recycled water for industrial processes and irrigation is often less expensive than water treated to drinking water standards because of the reduced treatment costs required to produce it.

- **ENVIRONMENTAL COMPLIANCE**
  As state and local governments increase water quality-related regulations, water reuse is an effective strategy to achieve regulatory compliance; in fact, several jurisdictions now stipulate the use of recycled water for new plant construction.

- **SOCIAL RESPONSIBILITY**
  Industrial reuse plays an important role in an organization’s corporate vision and environmental stewardship goals, helping to achieve corporate sustainability and lessen impact on water supply in a local community.

**HOW INDUSTRY RECYCLES WATER**

Commercial, institutional, and industrial facilities rely on large quantities of water to perform a variety of functions including cooling, washing, processing, conveyance, energy production, sanitation, and irrigation. In fact, upwards of 50% of the total water used at many commercial facilities is for cooling equipment. By using recycled water to meet these needs—and offsetting demand for drinking water—businesses and the communities in which they operate become more resilient.

Because most industrial uses do not involve human consumption, it is not always necessary to use drinking water for fresh water supply. A *fit-for-purpose* approach enables water to be cleaned to a level required by a specific end use, allowing an industrial facility to select a custom combination of treatment technologies and avoid costly over treatment. The adoption of recycled water for new applications continues to expand with a range of industries using recycled water that includes:

- Power Generation
- Mining & Metals
- Pulp & Paper
- Microelectronics & Data Centers
- Biofuel & Alternative Fuel Plants
- Food & Beverage
- Pharmaceutical
- Automotive
- Oil Refining & Petrochemical
- Textiles
EXAMPLES OF WATER REUSE FOR INDUSTRY

Water is an essential component for business. While new technologies and a better understanding of the benefits are increasing interest in industrial reuse, many businesses have already integrated recycled water into their daily operations.

PUBLIC-PRIVATE PARTNERSHIP: TAMPA ELECTRIC | FLORIDA
Since 2015, Tampa Electric has relied on local municipalities to provide recycled water to cool the Polk Power Station. This water was initially provided by the City of Lakeland. Two years later, Polk County and the City of Mulberry also became suppliers. In all, about 7 million gallons of recycled water is pumped for use at the power station—rather than discharged into surrounding water. Because of the positive environmental impacts, Southwest Florida Water Management District also came on board as an early partner, funding over a third of the initial $120M cost.

ONSITE REUSE: FRITO-LAY SNACK FOOD PLANT | ARIZONA
In 2010, Frito-Lay began operation of the first U.S.-based food processing plant to produce water up to drinking water standards, for reuse in food production. The facility relies on a 650,000-gallon-per-day process water treatment and recovery system, recycling up to 75 percent of the facility’s process water. This has cut Frito-Lay’s annual water use by 100 million gallons. The innovative advanced treatment system treats water to drinking water standards, ensuring it can be safely used to wash and move food—ultimately helping the company achieve its goal of nearly net-zero waste.

PUBLIC-PRIVATE PARTNERSHIP: CHEVRON REFINERY | CALIFORNIA
Chevron’s Richmond Oil Refinery is a leading user of recycled water in the Bay Area. This is due in large part to a partnership with East Bay Municipal Utility District (EBMUD), which provides recycled water to the refinery, and their joint effort known as the Richmond Advanced Recycled Expansion, or RARE. The project involved technologies such as microfiltration and reverse osmosis systems, allowing EBMUD to produce around 7.5 million gallons per day. This water is used by Chevron to generate steam necessary for manufacturing products like gasoline, jet fuel, diesel, and lubricants, as well as in cooling towers.

ONSITE REUSE: DUKE UNIVERSITY WATERHUB | NORTH CAROLINA
In 2020, Duke University began using an eco-engineered onsite water recycling system to clean wastewater for cooling. Duke partnered with technology provider Sustainable Water to build a 9,000 square foot WaterHub, which creates lower cost water and saves 120 million gallons of water annually. A hydroponic greenhouse at the center of the treatment process uses the root systems of plants to act as natural filters.

PUBLIC-PRIVATE PARTNERSHIP: DATA CENTER ALLEY | VIRGINIA
As the world’s largest concentration of data centers, Loudoun County’s Data Center Alley houses more than 3,400 technology companies, many of which contain massive servers that require cooling. To satisfy this need, in 2010, the data centers began a partnership with Loudoun Water, which constructed a recycled water distribution system. The system, now spanning 16 miles, supplies this fast-growing industry with water for industrial cooling and irrigation.

PUBLIC-PRIVATE PARTNERSHIP: GREEN BAY PACKAGING | WISCONSIN
For the last 15 years, Green Bay Packaging has been a leader in the use of recycled water for pulp production and paper manufacturing. When their new facility opens in 2021, it will bring with it state-of-the-art advances—one of the biggest being the increased use of recycled water. Due to a partnership with NEW Water, Green Bay’s water treatment facility, and their recently overhauled recycled water system, the mill will be the first facility of its scale in Wisconsin to use recycled water from an adjoining wastewater treatment facility.

About the WateReuse Association

The WateReuse Association is the nation’s only trade association solely dedicated to advancing laws, policy, funding, and public acceptance of recycled water. WateReuse represents a coalition of utilities that recycle water, businesses that support the development of recycled water projects, and consumers of recycled water. In addition to supporting members throughout the country, WateReuse has active local sections in Arizona, California, Colorado, Florida, Nevada, Texas, and the Pacific Northwest. To learn more, visit www.watereuse.org.