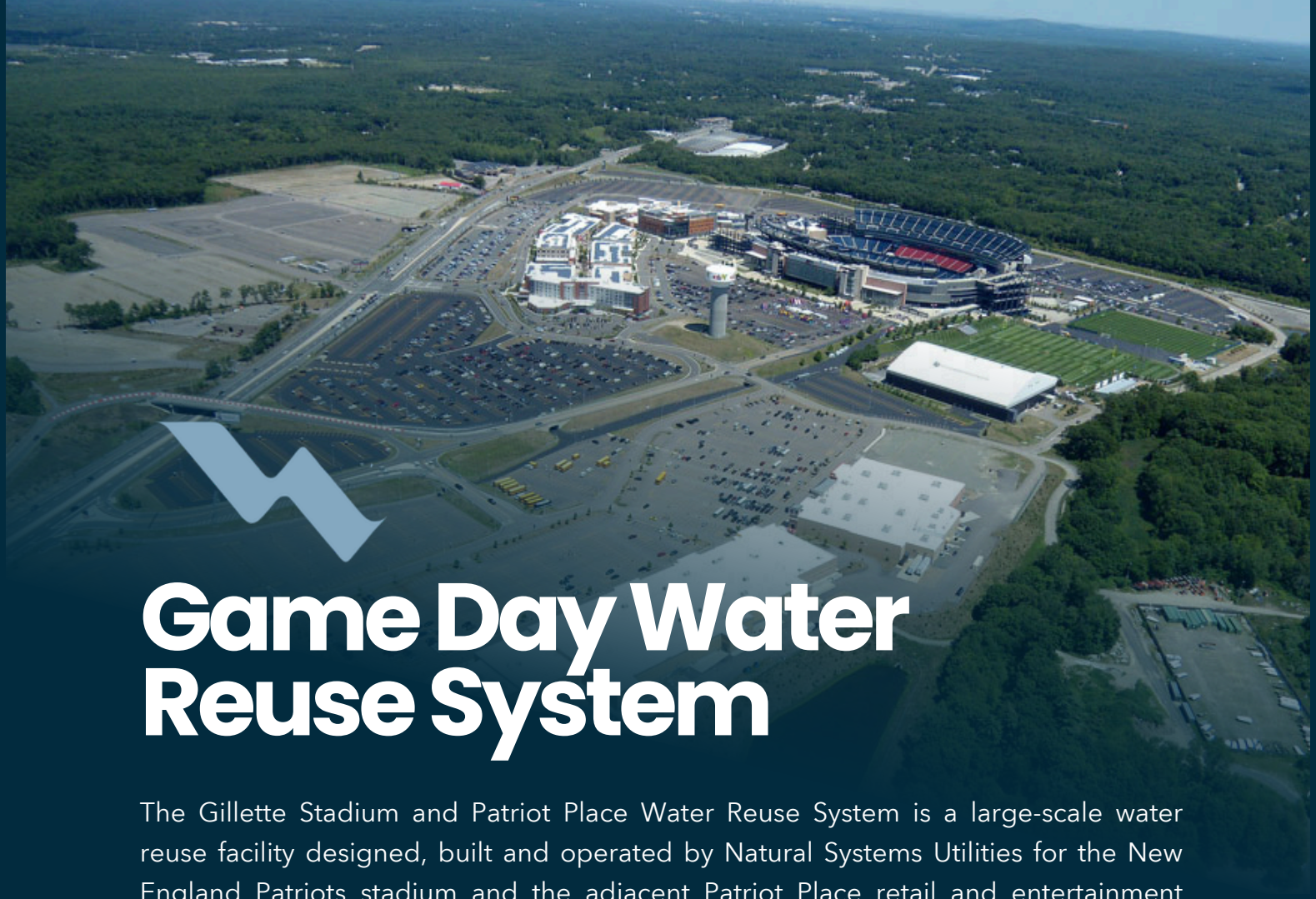

# Game Day Water Reuse System

The Gillette Stadium and Patriot Place Water Reuse System is a large-scale water reuse facility designed, built and operated by Natural Systems Utilities for the New England Patriots stadium and the adjacent Patriot Place retail and entertainment complex in Foxborough, Massachusetts. The facility was developed in response to peak water use on game days, during concerts and special events, exceeding the capacity of the Town of Foxborough's water supply and wastewater treatment infrastructure. The system captures wastewater from the stadium and reuses it to produce treated water suitable for nonpotable applications, including toilet flushing, cooling, and irrigation. The facility has a treatment capacity of 250,000 gallons (~946,000 L) per day, using a membrane bioreactor system, and includes storage volumes approaching one million gallons (~3.79 million liters) to buffer variable flows.

The project has been in continuous operation since 2003, providing an example of how decentralized treatment can support major entertainment and sporting venues.

**REDUCE**

**RECOVER**

**FOXBOROUGH, MA, USA**

**WASTEWATER**

**INDUSTRIAL**

wef | CASE STUDY

## CHALLENGES FACED

- Game days and concerts create extreme spikes in water use and wastewater generation.
- Attendance can exceed 68,000, producing short-term peak loads.
- Foxborough's water supply and wastewater facility weren't sized to meet peak potable demand or sewage processing needs.
- Integrated large storage volumes, nearly 1 million gallons (~3.79 million liters), and advanced membrane bioreactor treatment were required to maintain high-quality reuse water.

## TECHNOLOGIES & SOLUTIONS USED

The water reuse system includes a 250,000 gallon (~946,000 liters) per day membrane bioreactor treatment facility to produce high quality reclaimed water suitable for nonpotable reuse. The system incorporates approximately 1,000,000 gallons (~3.79 million liters) of wastewater capture and storage tanks to manage the high variability in flows generated during stadium events. An elevated storage tank with a 500,000 gallon (~1.89 million liters) capacity stores treated reuse water for delivery back to Gillette Stadium and Patriot Place facilities.

## IMPACT & INSIGHTS

- 250,000 gallons/day (~946,000 liters/day) treatment capacity, converting wastewater into high-quality reuse water for nonpotable applications
- Nearly 1 million gallons (~3.79 million liters) of total storage, buffering variable flows during stadium events
- 50% reduction in potable water use by replacing drinking water with reclaimed water for non-potable needs
- 100% reduction in wastewater discharge to the municipal system for toilet loads served by reclaimed water
- Millions of gallons (millions of liters) of potable water displaced over more than two decades of operation

## LESSONS LEARNED

- Engage stakeholders early, including community groups, regulators, and future operators, to align on goals and design expectations from the outset.
- Use enhanced data-driven modeling of peak and average usage patterns to optimize system sizing and storage capacity.
- Invest in advanced digital controls and real-time performance analytics to improve operational efficiency and predictive maintenance.
- Assess regulatory pathways and stakeholder expectations early to streamline approvals and implementation.

> **"The successful long-term operation of the system for more than twenty years has positioned it as a sustainability icon in the region and showcases the capability of decentralized water treatment to deliver reliable results in challenging high demand conditions."**

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