

Water/Wastewater Application

INTRODUCTION

The global IoT in Utilities market (covering sectors like energy, gas, water, and wastewater) is forecasted to grow from ~USD 55–65 billion in 2025 to ~USD 174 billion by 2033, at a CAGR of ~12-14%. Within this, the more narrowly defined Smart Water Management segment is projected to grow from USD 17.5 billion in 2025 to USD 38.9 billion by 2032, at a CAGR of 12.1%.

This growth demonstrates both the broad adoption of IIoT technology in utilities and its proven value. For the water/wastewater sector, adoption of IIoT-driven machine health monitoring could not come at a more critical time, given population growth, limited freshwater resources, and aging infrastructure.

PROBLEM

Most water/wastewater treatment plants are relatively small and run on legacy equipment. A typical plant may only have a handful of 400–600 HP motors powering pumps that are essential for delivering potable water.

Concerns include:

- **High failure risk:** Motors face stress during peak demand, especially in summer.
- **Manual inspections:** Personnel manually check motors multiple times per week.
- **Extended downtime:** If a motor fails, downtime can last 3–4 days while parts are sourced and repairs are completed.
- **Supply chain challenges:** Replacement parts are harder to find, compounding delays.
- **Population impact:** A single motor failure risks a shortage in the city's water supply



When motors fail at a local treatment plant, the city's water supply faces the risk of a shortage.

SOLUTION

The GraceSense Machine Health Monitoring Solution addresses these risks by providing real-time visibility into motor health.

- **Continuous Monitoring:** Vibration and temperature sensors capture motor performance data continuously.
- **Cloud-Based Insights:** Data streams to the Maintenance Hub, accessible through a secure browser interface.
- **Early Failure Detection:** Sensors identify anomalies well before failure, giving maintenance teams time to source parts in advance.
- **Actionable Alerts:** SMS/email notifications provide immediate details on the problem and recommended remediation steps.
- **Resource Optimization:** Continuous monitoring reduces the need for frequent manual inspections, allowing personnel to focus on other plant priorities

RESULTS & TRANSFORMATION

GraceSense delivers tangible improvements for water/wastewater utilities:

- **Stress reduction:** Less reliance on reactive maintenance during peak demand.
- **Faster response:** Teams can plan for impending failures and act proactively.
- **Resource reallocation:** Staff can focus on other legacy assets while monitoring remains automated.
- **Downtime minimization:** Parts are sourced and repairs planned, cutting downtime significantly.
- **Improved reliability:** Continuous monitoring ensures water supply stability for the population

ABOUT GRACESENSE™ MACHINE HEALTH MONITORING

The GraceSense Machine Health Monitoring Solution is an IIoT-based platform that integrates wireless and wired sensors with advanced analytics.

- **Asset Health Insights:** Provides deep visibility into equipment condition.
- **Actionable Guidance:** Sends SMS/email alerts with step-by-step remediation instructions.
- **Reliability & Safety:** Improves overall plant reliability, safety, and efficiency by catching anomalies before they escalate.

GraceSense enables utilities to shift from reactive firefighting to proactive, data-driven operations, ensuring safer and more reliable service delivery.



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