Centralized Pump, Valve, Spares & Field Logs to Stabilize Water Delivery

CLIENT PROFILE

A major urban water utility responsible for supplying potable water across multiple districts. Their operations include pumping stations, treatment plants, transmission mains, distribution networks, valves, reservoirs, and metering infrastructure.
With rising urban demand, any unplanned downtime can immediately affect water pressure, supply continuity, and citizen satisfaction. Ensuring consistent network performance was therefore critical.

WATER

CHALLENGE

The utility was dealing with frequent service disruptions caused by:

- Fragmented pump maintenance logs spread across paper registers and WhatsApp updates.
- Valves not being inspected or exercised on time, causing stuck or non-responsive valves during emergencies.
- Poor tracking of spares such as pumps, bearings, seals, impellers, actuators, and electrical components.
- Field technicians submitting incomplete or inconsistent service logs.
- Delays in identifying pump failures, suction issues, motor overheating, or vibration anomalies.
- No centralized view of outages, repair status, or recurring problem locations.

These weaknesses collectively led to unplanned downtime, supply fluctuations, and rising operational costs.

SOLUTION IMPLEMENTED

Asset Infinity deployed a centralized Water Network Maintenance & Reliability System connecting field teams, pump houses, storekeepers, and operations control rooms.

1. Digital Pump & Valve Maintenance Schedules

- PM workflows created for all rotating, electrical, and valve assets.
  - Mandatory inspection items:
  - Vibration readings
  - Motor temperature
  - Pressure levels
  - Seal health
  - Valve lubrication & exercise cycles
- Overdue PM escalated instantly to station supervisors.

2. Centralized Field Log System

- Technicians captured breakdowns, leaks, valve issues, and pressure drops via mobile app.
- Logs included photos, readings, GPS location, and repair actions.
- Eliminated ambiguity from handwritten notes.

3. Spare-Part Inventory Tracking

- Spares such as bearings, pump sets, gaskets, actuators, contactors, and panels tracked end-to-end.
- Low-stock alerts minimized delays during corrective repairs.
- Complete traceability of spares used at each station.

4. Pump House Health Dashboard

- Real-time visibility into:
  - Pump runtime & health status
  - Valve condition and exercise history
  - Open maintenance jobs
  - Repeated failure-prone locations
- Supervisors could prioritize high-risk stations immediately.

5. RCA Insights for Recurring Failures

- System identified patterns such as:
  - Pumps overheating at specific stations
  - Valves sticking repeatedly in certain zones
  - Higher breakdown frequency tied to PM skips
- Enabled engineering teams to implement long-term fixes.

IMPLEMENTATION & ROLLOUT

- **Rolled out across pumping stations, treatment plants, and network maintenance teams.**
- **Field staff trained on mobile workflows for inspections and repairs.**
- **Historical logs digitized for continuity and RCA analysis.**
- **Deployment completed without affecting daily water supply operations.**

WATER

MEASURABLE BENEFITS

- 19% reduction in downtime across pumping stations and network nodes.
- Faster repairs due to consolidated field logs and spare availability.
- Clear visibility of recurring issues led to stronger planning and preventive actions.
- Improved pump & valve reliability stabilized water delivery.
- 100% digital trail enhanced audit readiness and operational transparency.

OUTCOME & IMPACT

The water utility gained:

- Stable water supply with fewer unplanned service interruptions.
- More efficient operations with predictable maintenance cycles.
- Better team coordination across pump operators, engineers, and storekeepers.
- A data-driven approach to network reliability and customer satisfaction.

CONCLUSION

By centralizing pump logs, valve inspections, spares tracking, and field maintenance workflows, Asset Infinity helped the water utility achieve a 19% reduction in downtime, significantly improving reliability and delivery continuity across the network.

WATER