

WATER UTILITIES

Predictive maintenance on legacy SCADA for a water utility, without touching the control system

Decades-old SCADA systems run critical pumping and treatment, with no predictive maintenance and incidents handled by hand. Wexa built a read-only retrofit: a gateway that reads tags, detects faults, remembers past incidents in the graph and raises approved work in the service-management tool.

5

sites modelled: treatment works and boosters

5

fault types detected (bearing wear, fan seizure, radio drop, valve stiction, main burst)

4

action tiers, from record-only to approval-gated

0

changes to the legacy HMI or control loop

CLIENT

UK water utility (treatment works and pumping estate)

REGION

UK

WHEN

2026

ENGAGEMENT

Solution build

WEXA COMPONENTS

Wexa memory layer (graph DB) · edge model · ITSM integration · tiered approvals

01 — CASE 18

The challenge

- Legacy PLCs, RTUs and HMIs over Modbus and DNP3; no analytics
- Operational data siloed from IT service management
- Safety: AI must never sit in the control loop

What Wexa built

- ✓ Read-only gateway polling tags, running detectors and writing graph memory (sites, assets, tags, readings, alarms, failure modes, incidents, actions)
- ✓ Edge language model explaining detections using recalled past incidents and remaining useful life
- ✓ Incidents raised in the ITSM tool on the right configuration item; approval flows return only allow-listed actions

- ✓ Action tiers: record; auto-notify; approval in the ITSM tool; advisory only. PLC-enforced bands are the final authority

02 — CASE 18

How it runs on Wexa

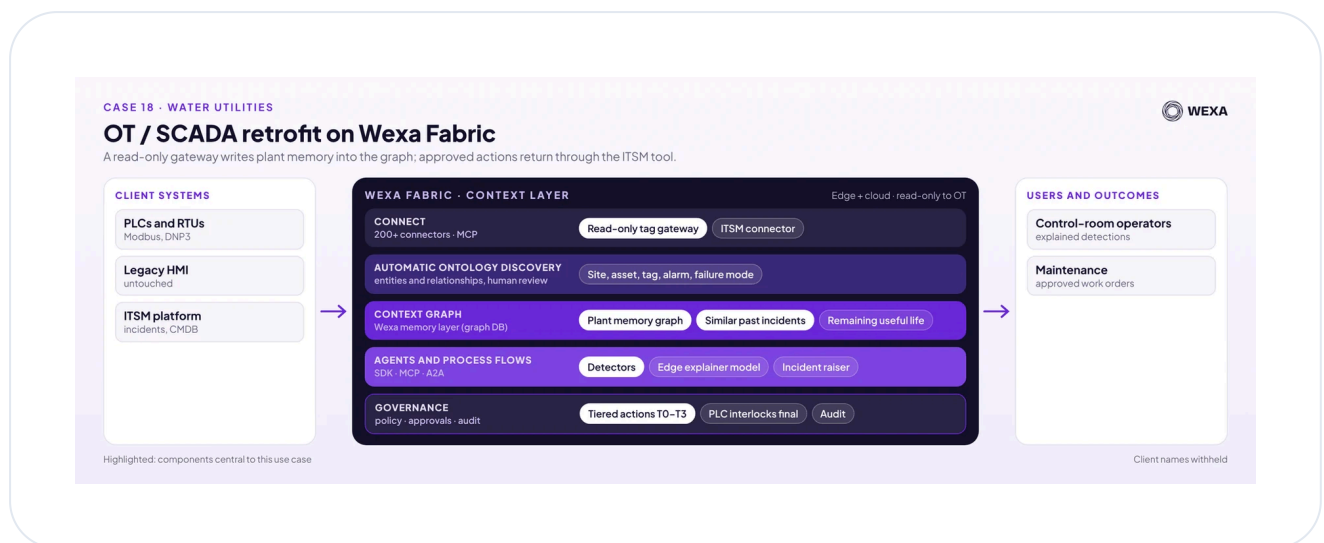


FIGURE How this use case runs on Wexa: client systems connected, ontology discovered, context graph in the Wexa memory layer, agents and process flows, and governance. Highlighted components are central to this use case.

Retrofit wiring

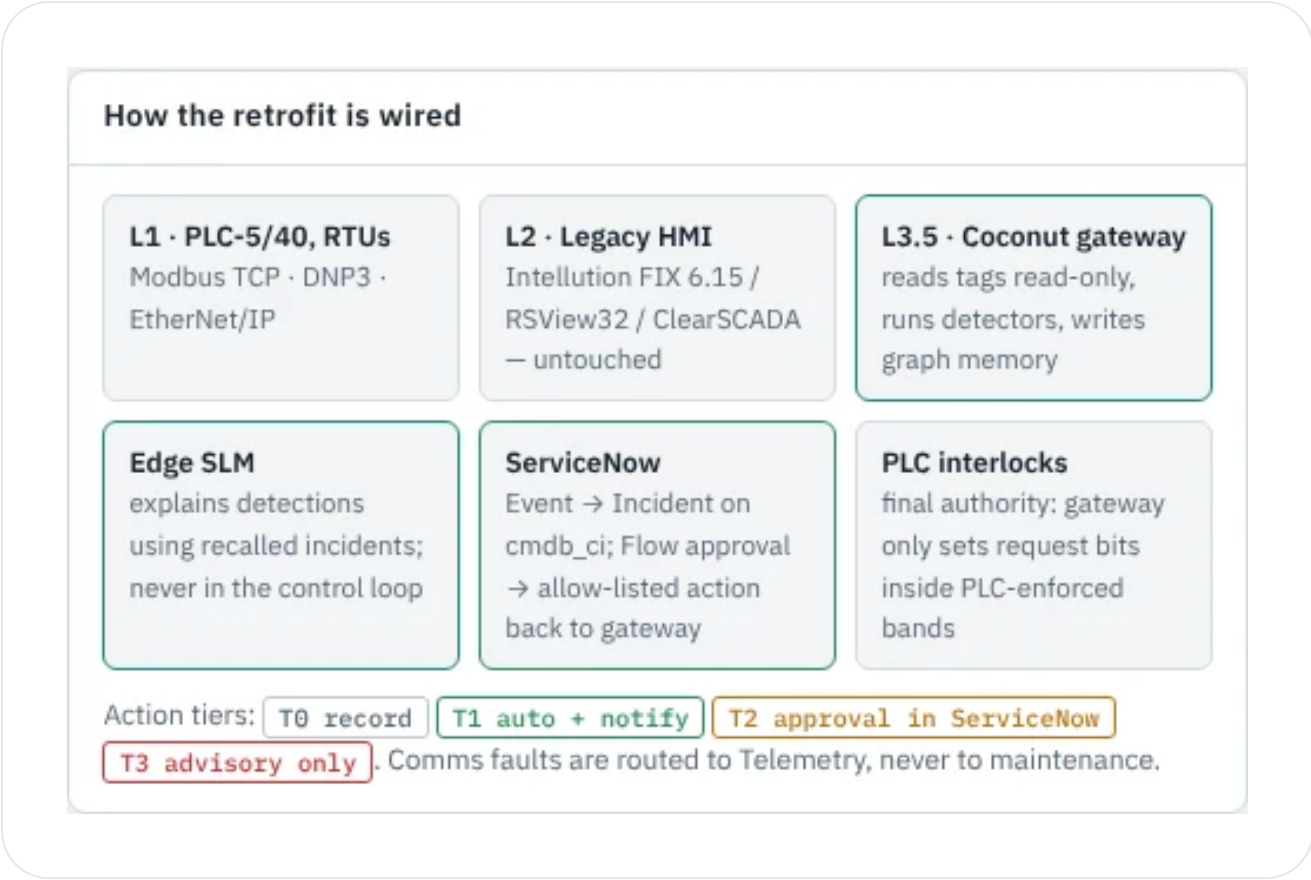


FIGURE How the retrofit is wired: PLCs and legacy HMI untouched; the gateway writes graph memory; the edge model explains; approved actions return through the ITSM tool (product screen).

Results

MEASURE	BEFORE / WITHOUT WEXA	WITH WEXA
Unplanned pump and asset failures per year	12 failures	4 failures
Annual cost of the process	\$1.8M	\$600K
Time to implement the AI solution	6 months	8 weeks

MEASURE	BEFORE / WITHOUT WEXA	WITH WEXA
AI build cost (one-time)	\$480K	\$59K
AI operating cost per year (models, infrastructure, upkeep, platform)	\$312K	\$166K
Total AI cost in year 1	\$792K	\$225K

WITH WEXA

\$1M

net annual value to the client after Wexa's
own operating cost

3x

faster to implement

47%

lower AI operating cost

\$567K

less AI spend in year 1