The completely overlooked but drastic budget savings municipal water authorities could be making with this one simple IIoT application
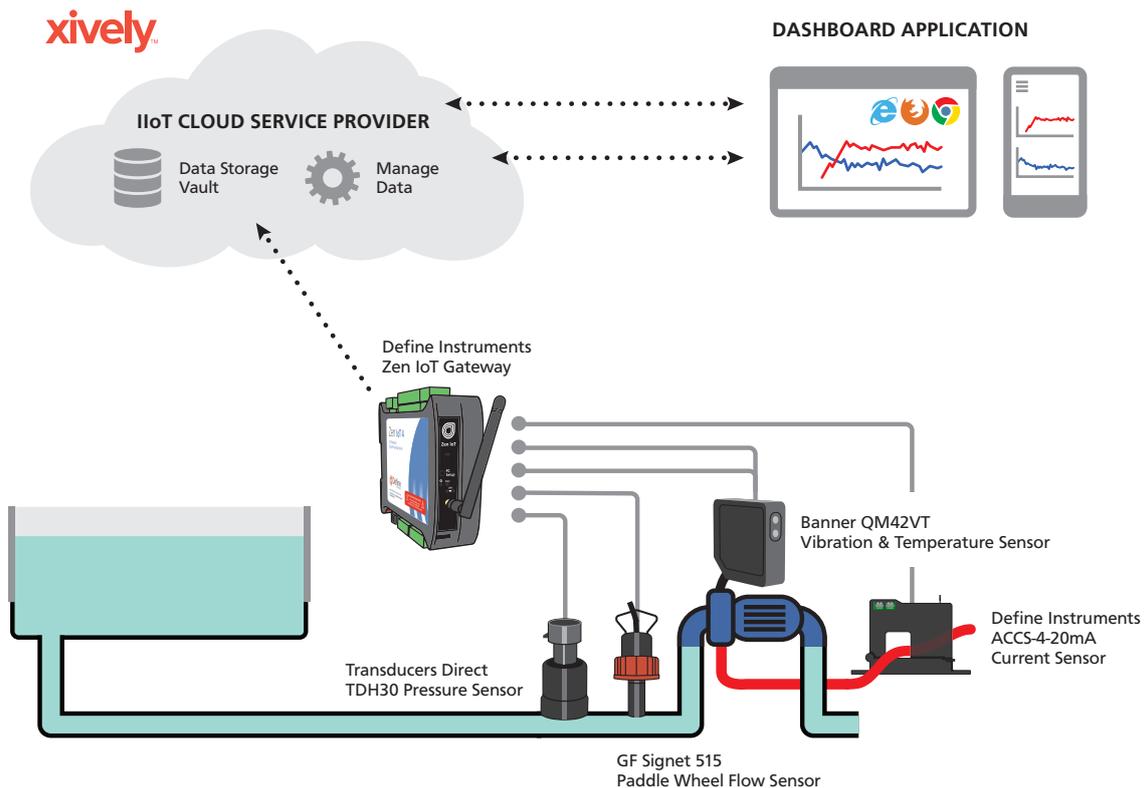
In this white paper you'll discover how massive savings are possible for city water departments across the United States with an IIoT application in a water pumping station. We've even broken down the costs of the required hardware.

The system

Our system is a simple pump connected to a water tank, much like you have in your city.

The sensors currently monitoring this system are as follows:

- a pressure sensor in the water pipe
- a flow sensor in the water pipe
- a vibration and temperature sensor placed on the pump
- a current sensor measuring AC current into the pump

The difference

The difference is that signals from these sensors are fed into the Zen IIoT gateway which publishes this data to the Cloud.

The cost savings

The significant cost savings lie in the vital insights this data affords you (which we'll dive into in a moment.) Futhermore, access to this data is not limited to human members of your department but can be fed to other business enterprise systems (e.g. a CRM or ERP) and/or machines for maximum benefit.
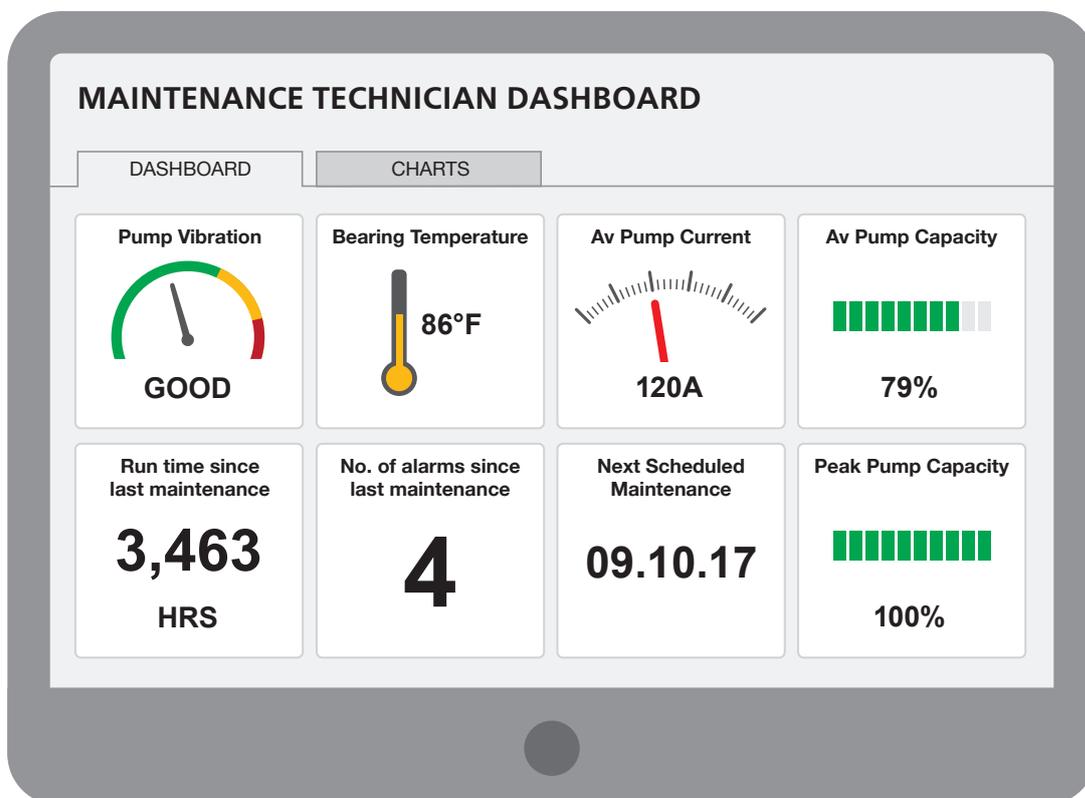
The application

In this example we are going to build a web-based dashboard (a series of web pages) to help your team of maintenance technicians.
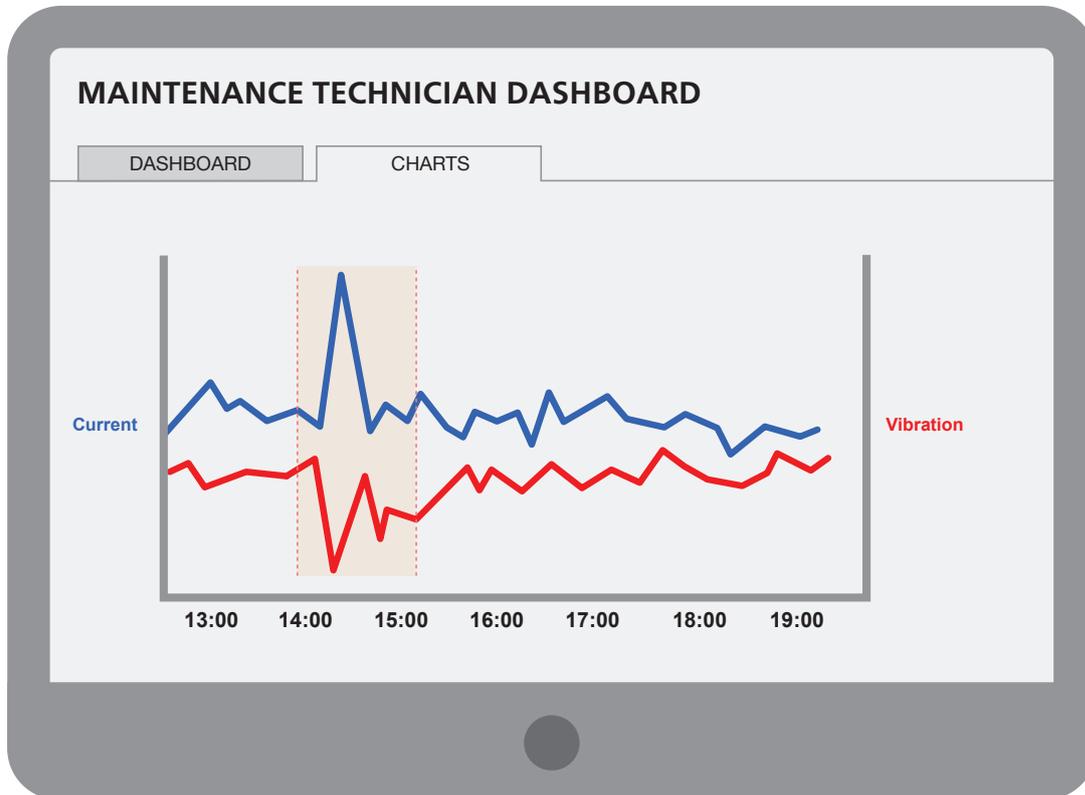
These web pages can be accessed at anytime, from anywhere (internet access permitting) by anyone who has the relevant credentials.

Connecting via an API to the sensor data in the Cloud, live values from each of the sensors can be "fed" to the web page dashboard to provide an at-a-glance overview of the system.

Viewing this page gives the maintenance team a good insight into the health of the pump. Furthermore, the pump is monitored 24x7, capturing any faults that may occur.

MAINTENANCE TECHNICIAN DASHBOARD

| DASHBOARD | CHARTS |

| Pump Vibration | Bearing Temperature | Av Pump Current | Av Pump Capacity |
| GOOD | 86°F | 120A | 79% |

| Run time since last maintenance | No. of alarms since last maintenance | Next Scheduled Maintenance | Peak Pump Capacity |
| 3,463 HRS | 4 | 09.10.17 | 100% |

Any specific times of interest can be investigated by clicking the charts tabs and looking at the historical data.

MAINTENANCE TECHNICIAN DASHBOARD

DASHBOARD	CHARTS

Current

Vibration

13:00   14:00   15:00   16:00   17:00   18:00   19:00

Make savings on the cost of site inspections and troubleshooting

Money can be saved by reducing the number of site inspections by technical staff. For remote sites this can be a substantial saving, because of the complete removal of the added costs of travel, accommodation and expenses.

Make savings on the costs of routine maintenance

Currently routine maintenance is carried at regular intervals but those intervals are based on "best-guesses". In some cases certain hardware may not even be close to the level of wear and tear that requires them to be replaced. Nevertheless, all parts are replaced as a matter of policy.

Utilizing the IIoT allows maintenance to be scheduled more accurately (and possibly less frequently) based on real data from the components.

Make savings on the costs of downtime and failure

By monitoring trends in the data, maintenance can be scheduled and cost of failure/downtime can be eliminated.

For example: if the bearing vibration and temperature change from satisfactory to unsatisfactory, bearing replacement could be scheduled before failure occurs.

Planning for the future

Keeping an eye on capacity is also be useful for planning and design purposes and more capacity could be added before it becomes urgent and essential.

Investigation into incidents like motor trips could identify what caused them and become the basis for plant wide strategies to eliminate them in the future.

Your Shopping List*

GF Signet 515 Rotor-X paddlewheel Flow Sensor	$297
Transducers Direct TDH30 Series Pressure Sensor	$93
Define Instruments ACCS-4 20mA Current sensor	$60
Enclosure and Power Supply	$150
Sure Cross QM42VT Vibration Sensor, Temperature Sensor	$225
Define Instruments Zen IoT Gateway, Wifi Unit	$1,258
TOTAL INVESTMENT	**$2,083**
Ongoing Monthly cost for Cloud Provider Xively:	$8

Retail one-off pricing shown, your department will likely get better pricing on these items.

The advantage of IIoT is a no-brainer. Act now.

With a few simple steps and a modest investment, the system is essentially future-proofed forever. The advantages of the insights the data delivers are priceless and assists with all manner of planning, scheduling, and even expansion and future business growth.

Learn more about how to achieve your cost saving IIoT advantage, talk to Define Instruments today

To arrage a consultation, call us on 1-888-652-4757
or email: sales@defineinstruments.com

www.defineinstruments.com