

# Port of Townsville Communicates Results of Water Quality Monitoring Programs in Real Time

eagle.io Helps Port Validate and Share 19 Parameters from 15 Data Sources for Weather and Water Quality

The Port of Townsville (POTL) uses eagle.io to communicate the results of water quality monitoring programs with stakeholders in real time. They are able to validate and share 19 parameters from 15 data sources for weather and water quality – all published in three real-time dashboards. Recently, POTL received a highly commended Daily Cargo News award for their operations.

Elaine Glen, acting manager of environment and planning, and Naomi Smith, the Port of Townsville lead environmental technician, explained the challenges POTL faced collecting and communicating environmental data.

"[Using eagle.io] we can now get environmental information out there in real time to our stakeholders and operators who rely on it," said Glen.

Port of Townsville manages the largest multipurpose cargo port in Australia. Each year around 8 million tons of cargo travel through it. Their environment and planning team monitor and communicate conditions in Cleveland Bay, including wind speed, wind direction, currents, and tides, to their marine pilots so they can safely dock ships in the port. They also monitor water quality compliance, such as electrical conductivity and turbidity, for government regulators, as well as weather conditions for local community stakeholders.

## SENSITIVE ENVIRONMENTAL LOCATION

The port is located within the Great Barrier Reef World Heritage area, and as part of their environmental stewardship POTL has undertaken extensive environmental monitoring for over 20 years. Through regular community engagement activities, they found that environmental protection is the number one interest among community members and stakeholder groups.

## DETERMINING HOW TO COMMUNICATE REAL-TIME DATA TO STAKEHOLDERS

Since 2017, POTL has been implementing real-time monitoring technology in several environmental monitoring programs, including weather and water quality. The challenge was finding a way to best communicate real-time data to key stakeholders.

Another challenge they faced was managing different stakeholder interests. "The environment and planning team at the port were challenged with communicating real-time environmental data to the community and internal operators in the port," Glen said. "Previously the team spent hours manually collating data into spreadsheets then uploading graphs into dashboards via the port's website, often requiring the involvement of internal departments."

They also faced challenges and difficulty with sharing data in real time. "We needed to be able to manage the monitoring programs from the setup of the equipment to maintenance and calibration as well as the communication of a tremendous amount of real-time data in an easy-to-understand real-time dashboard," said Glen.

## REAL-TIME DASHBOARDS THROUGH AN EASY-TO-USE ENVIRONMENTAL SENSOR PLATFORM

The environment and planning team at Port of Townsville knew they needed to find a platform that they could use to help them monitor and communicate real-time environmental data to their community and stakeholders. They needed an easy-to-use solution that enabled the team to manage environmental sensor data entirely in house, without the involvement of internal IT departments, or external consultants.

## PROJECT SUMMARY

### ORGANIZATION

Port of Townsville

### SOLUTION

Water Monitoring

### LOCATION

Townsville, Queensland, Australia

### PROJECT OBJECTIVES

- ◆ To find a way to best communicate real-time data to key stakeholders.
- ◆ To implement an easy-to-use solution that would enabled the team to manage environmental sensor data entirely in house without involving internal IT departments or external consultants.

### PROJECT PLAYBOOK

eagle.io™

### FAST FACTS

- ◆ Port of Townsville (POTL) uses eagle.io to communicate the results of water quality monitoring programs with stakeholders in real time.
- ◆ Each year around 8 million tons of cargo travel through the Port of Townsville.
- ◆ The port is located within the Great Barrier Reef World Heritage area, and as part of their environmental stewardship POTL has undertaken extensive environmental monitoring for over 20 years.

### ROI

- ◆ Hours of labor saved as internal teams no longer had to manually collate data into spreadsheets and upload graphs into dashboards on the port's website.
- ◆ Improved safety by providing real-time wind speed and direction data to marine pilots so they can more precisely and safely guide 600 vessels into the port each year.
- ◆ Increased visibility and transparency of environmental data to the community, including 19 unique parameters from 15 data sources shared across 3 public-facing eagle.io dashboards.



“We can now get environmental information out there in real-time to our stakeholders and operators who rely on it.”

– Elaine Glen, acting manager of environment and planning, Port of Townsville

“We just needed one platform where all our real-time data could go that would give us the ability to do data validation, as well as complex calculations, and be able to make it publicly available on a dashboard. eagle.io fit the bill,” Glen said.

“The team looked at other platforms but none met their requirement of user experience and simplicity, which would give the environment and planning team complete management of monitoring programs from the sensors in the field to the real-time dashboards,” Glen added.

“It’s just so easy to use,” added Smith. “It’s all web based. It’s really intuitive and we can do in-house quality checks and data validation. I’ll go into the software, have a look at the data and validate within the system on that day.”

### MAKING AN IMPACT WITH EAGLE.IO

Since implementing eagle.io, the port is able to serve 700,000 community stakeholders in North Queensland with real-time dashboards of weather and water quality conditions critical to operations.

“We could have gone with an off-the-shelf database and plugged all the data in there and sorted it manually to do graphs and put that online,” Glen said. “That’s still a way to present it with the community, but what is nice about

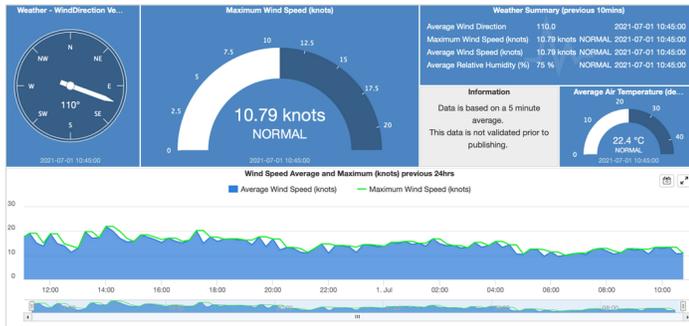
eagle.io is that it all happens in real time without a lot of manual handling from our side,” Glen added.

“The marine pilots hop on the ships at the end of the port’s channel and bring the vessel safely into harbor. For [the marine pilots] it’s really critical to know current wind speed and wind direction so that they can take it into consideration to bring large ships into the port safely. They get access to all this in real time with an internal eagle.io dashboard,” said Glen.

Local water enthusiasts, including kite surfers, have also found the data useful, logging thousands of hits to the public weather dashboard. As the weather sensor is located on the water and is updated every 15 minutes, it is also meeting a need in the community for this data.

“We recently received a highly commended environment award from the Daily Cargo News. Our application had multiple elements and featured our monitoring programs and the dashboards that we’ve been able to create and put out there.”

“Every step of the way, we have ownership of our environmental monitoring programs, from the sensors we put in the field, to the data from these sensors to the real-time dashboards that we create with eagle.io that we share,” Glen said.



Screenshot of POTL's Weather public dashboard.



POTL Monitoring Stations.



Screenshot of POTL's Water Quality public dashboard.



POTL Marine buoy with Xylem EXO and Gill Water Quality Sensors.