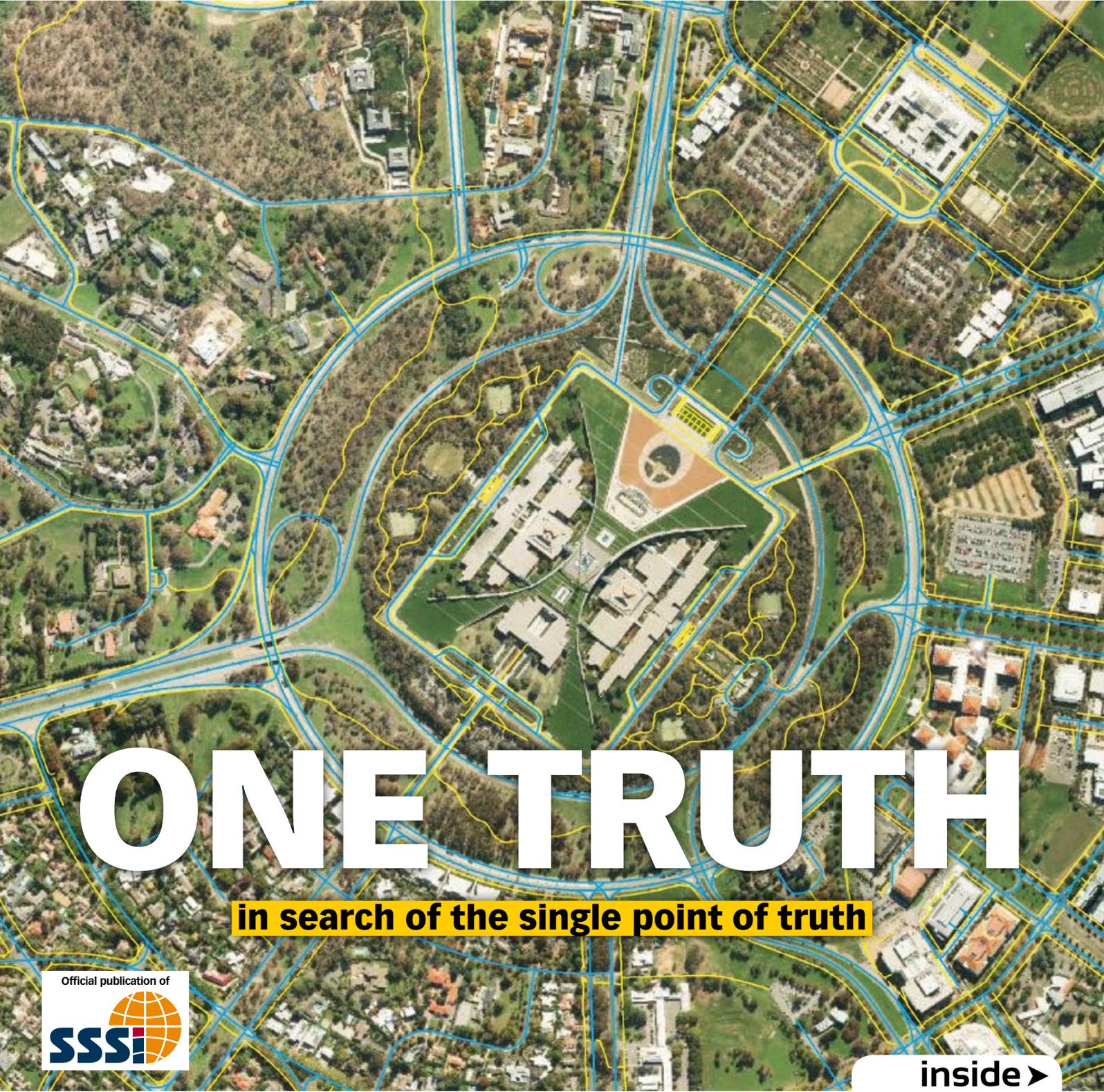


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# Putting all the assets on the Tablelands

How a regional council took GIS into the field and brought back benefits across its entire asset management portfolio.

**ANTHONY WALLACE**

In the far north of Queensland, just inland from Cairns, Tablelands Regional Council administers a region of tropical rainforest and lush highlands almost the size of Tasmania. Last year, conditions were hardly so picturesque when Severe Tropical Cyclone Ita struck the region, damaging roads and infrastructure, costing wider Queensland an estimated AU\$1 billion. In addition to the people affected, damage to private property and the impact on agriculture and industry, there was significant road damage, leading to 576km of closed roads and an estimated \$50 million in road repair work across the state. With cyclones, floods and heavy rains regularly hitting the region, it's critical for councils like Tablelands to have fast and reliable asset management systems in place to ensure public safety and timely repair.

## Limited window of opportunity

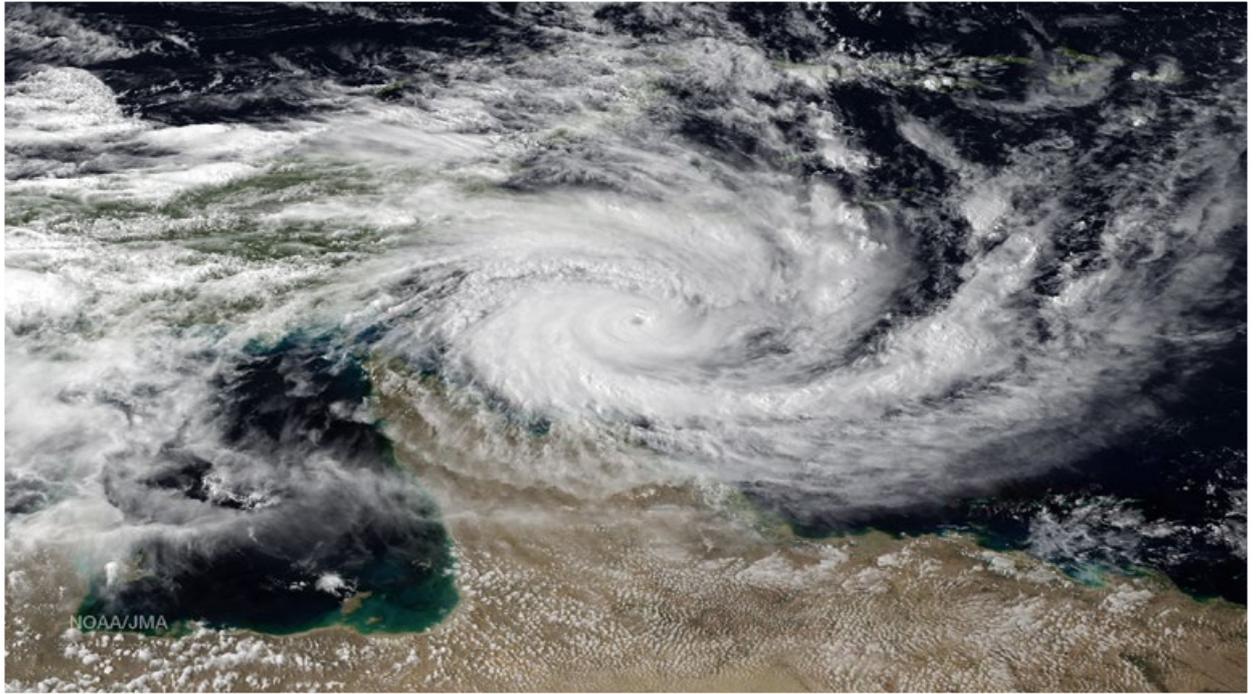
Like most regional councils, Tablelands has roads between towns that are maintained by the state, as well as local roads in urban areas that are maintained by the councils. When damage from a natural disaster occurs to the state-controlled roads, Tablelands Council can apply to the Queensland Reconstruction Authority to complete the required repairs through a scheme called the Natural Disaster Relief and Recovery Arrangements (NDRRA). When an event such as the 2014 Cyclone Ita occurs, Queensland councils have a limited window of opportunity to claim against federal funds to have damaged roads, bridges or any other infrastructure repaired. To receive the funding, however, councils must record the damage and

make applications for each repair within strict guidelines. No matter the total extent of the damage, council requires documentation and approval for every tree removed and every bit of gravel sheeting put onto a road.

The NDRRA permits a window of 60 days from an event for critical safety damage. That is, damage that could be a public risk, such as give-way signs that have gone, and road scours.

"The first 60 days are critical," said Tate Jones, manager of knowledge and systems at Tablelands Council. "After that, depending on the contract, you have up to two years for restoration work to repair roads back to their pre-event condition.

"When looking at how we could perform better road maintenance and how we could ensure we can maximise the funding after a natural disaster, it certainly makes a huge



**Cyclone Ita was classed as a category 5 severe tropical cyclone as it approached landfall with Queensland on 11 April 2014. Copyright: NOAA/JMA.**

difference if we can get the state to assist in a natural disaster, rather than ask the ratepayers to fund all of the repairs.”

### **Confirming the damage**

To maximise funding, the council decided to implement a real-time asset management system that streamlined the field reporting and application process.

The field recording procedure was previously completed manually or with very archaic systems, making the entire process an extremely time-consuming and expensive administrative process. Originally, staff would use a GPS camera to take photographs of the defects and try to take records on paper. This meant that often the council could not pinpoint where the photograph had been taken: staff would jump out of the car and take photos without the GPS having a locked position.

After going to tender to find a solution and a 3-month evaluation period, the council decided to adopt Pitney Bowes’ Confirm Enterprise Asset Management, as well as its mobile equivalent, Confirm Connect. Its initial deployment aimed to fulfil opportunities falling under both the NDRRA as well as the regular Road Maintenance Performance Contract (RMPC), however, it was set to expand across the management of all asset classes.

The council has used Confirm for the last two NDRRA events, Cyclone Ita as well as a recent significant rain depression. To perform the work, the council provides Confirm-enabled iPads to road stewards responsible for looking at the damage caused by the natural disaster.

Immediately after an event, road stewards use Confirm to record in detail the damage that has occurred. As soon as they take a photograph, a simple interface is used to record the type and severity of the damage. They simply select the type of defect, such as “sign missing,” “bridge railing disappeared” or “scouring of road” - all of the possible damages to road infrastructure. The final step is simply clicking a confirm button, which marks the completion of the admin work for that steward. Confirm can work offline, so the steward may spend time away from the Telstra network on 3G and transmit the data thereafter, allowing them to stay in the field to complete further work.

The information is received back in the office, and an application to claim for that damage is made to the state or the federal

government. Council staff and consultants then assess the safety of each site and determine if it qualifies as emergency works or restoration works against the NDRRA guidelines. Emergency works requiring urgent repair within the 60-day period are compiled into submissions, and applications are logged for future repair. To monitor ongoing changes and ensure maximum funding is achieved, it is critical that Tablelands Council has a fast and robust system that ensures road stewards are aware of the required accuracy of the information and the quality of the photos.

“When it rains here, we have a lot of rain, so we have to have detailed recordings,” said Mr Jones. “What could be a small pothole one week could be a massive depression in the road a few days later.

“All of the evidence is auditable. We feel confident we could see through an audit process. We see the benefits of Confirm a couple of years on. We have common areas and we take photos before and after, so if we have another event we can recall what defects we have repaired on this segment of road. If another event comes through, we can prove that the road was in a good condition before the event. It allows us to keep a good history on our roads.”

### **Asset overhaul**

Tablelands council now has 19 Confirm-enabled mobile devices, and is continuously finding new opportunities for its deployment in asset management tasks.

“At the moment, we are looking to expand the number of devices as we consider rolling out Confirm for our entire set of asset classes,” said Mr Jones.

“Doing so will allow Tablelands to review the condition of bridges and all other asset classes. We do our gates and grids. We do parks and gardens, and now we are looking at our own local road network, which is a large project. We are also using Confirm for facilities management, and have acquired data for almost all of the council buildings and other structures.

“A lot of this information will be going out to the public soon, such as bridge limits.”

Confirm is also used to support water meter readings, so that meters can be easily found and defects logged in an efficient and reliable manner. It’s also used for all weed spraying, and is able to manage how much solution is sprayed and the cost associated with the work.

“We have set up our contracts in Confirm, and the flow into our finance system such as gravel and labour,” said Mr Jones. “We have an SQL view within Confirm that compares the contracted costs for the defects against the activities in the finance system. Confirm knows what account numbers to compare against in the finance system, so we have real-time reconciliation. Therefore we can see if we are running losses on any contracts.”

Confirm was proven capable of handling the specific requirements for a regional council like Tablelands, including its own mapping system. In 2010, the council started using its own publicly available mapping system for all GIS operations, as available satellite and hybrid maps do not have all of the roads in the region. By integrating its custom mapping server with Confirm, it provides Tablelands’ field crews vital road information that does not exist in Google and Bing.

“This is important when people get lost when they are doing inspections,” said Mr Jones. “We have added additional layers to the maps to show parks and bridges. We have added this layer to Confirm so we can get more value out of the mapping system now. When people go to do a meter reading they know where to find the water meter, as Confirm will direct them. We are re-consuming information we have collected through Confirm.”

## Field staff doing what they do best

For the first year and half that Tablelands was using Confirm, it had dedicated GIS staff responsible for administering the system. It soon found, however, that there was rarely any work involved in



**Tableland Regional Council road steward using a Confirm-enabled iPad mini to report on road damage and repairs.**

keeping Confirm up and running. Instead, a position called ‘GIS asset officer’ was created, which involves configuring Confirm and dealing with the useful outputs from Confirm into the corporate GIS systems. All of the Confirm outputs are MapInfo compatible, so data is seamlessly integrated. Thus, the GIS asset officer’s main duties involve working closely with the asset manager on asset strategy, and ensuring the right attributes are collected within the necessary requirements.

Tablelands currently has Confirm installed on 19 devices, including iPads, iPad minis and iPhone 6 plus. The choice to settle on Apple products was because Tablelands had struggled to get the protective covers for the existing Android handsets. All of these devices allow field crews to use calendars and email on the devices, meaning administration tasks can also be completed in the field.

By performing its asset management with Confirm, Tablelands is also seeing a change in how it deploys personnel, making them more efficient and valuable council employees. In addition to the road stewards, the council employs maintenance officers who are responsible for varied asset management tasks.

“When they go past the asset, they know if it is due for inspection,” said Mr Jones.

“We are trying to change our workforce, where resources can carry out many different inspections so when they are out in the bush, they can take a Confirm mobile and carry out a multi-disciplined role out there, rather than having a person siloed.”

One of the most obvious benefits of moving to this system is of course the staffing benefits. For example, the RMPC claims now require one staff member to spend two to three days a week to perform claims, whereas previously, there were two full-time staff dedicated to working on claims.

“You can keep your field staff out in the field doing what they do best, and that is their work responsibilities: performing inspections, reviewing quality of work completed, or actually performing repairs,” said Mr Jones.

“Keeping them out there as much as possible is really important; having them come back into town to prepare for the next job is just too expensive. Every time they decide to jump in the vehicle and drive to the depot, they are looking at a minimum half an hour drive to come back, to a computer that they are not very familiar with using.

“Our best bet is to keep them out there and perform the majority of their work in a mobile fashion.” ■