

**TORO**

▶ 4G

▶ WIFI

▶ MULTI-SENSOR

▶ PRESSURE TRANSDUCER

TEMPUS-AG-MV

▶ MASTER VALVE

TEMPUS-AG-MV

TEMPUS-AG-4G

▶ GATEWAY

▶ CONTROLLER UNIT

TEMPUS-AG-CT



# TEMPUS<sup>®</sup> AG

## CASE STUDY PORTFOLIO

## NARRANDERA COUNCIL

Narrandera Shire Council in NSW is the first Australian council to use battery controllers for central control of their irrigation. The council has installed a brand new Toro Sentinel Control system combined with a Tempus® Ag battery central control solution.

Council Parks Manager Roger Evans initial discussions with Michael Lenehan, Toro's Commercial Irrigation Sales Manager for NSW, were centered around Toro's Sentinel Central Control System to run the irrigation of the major sports fields and parks.

As Roger also looks after the towns of Barellan and Grong Grong, 50 km away in distance, he also needed a solution to look after smaller garden areas, including Barellan and Grong Grong town cemeteries. With no 240v power available at these sites they were irrigated by using 8 stand-alone battery controllers.



Thanks to the new Toro Tempus® Ag LoRa (Long Range) radio battery controllers, Roger and his staff can now control irrigation programming from their phone app or PC software in their office. If there is a week of heavy rainfall Roger is able to turn off his Tempus Ag system with the press of a button. Sending staff out to remote sites to turn off each battery controller individually and returning back at a later date to turn them back on is now a thing of the past.

Twelve Tempus® Ag 4G Gateways were installed in total across the council area. Some Gateways are connected to 240v power and in areas with no power available, the Gateways are powered by a 20w solar panel. The Gateways communicate to 60 Tempus Ag DC controllers at various sites. The controllers have a LoRa radio distance of up to 800 metres to a Gateway. Communication from the Gateways to the Narrandera Council office is cloud based.

The Tempus® Ag system is the perfect solution for the shire's irrigation control system as it can be run parallel to the Sentinel system. Overall, Narrandera Council has set up twelve Sentinel master controllers at major sports fields and parks and is using the new Tempus® Ag battery control system for all other sites that were once stand-alone battery controllers. In the next stage the council will start connecting their water meters into the system to measure their water usage.

Graeme Poole and the team at Watertek, Wagga Wagga were the irrigation dealer for this project.



# LONG RAIL GULLY WINES



Long Rail Gully Wines in Murrumbateman, NSW, is the first vineyard in Australia to install the new Toro Tempus® Ag wireless battery central control system. Growing various wine varieties on 165 acres, owners Richard and Petra Parker made contact with Toro Australia after seeing information on the new Tempus Ag LoRa system on LinkedIn.

The Parkers 25-year-old vineyard irrigation control system had its in-ground wires destroyed by wombats, and they were quoted over \$25,000 to trench and wire a new system.

After reading that the new Toro Tempus® Ag control system could be installed with no equipment and would cost 2/5 of the cost of the previously quoted system, the Parkers decided to get in contact

Michael Lenehan, Toro's Commercial Irrigation Sales Manager in NSW completed an audit on the vineyard's existing system.

Richard really liked that the Tempus® Ag system could be run via his PC, phone or tablet. The software and app were easy to use and with the in-field battery controllers having an 800m radio radius back to the Wi-Fi Gateway in his office, all his valves were quickly communicating. Michael says'



**“ The Tempus® Ag automation system can help growers be confident that they will spend less time setting up and maintaining their irrigation system and more time growing a healthy crop.**



Twelve Tempus® Ag 1-station LoRa radio battery controllers were placed at twelve 50mm field valves with DC coils. One Tempus® Ag battery controller is connected to a flow meter and another is connected to a fertigation pump. A Tempus® Ag latching pump relay is connected to the vineyard's variable speed pump.

A single Wi-Fi Gateway is used for communication to the Tempus® Ag field modules and the entire system can be run through a mobile app or computer. This is a major advantage to the Parkers as they are able to use their system from the comfort of their office or anywhere in the world. Irrigation supply was through Toro dealer a t Water in Bomaderry, NSW.

# BOOMERANG GOLF COURSE



Andrew Bradshaw, Superintendent of Boomerang Golf Course in NSW, was eager to find a solution for his problem: the manual activation of irrigation at the course's 18 greens and tees.

Boomerang Public Golf Course is an 18-hole course located less than 60 minutes south of Sydney CBD in Illawarra. With Bent Grass and Poa greens and Kikuyu fairways, it makes for a perfect application for Tempus® Ag for its Irrigation.

Enter Phil Harvey from Toro dealer Water Well Irrigation, who introduced him to the new Toro Tempus® Ag battery central control system.

Andrew was excited to explore the potential benefits for his course, this system could be the solution to his manual watering woes. Being a budget friendly system made the decision to install it even easier.



Water Well retrofitted the central control system to the existing irrigation setup at the course. They integrated 36 new valves with DC coils across the 18 greens and 18 tees. The Tempus® Ag controllers were placed with the DC valves and communicate by radio back to the Tempus Wi-Fi Gateway set up at the club house. The furthest battery controller located at a valve, has a radio distance of 640m to the clubhouse. From the Tempus® Gateway the communications to the Boomerang Club house are cloud based.

With the controllers installed in the valve boxes, Andrew and his team can now receive instant alerts when controller batteries are low, making maintenance of the system easy. The controllers are also IP68 rated, which gives the safety knowing that any water leakage into the valve boxes will not damage the system.

Thanks to this system, Andrew can now run his Tempus® Ag Irrigation control system from his computer as well as through a mobile app, eliminating the need for manual operation and saving time and effort, making his life a lot easier.



## CARRICK HILL

TORO®

Built in 1939, Carrick Hill is a publicly accessible historic property at the foot of the Adelaide Hills, South Australia. The historic 'Carrick House' is surrounded by 40-hectares of gardens. The presence of various lawns, gardens and roses made Carrick Hill a perfect application for Tempus® Ag.



The use of a single 4G Gateway powered by a solar panel allows the 25 field controllers to communicate back to the central location, with the furthest controller being over 1.0km away from the Gateway. The field controllers are powered by a single 9V battery, and are installed inside of valves boxes on Toro DC valves. Ryan Kemp, Grounds Manager at Carrick Hill, says



**Tempus® Ag allows my team and I to control the grounds irrigation from anywhere across multiple devices.**

The added benefit of the Tempus® Ag controllers is having the option of Bluetooth control when in the vicinity of the controllers. This allows Ryan and his team instant manual operation of controllers in the case of problem solving or maintenance on the irrigation system.

Ryan manages the Tempus® Ag system from his desktop computer and mobile phone, allowing both manual control and programming options remotely. With expansions to the Carrick Hill grounds currently underway, a second 4G Gateway will be installed to increase the number of controllers within the system.



# TEMPUS<sup>®</sup> AG



For remote system management, go to [MyToroTempusAg.com](http://MyToroTempusAg.com)



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