



Griffith Golf Club Irrigation System Refurbishment

Assessment against Socio-Economic Criteria as part of the Off-Farm Water Efficiency Program

April 2023

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Section 1: Overview

1.1. Project Summary

Griffith Golf Club is proposing a \$1.4 million project to upgrade the current golf course irrigation system. Installed over 35 years ago, the course irrigation system is subject to weekly breakdowns, resulting in high labour and maintenance costs. The current antiquated system is unreliable, inefficient, and ill-equipped to irrigate the course in the extreme evapotranspiration conditions experienced in the Griffith summer. Due to application inefficiencies, valuable water is often wasted with parts of the course over-watered at the expense of other areas. The proposal will deliver 64 ML of water entitlement to the environment, and involves the following works:

- Installation of approx. 15km main and lateral pipelines over a 54-hectare course
- Over 400 modern and efficient sprinkler assemblies
- Installation of irrigation pumphouse to provide reliable and efficient course supply
- Installation of 850,000L of course storage via 3 storage tanks
- Installation of a modern automated irrigation control system.

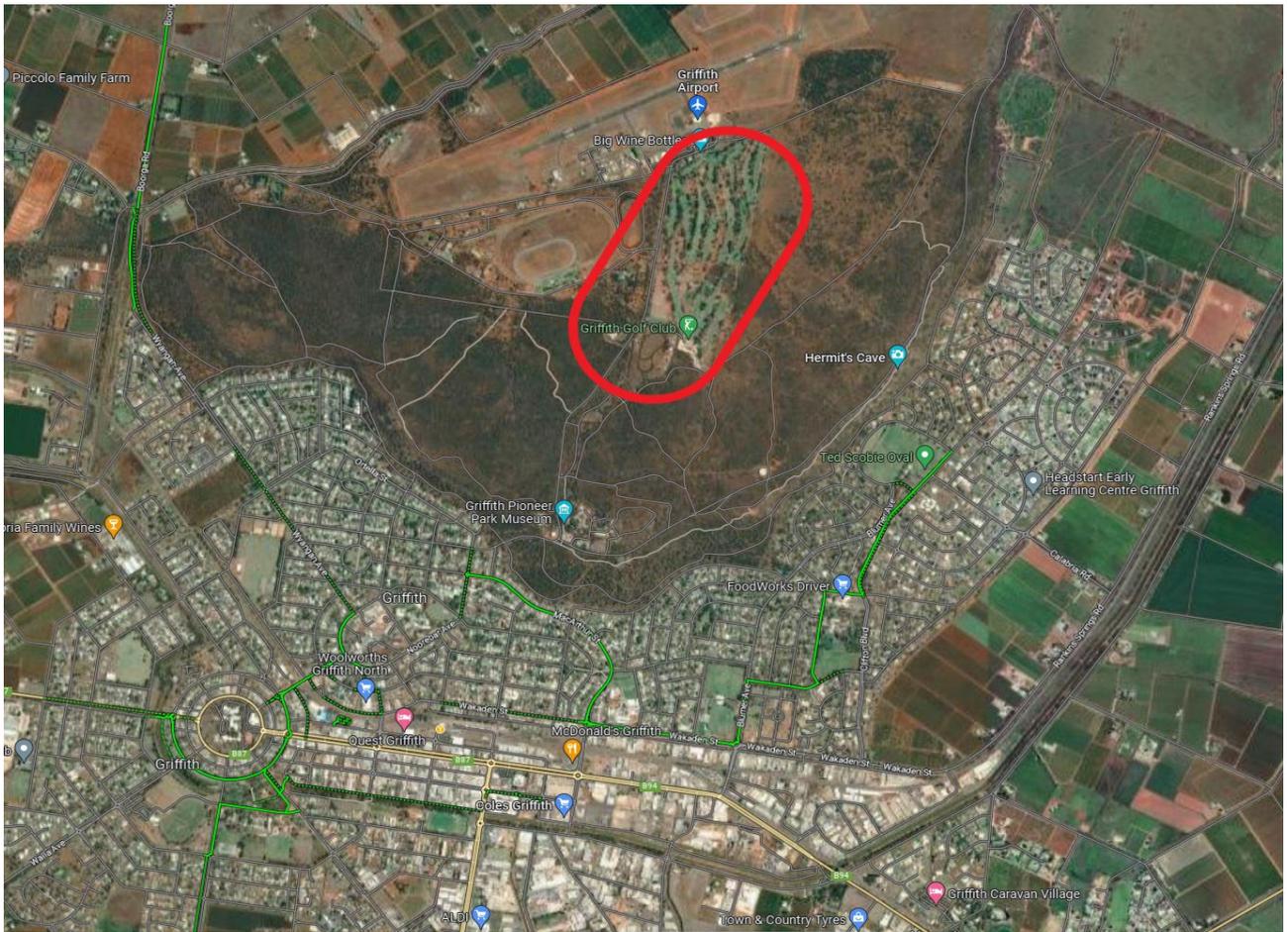
The project will provide valuable socio-economic outcomes, including:

- Economic benefits through construction and maintenance by using local contractors, suppliers, and specialists;
- Improved playing surface that will encourage community members and visitors, from juniors through to seniors, to enjoy the healthy, outdoor sporting activity provided by golf;
- Supports better use of club labour for activities other than irrigation operation and maintenance;
- High quality golf course attracting numerous visitors through many planned events, pro-ams, special events and normal weekend competitions bringing financial stimulus to Griffith through accommodation, meals, shopping, and other tourist activities;
- Unique environmental area with a wide range of birds, kangaroo, wallaby, and reptile species supported with activities including bird breeding boxes, vast green areas and native gardens and treed areas;
- Provide an attractive backdrop, thus making the Club's welcoming social facilities a sought-after venue for community events, such as weddings, birthdays, food fairs and professional training.
 - About Griffith Golf Club

Griffith Golf Club (GGC) is set on 54 hectares and is located on north of the township as represented in figure 1. The club has 660 memberships, employs five full time employees and six casual hospitality employees. The facility provides the town with opportunities for a social space for functions and weddings, charity days and corporate events. The memberships at GGC increased greatly during covid when golf was one of the few social sporting events that were permitted during the time under social distancing laws.

The clubhouse itself is freehold and owned by the GCC, the course surrounding the clubhouse is located on Crown land with Griffith City Council as the appointed Crown Land Manager. The course is widely used throughout the community with nearly 20,000 rounds of golf being played annually.

Figure1: Project location - Griffith



Section 2: Project Description

2.1. Project outputs at a glance



over 850,000 litres of onsite storage capacity



installation of a modern, efficient, irrigation management system



installation of 4 pumps to service 18 holes and fairways covering 54 hectares

2.2. Project Scope

Irrigation experts have advised replacement of the current existing irrigation system with a more efficient fully automated system. This includes replacement of pumps, valves and sprinklers, installation of a control system, as well as increasing on-course water storage with larger tanks. The recommendations address the following issues:

- Constraints in the supply of continuous water flow to the pumping system
- The inability of the existing pump system to maintain a consistent water pressure, resulting in sprinkler heads malfunctioning
- Regular breakdowns of the pumping system and high maintenance costs
- Poor application efficiency of water to the course, and uneven application of water to the course at times of peak evapotranspiration.

The proposed project requires a total investment of \$1.4 million and will include the following works:

- Installation of approx. 15km of main and lateral pipelines covering the 54-hectare course layout
- Over 400 modern and efficient sprinkler assemblies
- Installation of irrigation pumphouse to provide reliable and efficient course supply
- Installation of 850,000L of course storage via 3 storage tanks
- Installation of a modern automated irrigation control system.

2.3. Licencing and Approvals

The Griffith Golf Club course is on Crown Land administered by the Griffith City Council. The irrigation upgrade project will require Griffith City Council approval through their Development Application (DA) process. Landowner's consent will need to be obtained from Crown Lands as landowner of the reserve to enable a DA to be lodged. The DA process is not expected to require additional consents or special conditions as the proposed works are on cleared land. However, all licensing and approval processes will be confirmed with Council.

Section 3: Socio-Economic Criteria

3.1. Preparing for the future

The long-term Vision of Griffith Golf Club is to be an active contributor to the health and well-being of the local community; attract large numbers of visitors through events, special days, and regular competitions; support local charities and mental health initiatives; support the multi-cultural diversity of the Riverina; and provide an environmentally safe place for the many local flora and fauna.

Without a new irrigation system, the harsh regional climate will result in significant deterioration of the course, membership decline, a drop off in casual use, fewer function bookings, fewer opportunities for charities. Ultimately this will result in the club becoming unviable and posing the risk of the vibrant city of Griffith losing a pre-eminent sporting facility.

Modern irrigation practices involve applying water more precisely, at higher flow rates and for shorter lengths of time to limit evaporation and seepage losses below the root zone and provide optimum growing conditions. The long-term benefits from the irrigation upgrade include better water efficiency and course health which contribute towards improved economic, social, and environmental outcomes for the Griffith area.

3.2. Benefits to industry

The project will be fully implemented using local contractors, suppliers, and equipment. It is anticipated that 100% of the materials, labour and other resources will be sourced from within the city of Griffith, or close surrounds, providing significant benefit to local industry during the construction phase.

The Griffith Golf Club is an integral part of the local tourism effort. The improvements to the course will enable the golf club to attract more events, and lead to greater visitor player/general numbers. Increased course usage will provide economic stimulus to the town through accommodation, meals, cafes, shopping, and other tourist activities.

Current events including the Corporate Cup, Griffith Open Scrambles bring in players from Newcastle, Sydney, Wagga, Shepparton, Melbourne, and the surrounding Riverina area. The veteran's week of golf brings in up to 100 visitors from NSW and Victoria. A more efficient watering system will enable increased and extended events as course condition can be maintained and course management can be completed without impacting event play. Event management will also be better managed through the utilisation of extensive night watering rather than day and night which impacts on the playability of the course.

The club is also used for weddings, birthdays, celebrations, and local business events. Further improvements to the course will provide greater opportunity to expand events and increase the flow on economic benefits to the region and city of Griffith.

Additionally, the course attracts people from South-West NSW and North-West Victoria for weekend golf competitions. Weekend competitions and social play bring hundreds of visitors to the area injecting money into a variety of local businesses.

3.3. Benefits to community

Water is a precious commodity in the irrigated agriculture area of Griffith and there is high expectation from the community for responsible and efficient water use. The installation of an upgraded irrigation system will enable the Club to meet these expectations.

The community expects its major sport and recreation facilities to be of a high and sustainable standard. To ensure that the golf course is always playable and accessible, not just for golfers but for other groups and individuals planning functions and other non-golf related events, it is essential that the irrigation system be upgraded.

The realisation of this project will enable the club to enrich its strong connection to the community, including schools, Griffith City Council, as well as numerous social, charitable, and educational organisations. For example, many students from Murrumbidgee Regional High School attend weekly coaching clinics (conducted by the club's professional trainers).

In addition, the course is extensively used during drought times to support the mental health and welfare of farmers from across the South-West of NSW. Many farming associations including cotton, nuts, rice, and others have events during harsh times to support their farming base to improve both physical and mental health. A course in good condition utilising best irrigation principles will be highly regarded by our farming community.

Griffith Golf Club is guided by Council's Community Strategic Plan "Guiding Griffith 2040" which sets out a range of community needs and goals, including having an inclusive community structure for people of all ages and cultural, religious and/or ethnic backgrounds. Embracing this vision has resulted in a significant increase in the number of people from a wide array of ethnic backgrounds making use of the 18-hole course and driving range over the past 2 to 3 years.

Over the same period there has been an increase in community organisations and others using the course and facilities. For example, food markets, functions (weddings, birthdays, engagement parties) have been hosted by the Club and numerous charitable organisations (Riding for the Disabled, Cancer Council, Cystic Fibrosis) hold fundraising events at the Club.

3.4. Environmental benefits

The Griffith Golf Course has a range of birds, kangaroos, wallabies, and reptiles that call the course home. Tree and garden planting have been used to support local wildlife and improved irrigation will enable greater plantings to support the wide range of native flora and fauna, and further increase the biodiversity.

A significant cost and environmental issue for Griffith golf club is weed management, that is currently extensive due to the many bare areas as a result of poor irrigation and lack of plant competition. Improved irrigation systems will promote desired species, thus increasing competition and reducing the presence of weeds and further reduce the need for herbicides, pesticides, and fertilisers.

A recent program putting up bird boxes around the course is another way the Griffith Golf Club is supporting the local wildlife of the area. The new system will allow the installation of bird water access points supporting the local animal and birdlife. The new system installed through the project will ensure a resilient refuge for flora and fauna and mitigate the current and future impacts of climate change. This value is further enhanced by the surroundings of the golf club being large areas of public lands of native vegetation meaning the golf club grounds will become a crucial wildlife corridor.

These works will also provide 64 ML of water entitlements to be delivered to the Commonwealth Environment Water Holder as water for the environment.

3.5. Supporting the Murray Darling Basin Plan

The modernisation of the Griffith golf club irrigation system will support the plan by promoting a strong and vibrant community with sufficient water of a suitable quality for recreational purposes.

The plan requires all water users to be more efficient and resilient with their water use. Whilst the main focus has been on farmers and irrigation corporations, all water users need to demonstrate a commitment to the plan to enable the triple bottom line of environment, productivity, and socio-economic outcomes.

This project supports all three with water returned for the environment and improved local environmental outcomes, water being returned from non-productive use supporting the productive users and significant socio-economic benefits outlined in the proposal.

By creating water savings that are returned as water for the environment the project supports the Murray Darling Basin Plan.

3.6. Cultural impacts and benefits

As highlighted previously, the project is aligned with Griffith City Council’s Community Strategic Plan “Guiding Griffith 2040”. In particular, the Strategic Plan seeks to continue to grow Griffith in terms of increased population and number of visitors, providing a suitable range of cultural facilities, and engendering a socially inclusive community.

Griffith has an increasingly diverse array of cultural backgrounds. 2021 Census data showed that the most represented overseas countries of birth were India, Italy, New Zealand, Philippines, Malaysia, Pakistan, United Kingdom, Fiji, and Pakistan. Furthermore, number of persons born overseas currently residing in Griffith has doubled when compared to 2016 Census data.

Griffith has a strong Aboriginal community as part of the Wiradjuri nation. The strong connection between the Griffith Golf Club and local Aboriginal support groups will be strengthened through greater participation and programs to support aboriginal outcomes and reconciliation.

The increased cultural diversity has been reflected in the increased use of the club’s facilities. This project will create facilities that allow for the continued uptake of golf in multicultural users, thus further fostering social cohesion and connectedness within the community.

3.7. Community support and engagement

In developing the Project, Griffith Golf Club has engaged with key stakeholders to identify their specific needs and how they would benefit from the Project. These are summarised in Table 2.

Table 2. Stakeholder groups.

Stakeholder Group	Specific Needs and How They Will Benefit
Griffith City Council	Economic activity generated by a viable golf course Tourism resulting from golf A course that improves users physical and mental health A viable community sporting and social hub

Stakeholder Group	Specific Needs and How They Will Benefit
Men's & Women's Golf Griffith	<p>A high-quality course that attracts locals and visitors to play in hosted events</p> <p>A water efficient irrigation system that provides a playing surface that is always accessible</p>
Griffith Veteran Golfers	<p>A water efficient irrigation system that provides a playing surface that is always accessible</p> <p>A gold course that encourages more senior citizens to play golf and experience the physical and mental benefits</p>
Local Aboriginal Groups	<p>Course is used by many local Aboriginal groups to support healthy living and lifestyle outcomes</p> <p>Membership includes many Aboriginal members</p>
Griffith Riding for the Disabled	<p>A high-quality golf course that encourages community members to support the fundraising events they hold at the course</p>
Murrumbidgee Regional High School	<p>A viable golf course that employs a professional to provide lessons to students</p>
Local businesses	<p>A high quality course provides an excellent event venue for hosting supplier, customer, and staff days</p>
Local farming groups	<p>The course is used extensively during dry times to hold events to support the mental health and welfare of people, on the land</p> <p>An efficient watering system will support the course condition during these times</p>

3.8. Strategic partnerships

The Club has active and long-standing strategic alliances with parties that have expertise in irrigation design and efficiency, irrigation infrastructure and turf grass management. These parties include:

- Water Wise Consulting
- TORO (a specialist golf machinery and equipment company)
- Murrumbidgee Irrigation Limited (the local water supply and delivery authority)
- Water Tek (a local company specialising in water management and equipment)

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- Irribiz (a local company specialising in water management and equipment)

These parties assisted the Club in planning this project to ensure it delivers maximum water use efficiency, has realistic and achievable timelines, and provides value for money invested.

The Club also has very active partnerships with:

- Griffith City Council, Manager of Crown Reserve 83395 where the golf course is located (the Clubhouse is located on freehold land owned by The Club). The Club regularly collaborates with Council on matters regarding water supply, tourism, relevant approvals, and general issues regarding maintenance advice connected to club facilities.
- Murrumbidgee Regional High School regarding healthy sporting options for young people in the community
- Local charities such as Riding for the Disabled, the Cancer Council, and Cystic Fibrosis Australia who we continue to assist and support in their fund-raising activities

3.9. Positive Economic Outcomes

3.9.1. Management of future lifecycle costs

The refurbished irrigation system will be operated and maintained by the Griffith Golf Club. Future operations and maintenance costs will be lower than that of the current system and will be funded through the collection of course 'green fees' paid for every round played on the course. The additional benefit of increased visitation and local participation, hence greater course rounds will enable the GGC to improve the profitability of the club creating retained earnings that will be used for future replacements and upgrades as required.

The Course Superintendent will have responsibility for:

- Operation of the irrigation system in accordance with training provided by the system suppliers
- Scheduling course irrigation based on evapotranspiration demand (presently unachievable due to the age and limitations of the current system)
- Application of irrigation water during night-time hours to maximise efficiency and avoid disruption to course users
- Logging water application and energy usage
- Instituting a pro-active maintenance system to maintain operational efficiency of the system and extend system longevity (maintenance is currently reactive due to the age and poor condition of the system)
- Providing reports to the Club Board on water and energy use efficiency.

In consultation with the system supplier, the Club will develop asset management plans that will allow for budgeting, maintenance requirements and any upgrading costs necessary to maintain and/or improve operational efficiency of the system. The lower operational and maintenance hours achievable with the new system will allow for the redirecting of staff and volunteer time to course management/improvement activities such as fairways/greens mowing, weed control, sprinkler head maintenance and gardening.

3.9.2. No impacts to the water market

These works will provide water savings by reducing irrigation inefficiencies. There will be no reduction in the amount of water available for consumptive use. This ensures there are no negative impacts on current water allocation for other water users.

Drainage of the water from the golf course will flow into the town's stormwater drains and support the Integrated Water Cycle Management Plan developed by Griffith City Council. The plan ensures a secure, reliable, and sustainable urban water system into the future by planning water supply in an integrated way to ensure water is used efficiently.

3.10. Water savings shared between the environment and water users

Water savings were calculated based off average water use in the past 5 years. Griffith Golf Club has used an average of 205 ML/year between 2017-18 and 2021-22 seasons. Based on literature review of water use efficiency savings achieved from irrigation system improvements, discussion with suppliers about estimated savings, and review of current system inefficiencies, it was estimated that a 35% reduction in water use would be achieved through the irrigation infrastructure upgrade. With a future estimated water use of 133 ML/year, this results in a saving of 71 ML/year.

The Project's water savings are generated by reducing losses throughout the golf course irrigation infrastructure, as well as increasing the application efficiency of water applied to the course.

The water savings are shared in alignment with the principle that the region is in a "net" better position with respect to socioeconomical outcomes because of completing the project. The project will provide 71 ML of savings per year, of which 90%, 64 ML, will be returned to the Commonwealth Environment Water Office (CEWO) as water for the environment. Overall 30ML of High Security (HS) and 59ML of General Security (GS) will be returned to the CEWO.