



Griffith Golf Club Irrigation System Refurbishment

Assessment against Socio-Economic Criteria as part of the Resilient Rivers Water
Infrastructure Program

May 2025

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Section 1: Overview

1.1. Project Summary

Griffith Golf Club is proposing a \$2.65 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 irrigation inefficiencies, valuable water is often wasted with parts of the course over-watered at the expense of other areas. The proposal will deliver 103 ML of water savings to the environment, consisting of 30 ML of Murrumbidgee High Security water and 124 ML of Murrumbidgee General Security water, and involves the following works:

- Installation of approx. 5km main and 21km lateral pipelines over a 54-hectare course layout.
- Over 940 modern and efficient sprinkler assemblies.
- Installation of irrigation pumphouse to provide reliable and efficient course supply.
- Installation of 1,000,000L of course storage via 2 storage tanks.
- Installation of a modern automated irrigation control system.

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

- 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;
- 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.
- Economic benefit through construction and maintenance due to use of all local contractors, suppliers and specialists.
- 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.
- Attracting members of our ethnically diverse community to use the course and Club facilities;
- Provide an attractive backdrop, thus making the Club's social facilities a sought-after venue for community events, such as weddings, birthdays, food fairs and professional training;
- Enhanced economic benefits to the community by attracting more golfing visitors to the region and the flow-on effects of purchasing goods and services;
- Local business events for staff, customers and guests;
- Water savings resulting in increased security of water to towns and industry;
- Allow retirees to volunteer labour to be utilised in more productive activities.

1.2. About Griffith Golf Club

Griffith Golf Club (GGC) is set on 54 hectares and is located 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 Griffith Golf Club, and 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. Visitor rounds total 3400 per year with special events and event days averaging nearly 2500 rounds per year.

The fairways are lined with a vast array of native trees and home to many forms of wildlife with kangaroos almost always on the course, while a big array of birdlife can be seen in the native trees.

Figure 1: Griffith Golf Club location in Griffith region

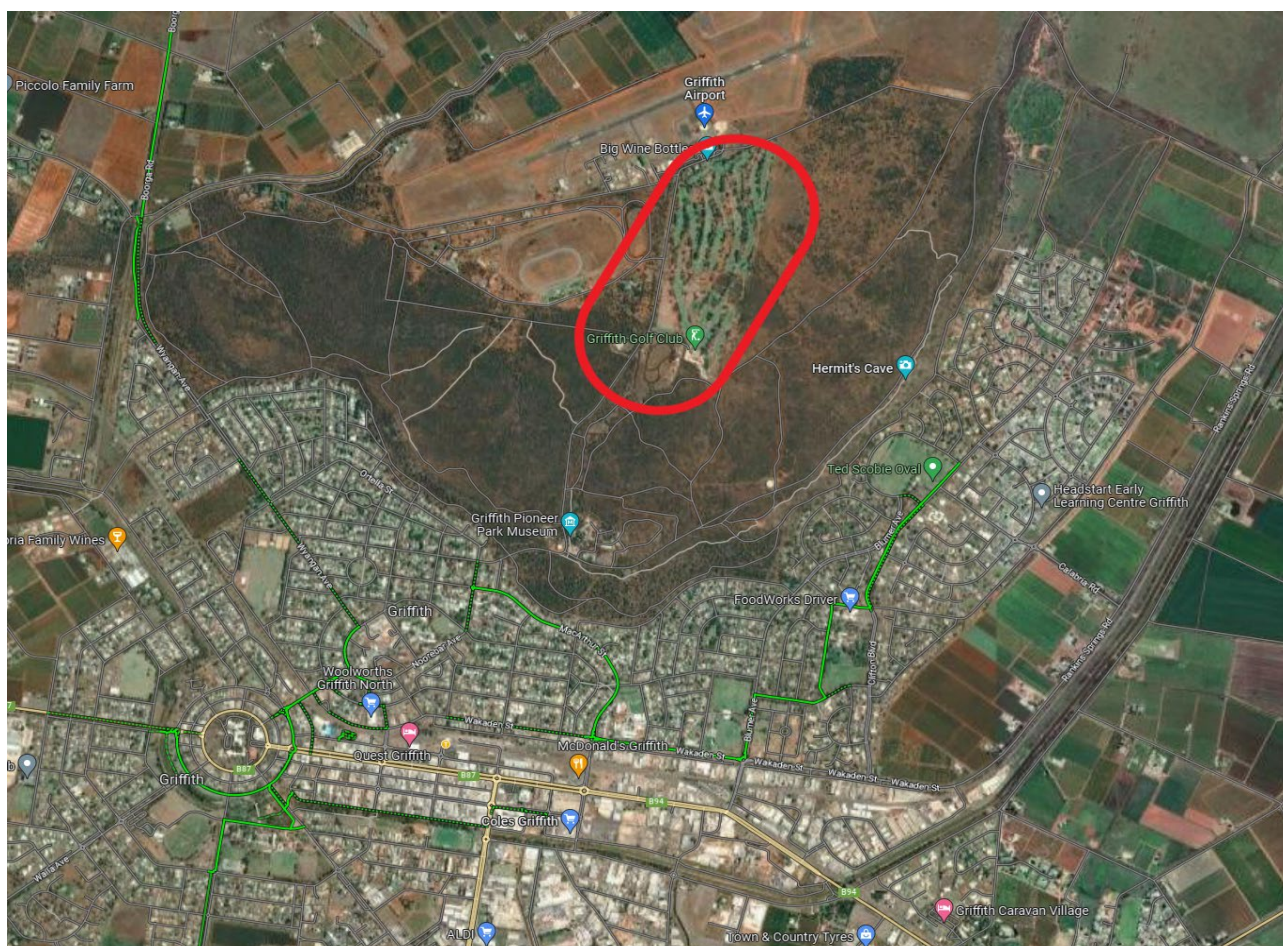
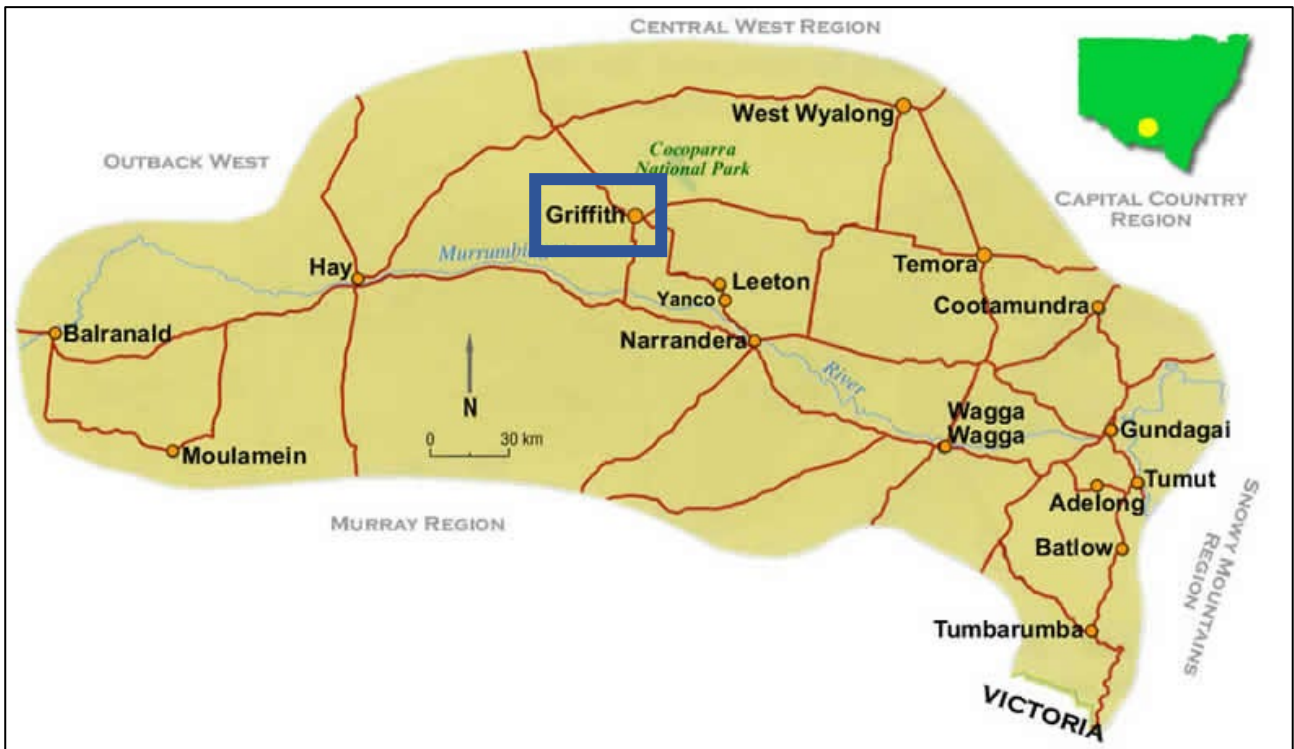


Figure 2: Griffith Golf Club location in NSW Riverina region

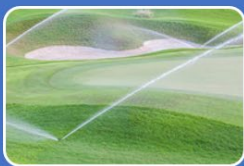


Section 2: Project Description

2.1. Project outputs at a glance



1,000,000 litres of onsite storage capacity



Installation of a modern, efficient, irrigation management system



Installation of new pump station to service 18 greens, 18 fairways and practice area covering 54 hectares

2.2. Project Scope

Irrigation experts have advised replacement of the current existing irrigation system with a state of the art, 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 mean the two full-time grounds staff, supported by a number of volunteers, struggle to keep the course in playable condition.
- 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 \$2.65 million and will include the following works:

- Installation of main and lateral pipelines covering the 54-hectare course layout;
- Over 940 modern and efficient sprinkler assemblies.
- Installation of irrigation pumphouse to provide reliable and efficient course supply.
- Installation of 1,000,000L of course storage via 2 storage tanks.
- Installation of a modern automated irrigation control system.

The irrigation system upgrade will water the same area within the Golf Course that is currently being watered through existing systems. However, the upgrade will facilitate more reliable and efficient irrigation of this area.

2.2.1 Storage tanks

Storage tanks are an essential component of the project, as the water supply for the golf course is sourced from a Murrumbidgee channel system several kilometres from the course. The current pump and pipeline system from the channel to the course is much smaller than required for the existing and new system. Tank storage is therefore essential to meet on-course irrigation requirements. An alternate option of upgrading the supply pipeline would be a multi-million dollar solution due to the length of the pipeline, pipeline location near the airport, and efficiency to pump a long distance.

Additionally, the Murrumbidgee Irrigation channel system is not always available depending on maintenance and cropping requirements, and an on-course buffer is therefore essential. The tanks have been designed into the system with the pump capacity to achieve the required 8-hour watering cycle.

2.4. Project Budget - Funding

The total budget for the project is \$2,651,380.

Any potential budget shortfalls due to unforeseen circumstances will be funded by Griffith Golf Club, from current retained earnings.

2.5. 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 process. Initial discussions with the Council confirm the application does not pose any difficulties or require any special conditions as all works will be completed on already disturbed land and not require the removal of any trees or native vegetation.

As the works are located within existing club grounds and are upgrades of existing infrastructure rather than installation of new infrastructure, there is no expected requirement for detailed site assessments. This

is consistent with both the terms of the lease agreement with Griffith City Council, and the [Griffith Local Environmental Plan 2014](#). With respect to the latter, the Griffith Golf Club is zoned as “Zone RE2 Private Recreation” and water reticulation systems are permitted without consent under the Plan.

Section 3: Socio-Economic Criteria

3.1 Preparing for the future – Long Term Vision

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, and 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 as a result. This enables the club to achieve its vision and continue to be a key part of the economic, social and environmental success of the Griffith area.

3.2 Investing in current and future viability

Measuring the effectiveness of the upgraded irrigation system will be easily achievable with the data obtained through the newly installed control system and club data. Key success measures will include:

- Absolute volume of water used per year:
 - Measurement of ML water used to irrigate the course each year.
 - Absolute water use will be analysed in the context of seasonal conditions to allow for relative assessment against previous years.
- Social/economic benefits:
 - Increased total course rounds played from 20,000 rounds per year
 - Increased visitor numbers from current 3400 rounds per year
 - Special events, pro-am and weekend playing numbers increased from current 2500 rounds per year.
 - Full use of local contractors and suppliers for construction and maintenance
 - Number of mental health, charity and cultural golf events/days
 - Number of volunteers supporting on-course activities
 - Number of diverse cultural groups
 - Number of junior and women members and visitors

- Improved environmental outcomes:
 - Bird and native animal numbers
 - Tree and local flora planting
 - Chemical and fertiliser use
- Decrease in invasive weed population
 - Increase in biodiversity and resilience into the future
- Effectiveness of new irrigation system:
 - Measurement of number of times irrigation supply cannot be pumped due to pump malfunction.
 - Measurement of number of times scheduled course irrigation is delayed by pump malfunction.
 - Measured maintenance hours required by grounds staff and volunteers to repair and maintain irrigation system.
 - Staff and volunteer hours diverted to more productive tasks.
 - Measured cost of repairing and maintaining irrigation system.

The new irrigation system will also enable continuous data collection through the control system which will allow the development of pattern recognition with regards to water demands of different areas of the course at particular times. This will inform future irrigation scheduling, thus driving continuous improvement of water use efficiency.

3.3 Benefits to industry

The project will be fully implemented using local contractors, suppliers and equipment. Local companies are well set up in the area to be able to undertake these works using all local labour. 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 expenditure of \$2.65million into the local business sector will support the growing and expanding pressurised irrigation sector.

The Griffith Golf Club is already an integral part of the local tourism effort and the significant improvement in the course through improved irrigation will enable the golf club to attract more events, greater visitor player numbers and general visitors to the course providing 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. The improvement through a more efficient watering system will enable events to be extended and more events as course condition can be maintained through the events and course management can be completed without impacting event play. A key water saving is being able to utilise extensive night watering rather than day and night which supports daytime event management.

The club is also used for weddings, birthdays and celebrations which utilise the beauty of the course for a fantastic setting for their events. These events bring families together from around the country into the Griffith area rather than going to the greener coastal areas. Further improvements to the club aesthetics will provide greater opportunity to expand these events and increase the flow on economic impacts to the region and city of Griffith.

Many local businesses support the club through sponsorship and donations and utilise the club for special events with customers, suppliers and business partners (many of whom travel to Griffith for business). These events support additional nights spent in the Griffith area supporting accommodation, hospitality and entertainment venues.

Additionally, the course is one of the best courses in the Riverina area bringing people from South-West NSW and Northwest Victoria to town for weekend golf competitions. Weekend competitions and social play bring hundreds of visitors to the area injecting money into a variety of local businesses as part of the trip to town.

3.4 Benefits to community

Water is considered a precious commodity in the irrigated agriculture area of Griffith and there is high expectation from the community for responsible and efficient 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 its 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 professionals).

In addition, the course is extensively used during drought times to support the mental health and welfare of farmers from across the Southwest of NSW. Many farming associations including cotton, nuts, rice, and others have events during harsh times to support their farming base 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 12 / 32 course/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 its facilities for golf or as a meeting place for social activities. 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.

3.5 Secure Water Supply to Towns

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.

3.6 Environmental benefits

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

A significant cost and environmental issue for Griffith golf club is weed management that is currently extensive due to the many bare areas due to poor irrigation and lack of plant competition. Improved irrigation systems will promote desired species, thus increasing competition and reducing the presence of weeds and hence reduce the herbicides, pesticides and fertiliser used in the current running of the club.

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 is present in the community of Griffith to help 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.

3.7 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. It is also evident that it will ensure a productive and resilient business that has long-term confidence in their future.

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.

3.8 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.

3.9 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 1.

Table 1: Stakeholder Groups

Stakeholder Group	Specific Needs and How They Will Benefit
Griffith City Council	<ul style="list-style-type: none"> - 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
Men's & Women's Golf Griffith	<ul style="list-style-type: none"> - A high-quality course that attracts locals and visitors to play in hosted events - A water efficient irrigation system that provides a playing surface that is always accessible
Griffith Veteran Golfers	<ul style="list-style-type: none"> - A water efficient irrigation system that provides a playing surface that is always accessible - A golf course that encourages more senior citizens to play golf and experience the physical and mental benefits

Stakeholder Group	Specific Needs and How They Will Benefit
Local Aboriginal Groups	<ul style="list-style-type: none"> - Course is used by many local aboriginal groups to support healthy living and lifestyle outcomes -Membership includes many aboriginal members
Griffith Riding for the Disabled	<ul style="list-style-type: none"> - A high-quality golf course that encourages community members to support the fundraising events they hold at the course
Murrumbidgee Regional High School	<ul style="list-style-type: none"> - A viable golf course that employs a professional to provide lessons to students
Local businesses	<ul style="list-style-type: none"> -A high quality course provides an excellent event venue for hosting supplier, customer and staff days
Local farming groups	<ul style="list-style-type: none"> -The course is used extensively during dry times to hold events to support the mental health and welfare of people, on the land -An efficient watering system will support the course condition during these times

3.9.1 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)
- WaterTek (a local company specialising in water management and equipment)
- 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

3.10 Positive Economic Outcomes

3.10.1 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 and meeting all 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.

3.10.2 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.

3.11 Water savings shared between the environment and water users

Water savings were calculated based off average water use from 2017-2021. Griffith Golf Club has used an average of 223.5 ML/year over this period. Based on a literature review of water use efficiency savings achieved from irrigation system improvements, discussions with suppliers about estimated savings, and review of current system inefficiencies, it was estimated that a 50.5% reduction in water use would be achieved through the irrigation infrastructure upgrade. With a future estimated demand of 110.5 ML/year, this results in a saving of 113 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 between the Golf Club and the environment, 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 over 113 ML of water savings per year, of which, 103 ML will be returned to the Commonwealth Environment Water Office (CEWO) as water for the environment. This will consist of 30 ML of Murrumbidgee High Security water and 124 ML of Murrumbidgee General Security water.

3.12 Water savings

Water savings were calculated by independent specialist Water Wise Consulting, who provide independent expertise and has extensive experience working with golf clubs throughout Australia. The identified savings were calculated by determining the difference between metered usage and calculated irrigation demand for the golf course over a period of several years.

Future demand was also calculated using the Penman-Montieth equation to determine irrigation demand of the turf to be irrigated. This method of estimating irrigation demand is well proven nationally and internationally and is the basis of other irrigation scheduling tools used in the region.