



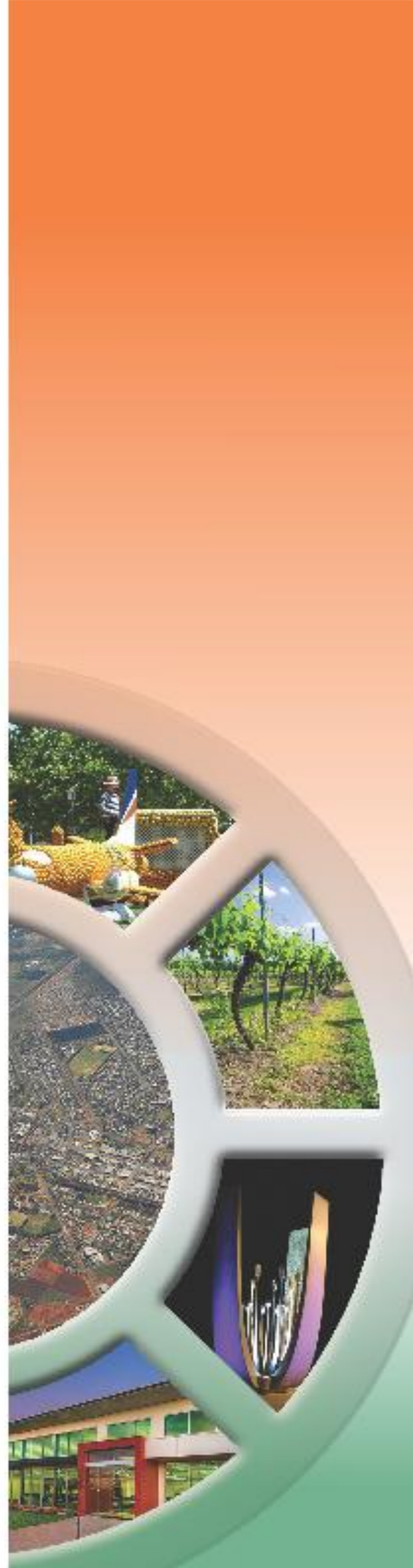
Ordinary Meeting

Tuesday, 12 August 2025

ATTACHMENTS UNDER SEPARATE COVER

CL03 Griffith City Council Water Prospectus

CL04 Adoption of Local Policies



ATTACHMENTS UNDER SEPARATE COVER

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GRIFFITH CITY WATER PROSPECTUS 2025



GRIFFITH CITY WATER PROSPECTUS



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ACKNOWLEDGEMENT OF COUNTRY

Griffith is located in the heart of the Wiradjuri Nation – the largest nation of Aboriginal and Torres Strait Islander people in Australia. Griffith City Council recognises Aboriginal people in the history and growth of Griffith and its surrounding villages. As such, Council acknowledges the Wiradjuri people as the traditional owners of the land and waters and pays respect to Wiradjuri Elders past, present and emerging.

DISCLAIMER

This report has been prepared by Griffith City Council. Information contained in this document is based on available data at the time of production. All statistics and figures are indicative only and should be referred to as such. It has been prepared on the understanding that users exercise their own skill and care with respect to its use and interpretation. Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith. Griffith City Council and the individual authors of this report are not liable to any person or entity taking or not taking action in respect of any representation, statement, opinion or advice referred to above.

Griffith Water Prospectus

Griffith City Council Water Prospectus details water policies and initiatives at the Local Government Area level, and is intended to guide water advocacy, grant applications and the ongoing development of water policy more broadly.

This Water Prospectus supplements [Griffith City Council's Water – Position Statement](#).

Irrigation is fundamental to the continuing success of the Griffith local government area. A guaranteed, transparent and affordable water supply is crucial for the future of our community. Griffith City Council is committed to:

- a) Responsibly and transparently using its available water resources to sustain the community, business operations and the local environment; and
- b) Actively working with federal and state governments and agencies, other councils and representative groups, water infrastructure operators, irrigator and business representative groups, the community and first nations peoples, to maintain water security.

Griffith Local Government Area and the Murrumbidgee Irrigation Area

Griffith is situated in one of Australia's largest planned irrigation areas, the Murrumbidgee Irrigation Area (**MIA**). The MIA was established in 1912, to drought-proof food production. Despite early difficulties (only 30 percent of original settlers remained on-farm by 1926) through innovation, hard work and successive waves of immigration (particularly from Italian and Sikh communities) the Griffith local government area is today the second-largest contributor to the Murray-Darling Basin's economy,¹ with an extremely large export-facing agribusiness sector and value-adding manufacturing sector.

With over 100 years of investment in infrastructure and irrigation know-how, the MIA is one of the most efficient and transparent irrigation schemes in the nation – almost the entire system is metered and automated. In the MIA, a drop of water goes further than almost anywhere else, producing some of the most water-efficient rice production anywhere in the world.

Griffith is also a bustling city of approximately 26,000 residents and one of the most multicultural areas in New South Wales outside of Western Sydney. Without irrigation, Griffith and its proud contribution to Australia's economy and cultural diversity would not exist.

Murrumbidgee Irrigation Ltd

Murrumbidgee Irrigation Ltd is licensed by the NSW Government and governs the delivery of water to Griffith through a network of infrastructure that diverts flows from the Murrumbidgee River, supporting both urban supply and irrigation needs as part of a collaborative framework with Griffith City Council to enhance regional water security and sustainability.

Murrumbidgee Irrigation are in the process of implementing their Resilient Rivers Water Infrastructure Program including the Urban Channel Pipeline Project. Backed by \$62.2

¹ 2022, *Murray Darling Basin Social and Economic Conditions Report 2022*, AITHER, page 12: <https://www.mdba.gov.au/sites/default/files/publications/murray-darling-basin-social-and-economic-conditions-report-2022.pdf> (accessed 7 April 2024).

million in Australian Government funding and delivered in partnership with the NSW Government, the Urban Channel Pipeline (UCP) Project is modernising water infrastructure across Griffith and Leeton. It replaces aging open channels with new pipeline infrastructure, recovering over 2,675 megalitres of water, much of which will be returned to the Commonwealth to help meet the Murray-Darling Basin's target of 450 gigalitres of additional environmental water. Stage 1 covers 14 kilometres with works underway in Leeton, Griffith and Yenda. The project also improves water use efficiency, enhances system capacity, and delivers community benefits including better road safety, drainage, and employment opportunities for local contractors.

Adaptation to climate change, including flood and drought mitigation

The Griffith local government area has elevated risks associated with droughts and floods arising from climate change. To address those risks, Griffith City Council:

- a) Is party to the [Western Riverina Regional Drought Resilience Plan](#) developed in collaboration with the Narrandera, Leeton and Murrumbidgee Councils, aimed at increasing the region's drought resilience including man made droughts; and
- b) Has developed the [Griffith Flood Liable Lands Policy 2022](#) to mitigate against the risk of floods.

As detailed in its Water – Position Statement, Griffith City Council has also advocated with the Riverina and Murray Joint Organisation (**RAMJO**) for the federal government, together with the states, to:

- a) Develop a comprehensive National Adverse Events Management Plan (incorporating a Drought Management Plan for the Murray-Darling Basin); and
- b) Continue to evaluate the impact of climate change on Murray Darling Basin inflows and determine the feasibility of infrastructure and other interventions to stabilise and, if possible, enhance inflows and storage capacity in the face of future water scarcity.

Griffith City Council will continue to implement policies as required to adapt to the risks presented by climate change.

Water stewardship

Griffith City Council is the steward for the city's water resources, comprising 14,488 megalitres, and is directly responsible for potable water treatment, sewerage treatment and stormwater management. Griffith City Council is also the manager of Lake Wyangan, Griffith's primary water body for recreational use, which provides habitat to numerous species of birds in Campbell's Wetland and Nericon Wetland.

To manage potable water treatment, Griffith City Council has developed the Griffith Drinking Water Management System, providing a comprehensive framework to manage the supply of safe, potable water to the city's residents. Griffith City Council manages \$243million of water infrastructure assets including the Griffith Water Treatment Plant and Griffith Water Reclamation Plant, which provide treated water to the Barrenbox Swamp (approximately 5ML per day) with associated environmental benefits. Griffith demonstrates the scale, sophistication and track record needed to responsibly manage its own water resources. Griffith City Council operates a regionally significant dual water network (potable and raw)

serving approximately 27,000 people across 8,700 connections in the heart of the Murrumbidgee Irrigation Area.

To improve water quality at Lake Wyangan, Council's Environmental staff have consistently conducted weekly onshore sampling for testing of both Lake Wyangan (North and South) for over 20 years. This is to test the overall water quality of Lake Wyangan (including chemical and microbiological analysis) as per Griffith City Council's mandatory testing requirements in accordance with NSW Health guidelines for recreational water. This testing continues to the present day.

The Griffith Aboriginal Land Council has stewardship of 133 megalitres of cultural water, for the Nericon Wetlands. Griffith City Council will work actively together with the Griffith Aboriginal Land Council to effectively manage the Nericon Wetlands, for the benefit of first nations peoples and the environment.

Griffith's vulnerability to water buybacks

As detailed in the report prepared by Australian Bureau of Agricultural and Resource Economics and Sciences (**ABARES**)² into the vulnerability of different regions to water recovery,^[2] Griffith has a:

- a) Sensitivity of 0.71 (the second-highest band of sensitivity);
- b) Relative community adaptive capacity of 0.26 (within the second lowest band of adaptive capacity); and
- c) Relative community vulnerability of 0.72 (the second-highest band of vulnerability).

Given Griffith's relative vulnerability, Griffith City Council is particularly concerned about the potential impact of the *Water Amendment (Restoring Our Rivers) Act 2023* (Cth) (**Water Amendment Act**), which:

- a) Provides for water recovery by way of Commonwealth water buybacks; and
- b) Removes the requirement for water recovery to have a neutral or positive socio-economic impact.

The impact of water buybacks was also identified as one of the key challenges facing the Griffith local government area in its [Community Strategic Plan 2025-2035](#) which found that impacts of buybacks could include diminished '*agricultural activity, potential loss of jobs and economic downturn, economic stress and hardship*'.

Alternatives to water buybacks, and food and water security

To ensure that Griffith can continue to deliver drought-proof food production, it is essential that its allocation of water is secure. Griffith City Council is opposed to water buybacks and supports the repeal the mechanism for water buybacks at Part 2AA of the *Water Act 2007* (Cth).

² June 2024, *Baseline relative community vulnerability and adaptive capacity – Murray-Darling Basin – a focus on irrigation in agriculture*, ABARES: https://daff.ent.sirsidynix.net.au/client/en_AU/search/asset/1035821/0 (accessed 7 April 2025).

Griffith City Council endorses the New South Wales Government's Alternatives to Water Buybacks Plan.³ Instead of water buybacks, resources should be directed to those initiatives which increase our capacity to manage our rivers and enhance the available amount of water, including through infrastructure investments, better measurement and accountability measures, removal of constraints etc. Alternative measures to optimise the delivery of water and increase the availability of water are also detailed in Griffith City Council's Water – Position Statement, and supported by RAMJO.

Griffith City Council considers that allocation of water should be based on long-term considerations about *effective* consumptive water use with the Murray-Darling Basin. Buybacks are an inappropriate tool to manage our precious water resources, as allocation is dictated by the caprice of the market – farmers sell their water due to fluctuating and temporary economic conditions. Griffith City Council considers that those areas which use water most effectively (i.e., in the most transparent, efficient and productive manner) such as the MIA, should be protected in the allocation of consumptive water rights, and that buybacks should not occur in areas which can demonstrate outstanding levels of transparency, efficiency and productivity.

Murray Darling Basin Plan Review

The Murray Darling Basin Authority (MDBA) is undertaking a review of the Murray-Darling Basin Plan, due to be completed by the end of 2026, and has observed that it is time to move beyond a '*just add water*' mentality when managing the Murray-Darling Basin. In particular, the MDBA has '*recognise[d] that Basin-scale environmental outcomes cannot be sustained without taking an integrated perspective*', which would require among other matters '*effectively managing water quality not just quantity*'.⁴

Just adding water, through very significant Commonwealth investment in water buybacks, will not only have negative socio-economic impacts, but will also fails to achieve (in relation to the cost incurred) proportionate environmental benefits in particular at the Local Government Area Level. Instead of purchasing water, state and federal governments should invest in dedicated water quality programs (such as release of the carp virus under the National Carp Control Plan).⁵

Collaboration

To properly implement the Murray-Darling Basin Plan at the local level, it is essential that councils are involved in decision-making. Griffith City Council considers that local governments, particularly those from the Murray-Darling Basin, must be afforded a seat at the table when decisions affecting the Murray-Darling Basin Plan are being made.

³ February 2024, *Alternatives to Water Buybacks Plan*, New South Wales Government, Department of Climate Change, Energy, the Environment and Water; <https://water.dpie.nsw.gov.au/our-work/plans-and-strategies/alternatives-to-water-buybacks-plan> (accessed 12 April 2025).

⁴ 3 October 2024, *Early Insights Paper*, MDBA; <https://www.mdba.gov.au/publications-and-data/publications/early-insights-paper-publication-basin-plan-review> (accessed 12 April 2025).

⁵ September 2022, submitted to Australian Government, Department of Agriculture, Fisheries and Forestry, *National Carp Control Plan*; <https://www.agriculture.gov.au/sites/default/files/documents/national-carp-control-plan.pdf> (accessed 13 April 2025); see also <https://www.agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/pest-animals-and-weeds/carp-biological-control-plan> (accessed 13 April 2025).

Conclusion

Griffith City Council's Water Prospectus underscores the city's strategic commitment to sustainable water management, regional resilience and agricultural prosperity within the Murrumbidgee Irrigation Area. By opposing water buybacks and advocating for infrastructure investment, transparent allocation and collaborative governance, Council champions a future where water security supports both environmental stewardship and economic vitality. Through partnerships with state and federal bodies, communities and local stakeholders, Griffith aims to lead by example in adapting to climate change, enhancing water quality and ensuring long-term food and water security for the region.

Attachments:

- (a) [GCC Water Position Statement 2024](#)
- (b) [Griffith Drinking Water Management System \(DWMS\) 2024](#)
- (c) [Western Riverina Regional Drought Resilience Plan](#)
- (d) [RAMJO Statement of Strategic Regional Priorities](#)
- (e) [MDA Strategic Plan Vision 2025](#)
- (f) [Murrumbidgee Irrigation Corporate Plan - 2025-2030](#)
- (g) [Griffith Flood Liable Lands Policy 2022](#)



Water – Position Statement WS-CP-204 (PUBLIC POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	08/06/1999	346	08/06/1999
2	13/07/1999	407	13/07/1999
3	14/01/2003	25	14/01/2003
4	11/05/2010	0142	11/05/2010
5	26/08/2014	0267	26/08/2014
6	09/02/2021	21/042	09/02/2021
7	09/07/2024	24/182	08/08/2024

2 Policy Objective

Irrigation water is the fundamental ingredient to the continuing success of the region. A guaranteed, transparent and affordable water supply is crucial for the future of the community and viability of irrigation industries.

Council will responsibly and transparently utilise its available water resources to sustain the community, business operations and the local environment.

Council will actively work with local water infrastructure operators, irrigator and business representative groups to enhance the volume and maintain regional water security for the Murrumbidgee Irrigation Area (MIA).

Council will actively advocate to both State and Federal Governments for water policy development that is informed by the views of various regional interest groups in the irrigation and complimentary industries.

3 Policy Statement

Working with Stakeholders

Council will request an annual meeting with (MI). Attendees will include Councillors, MI Board Directors and relevant senior staff of both organisations. The purpose of the meeting will be to discuss current and planned projects of the respective organisations. The meeting will also inform Council's strategic planning and infrastructure investment priorities.

Griffith City Council is a primary water supply operator and holder of water licence for Griffith and surrounding Towns and Villages. Council is also a member of the Riverina and Murray Joint Organisation of Councils (RAMJO).



In June 2020, RAMJO adopted a Water Position Paper which takes a whole of Basin, solutions approach to the subject of water security.

Griffith City Council endorses the RAMJO Water Position Paper and the key recommendations contained therein. Each of the recommendations are reproduced in this Griffith City Council Water Position Paper and Council makes supplementary comments in respect to several of those recommendations.

1. Water Market

RAMJO recommends a comprehensive review of the water market, which could include (but not be limited to): ownership, water security, capturing true costs of water transfers, telemetric reporting, and floodplain harvesting. Regulatory reform across multiple areas is necessary to ensure a nation-wide plan goes hand in hand with an efficient water market.

Griffith City Council Supplementary Statement:

During August 2019 the Government directed the Australian Competition and Consumer Commission (ACCC) to conduct an inquiry into markets for tradeable water rights in the Murray-Darling Basin. The interim report of the ACCC was released for public comment on 30 June 2020. The final report is to be submitted to Government by 30 November 2020.

Griffith City Council supports the continuation of water trading, including the maximisation of economic performance of irrigated agriculture, relying on fair and efficient water markets, underpinned by an environmentally healthy river system. Water trading, however, is not performing to these standards and reform is required. The market is complex and governance failure has created distrust amongst water users.

Reform of the governance framework under which water trading operates is required to address:

- Potential conflicts of interest involving water brokers and water-exchange brokers.
- Manipulation of the market by entities which exploit very limited regulation.
- Lack of transparency of the water market which benefits better resourced and professional traders.
- Regulatory reform to allow water trading between water consumers only.
- Improve communication of water allocation policies, river operations policy and real time data to irrigators.
- Rationalise/consolidate the number of government and regulatory bodies which oversee water policy. Remove duplication or overlapping in decision making.
- The topic of water “carry-over” has been a divisive issue amongst some irrigators. Greater transparency of how carry-over operates is required.



Griffith City Council participates in the temporary trade/sale of water. Council will only trade with water users. Water will only be traded to water users located within the Murrumbidgee Valley.

2. Impact of Water Prices on Agricultural Diversity

2a. RAMJO recommends that no one industry should be specifically protected. However, resources should be made available to develop an integrated and coordinated Agricultural Plan for the Murray Darling Basin (incorporating Valley Irrigation Plans) with a view to encouraging innovation, adaptation and an appropriate balance between permanent plantings and annual crops. The outcome of the plan should be to optimise productive yields, water use and economic return to communities and the nation. (Recommendation 8 expands further on innovation).

2b. RAMJO recommends supporting all agricultural and horticultural industries as diversification of domestically grown produce is important for the sovereignty of our nation. We recommend that by placing equal importance on resources for our region's ability to provide sustenance for an increasing population, and implementing protections against potential pest and disease that could decimate one or more of our industry sectors, we will be able to continue to play our part in Australia's food security.

2c. RAMJO recommends government develops criteria and mechanisms to enable flexible short-term emergency water management provisions where critical situations (e.g. drought, disease, pandemic) could result in major job losses, industry viability or national food security issues. (Recommendation 6 expands further on drought).

Griffith City Council Supplementary Statement:

The right of the individual irrigator to grow whatever crop they chose should be retained.



3. Environmental Flows

3a. RAMJO recommends that the suite of measures including stakeholder communication, spill event efficiencies, dilution flow reviews, loss reduction mechanisms, and optimising the delivery of water requirements be pursued to increase the current availability of water, and recognise unrealised gains as it relates to water availability.

3b. RAMJO further recommends that the recommendations related to improving reporting and communications by all regulatory bodies including Murray Darling Basin Authority, Commonwealth Environmental Water Holder, Department of Agriculture and Water Resources and Basin States from the 2019 'Basin Plan Monitoring, Evaluation and Reporting Capability Assessment' should be implemented.

Griffith City Council Supplementary Statement:

Griffith City Council supports additional public investment into existing water distribution infrastructure to reduce transmission losses thus increasing water available for environmental flows.

Griffith City Council supports both private and public investment in on farm programs that create better water efficiencies.

"Water buy backs" from the irrigation sector by the Commonwealth Environmental Water Holder have caused significant strain on business enterprises and the broader community. Griffith City Council does not support any form of acquisition of water entitlement from within the region.

Lake Wyangan at Griffith is an important cultural site for to the Wiradjuri people, the traditional owners of the land. Griffith City Council is working closely with the Griffith Local Aboriginal Land Council to have "cultural water" inflows secured for the Lake. Ideally the provision for "cultural water" should come from existing environmental acquisitions.

Council is also partnering with MI to improve water circulation at the Lake. These inflows together with Council investment at the site will assist in addressing significant environmental challenges such as blue green algae blooms and salinity.

Water policy and its management is very complex. The lack of transparency and clarity of information from regulatory authorities has continued to create distrust amongst irrigators and has had deleterious impacts on the regional business environment. A refocus on



clear, consistent and regular communications will assist in restoring community confidence.

4. Infrastructure – Now and Into the Future

RAMJO recommends the Federal Government undertakes to create a Sovereign Wealth Fund, complemented with a long-term plan incorporating a national approach to water infrastructure investment and with a view to sustaining our nation across all environmental, social and economic sectors now and for decades to come.

Note - This could be done in part via a review of unspent funding already allocated for delivering requirements of The Plan and an assessment of future investment requirements into the Murray Darling Basin infrastructure to better 'drought proof' and 'future proof' our Nation.

Griffith City Council Supplementary Statement:

Investment in new water storage and distribution infrastructure is urgently required to secure the future of communities and regional irrigation district's primary production.

Griffith City Council supports any initiative from the State and Federal Governments to further investigate and fund the following projects:

- Burrinjuck Dam – Raise wall height to increase storage capacity.
- “Coffey” Scheme – Proposed by Engineer David Coffey to divert flows from the upper reaches of the Clarence River into the Murray Darling Basin.
- Bradfield Scheme – Diversion of flows in western Queensland and improving flows into the Murray Darling Basin.
- Continue research, development and implementation of cloud seeding projects to increase snow falls to capture more water in storage infrastructure.

5. Conveyance Water and Losses

RAMJO recommends a critical review of the accountability of conveyance losses including capturing true costs of buyer and seller trades, and intra/inter valley delivery costs, and below Barmah Choke infrastructure impacts. Evaporation mitigation and seepage reduction initiatives should be explored.



Griffith City Council Supplementary Statement:

Griffith City Council supports additional public investment in the MIA water transmission channel infrastructure to reduce seepage losses.

6. Drought

RAMJO recommends that the federal government, in collaboration with the states, leads the development of a comprehensive National Adverse Events Management Plan (incorporating a Drought Management Plan for the Murray Darling Basin) to plan for, mitigate and manage impacts to the food bowl. This should include forecast risks such as a changing climate, reduced flows and unanticipated events that impact food security and local employment.

Agreed actions in the plan should be resourced through a permanent fund (Sovereign Wealth Fund) and should facilitate relief and foster agricultural innovation.

Griffith City Council Supplementary Statement:

Griffith City Council supports increased investment in weather monitoring services by “The Bureau” formerly known as the Bureau of Meteorology (BOM) in the region to support better informed decision making by the regional irrigation industry.

7. Climate Change

RAMJO recommends that the federal government leads an evaluation of the impact of climate change on Basin inflows and losses to determine the feasibility of infrastructure and other interventions to stabilise and, if possible, enhance inflows and storage capacity into the Basin in the face of predicted future water scarcity.

Griffith City Council Supplementary Statement:

The possibility of a future with less water is noted. All steps possible to maintain water security and availability to regional industries and communities is supported.



8. Agricultural Adaptation – Investment and Research

8a. RAMJO recommends that a Sovereign Wealth Fund be created to provide a permanent source of funding for drought relief, infrastructure development, system maintenance and adaptation.

8b. RAMJO in addition recommends that changes in both the superannuation and financial sectors are made to encourage investment into the Australian agricultural sector to ensure its future success and ability to remain globally competitive.

8c. RAMJO recommends that, with support from the Federal Minister, an interested NSW Government Organisation be nominated by the NSW Minister for Agriculture to partner with RAMJO and a regionally based NSW University within our region to collaborate on an application for a major Australian Research Council 'Centre of Excellence' grant.

8d. RAMJO in addition recommends, as part of this collaboration, that Innovation Hubs be introduced into our region as a cooperative model of research, innovation, and investment for the future sustainability of Australian agriculture.

Griffith City Council Supplementary Statement:

Griffith City Council supports the Deakin University, Centre for Regional and Rural Futures (CeRRF) Irrigation Research Centre based in Griffith.

MI is based in Hanwood (Griffith) adjacent to the Deakin University facility. MI has considerable expertise in terms of management of irrigation water. There are synergies between these two organisations in terms of the future of irrigation.

Griffith City Council will work collaboratively with any cooperative model that focuses on research, development and extension of irrigation expertise to support a sustainable future for our community.

4 Definitions

Not applicable

5 Exceptions

Not applicable



6 Legislation

Not applicable

7 Related Documents

Not applicable

8 Directorate

Utilities

Western Riverina Regional Drought Resilience Plan



Acknowledgement of Country

Griffith City Council, Leeton Shire Council, Murrumbidgee Council, and Narrandera Shire Council acknowledge the Traditional Custodians of the region's lands and waters, and pay our respect to Elders past and present.

We value the vital involvement of members of the primary production and broader communities of each council area to the formulation of this plan and extend our thanks to those who contributed.



This document was prepared for Griffith City, Leeton Shire, Murrumbidgee, and Narrandera Shire Councils by Meridian Urban.



This project is supported by Griffith City, Leeton Shire, Murrumbidgee, and Narrandera Shire Councils, through funding from the Australian Government's Future Drought Fund and NSW Government.

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Glossary

Key terms used throughout this plan are defined below.

ADAPTATION	Adjustment or modification in natural and/or human systems in response to actual or expected shocks and stresses to moderate harm, reduce vulnerability and/or exploit beneficial opportunities.
ADAPTIVE CAPACITY	The ability of individuals and groups to adjust and respond to environmental and socio-economic changes.
ADAPTIVE GOVERNANCE	Coordinating iterative, flexible, and responsive interactions between systems when designing interventions and for their implementation and evaluation.
COPING CAPACITY	Communities that may be constrained in their capacity to use available resources to cope with adverse events and to prepare for, absorb and recover.
DROUGHT	Drought means acute water shortage. Drought is a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use.
ECONOMIC RESILIENCE	The ability of the economy to absorb the economic impact of shocks and stressors without changing the economic status or outcomes.
ENVIRONMENTAL RESILIENCE	The ability of the natural environment to cope with a diverse range of shocks and stressors while maintaining natural processes and ecosystem services.
GOVERNANCE	Governance is the structures and processes by which individuals, groups and agencies in a society share power and make decisions. It can be formally institutionalised, or informal.
INTERVENTION OPTIONS	Alternative or complementary actions, projects, programs, policies, initiatives, and investments that are planned to bring about change in the system.
LOCAL KNOWLEDGE	Local knowledge and First Nations knowledge incorporates elements of lived experience within a landscape, bearing witness to the operation of systems. It includes aspects of people, landscape, culture – how people interact with surroundings and as part of communities and processes.
RESILIENCE	The ability of a system to absorb a disturbance and reorganise to maintain the existing functions, structure, and feedback. Also see general resilience, specified resilience, economic resilience, environmental resilience, and social resilience.
RISK	The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems.
SHOCK	Sudden, short-term events that threaten a city (or region). Examples include major storms, floods, bush fires, heatwaves, disease outbreaks, terrorism, and cyber-attacks.
SOCIAL RESILIENCE	The ability of the human society to cope with a diverse range of shocks and stressors while maintaining existing social and community functions.
STRESSOR	An event that occurs gradually over a timeframe that causes an adverse effect, e.g. drought.
SYSTEMS	The interaction of processes, networks, and inter-dependencies across a complex 'whole'.
THEORY OF CHANGE	Refers to theories, causal mechanisms and assumptions that explain how and why outcomes and impacts will be achieved through use, implementation and production of proposed inputs, activities, and outputs.
TRENDS	Major global or regional influences that have driven change in the past and are expected to shape change into the future.
THRESHOLD	The point at which a change in a level or amount a controlling variable causes a system to shift to a qualitatively different regime. Also referred to as a tipping point.
TRANSFORM	The process of radically changing or building a new system with different structure, functions, feedback, and identity.
TRIGGER POINT	A pre-agreed situation or event, that when met, activates a management intervention. Trigger points are usually defined in the planning phase.

Introduction

This Regional Drought Resilience Plan is a collaboration between Griffith City, Leeton Shire, Murrumbidgee, and Narrandera Shire Councils, and their communities, working together to advance the region's resilience to the impacts of drought.

Drought is a recurring feature of the Australian landscape. While common experiences exist, the impacts and major pressures through drought varies across geographies, and across communities.

The Western Riverina region is dependent on the land, water and climatic conditions for prosperity. This highlights a need enhance drought resilience opportunities to position the region to respond to and recover from dry times. Sustainable and diverse economies, and connected communities that are responsive to drought signals, are the foundation to reduce vulnerability and mitigate potential impacts.

The Western Riverina is unique in its drought context. Whilst susceptible to periods of drought, the irrigation schemes of the region and regulation of the Murrumbidgee River set it apart from other parts of NSW. Water uncertainty in the region, as opposed to climatic events leading to drought, is a consequence of an interplay of factors. These factors, broadly grouped by climate, policy and operational infrastructure requirements, each have their own challenges but interact in combination across the drought cycle.

Within the region, vulnerabilities from drought are indicated by downward trends in rainfall and soil moisture. Changes in the Snowy Mountains catchment area would also have effect given the flows received from the Alpine region. Across the community, challenges are voiced in the evolution of the complex water policy landscape which places its own pressures on the community. Under this broader context, the region retains a self-driven focus on harnessing co-operative community and economic opportunities. This plans seeks to build on the collective strengths and regional identity of the Western Riverina as a premier food bowl for Australia to take steps now to stem the impacts of future drought on our region.

The Regional Drought Resilience Plan program is one of five focus areas¹ of the Commonwealth Government's Future Drought Fund. The NSW Regional Drought Resilience Plan program is jointly funded through the Commonwealth Government's Future Drought Fund and the NSW Government, supporting local governments to work together regionally to plan for drought resilience proactively and pragmatically.

¹ Other focus areas under the Future Drought Fund include farm business resilience, roll-out of the Drought Resilience Self-Assessment Tool, and better land management practices that support landscape resilience.

Drought resilience

'will ensure regional Australia can endure deeper, longer droughts, and recover from them sooner. This will help Australia's agricultural industries maintain national farm income, increase food security, and protect the regional jobs that rely on agriculture during the toughest years. Importantly, it will also increase the resilience of rural and regional communities and improve environmental outcomes'.

(CSIRO, 2022)

Image: Fivebough Wetlands

Western Riverina Regional Drought Resilience Plan

Western Riverina Regional Drought Resilience Plan Framework

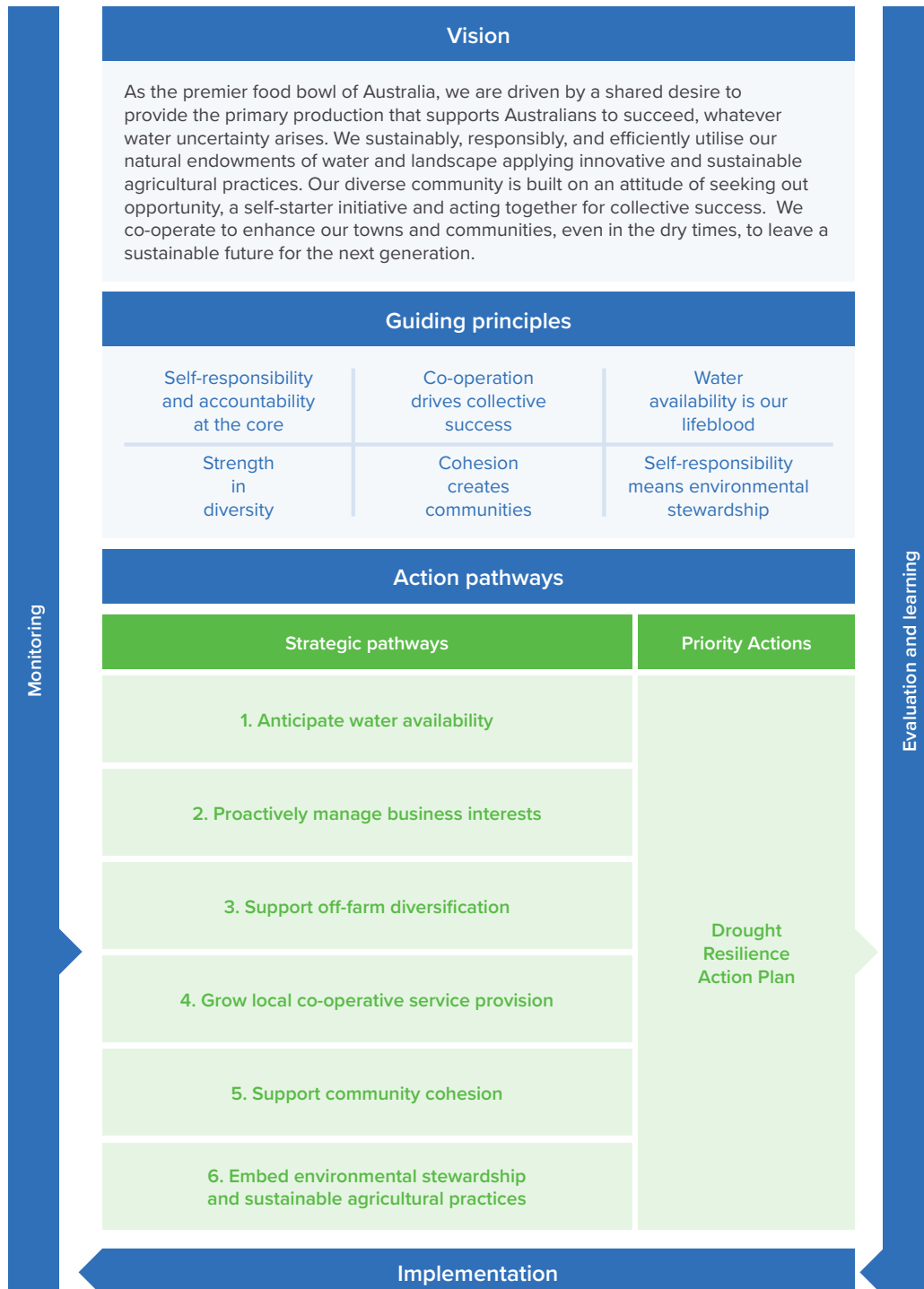


Figure 1 — Western Riverina Regional Drought Resilience Plan Framework

Western Riverina **Regional Drought Resilience Plan**

Purpose

The Western Riverina RDRP provides direction and options for how the community, business, industry networks, and local governments can adapt to strengthen drought resilience and transform for new opportunities.

The purpose of this plan is to:

- Increase understanding of the region's current and future drought resilience, considering the region's unique economic, environmental and social characteristics
- Recognise the interdependent nature of the local economy, community wellbeing, and environmental sustainability through the drought cycle and across business types
- Understand local signals and drought priorities in the community's voice and create stronger connectedness and greater social capital within communities
- Inform decisions based on a combination of local knowledge, and risk and resilience information
- Identify pathways and opportunities to improve regional drought resilience, mitigate risks and adapt to change
- Help Councils and regional organisations be in a stronger position to implement strategic actions and support partnerships that drive enhanced drought resilience
- Develop concrete actions to address and mitigate short-term and long-term drought impacts.

For the purposes of this plan, references to regional businesses include farms and agricultural business, contractors, suppliers, industry, retail and commercial services and references to community includes all townships, irrespective of size.

How does the plan help

The Western Riverina Regional Drought Resilience Plan combines drought history, climate analysis and local input to form a comprehensive understanding of the impacts of drought and to anticipate and prepare for the next drought cycle.

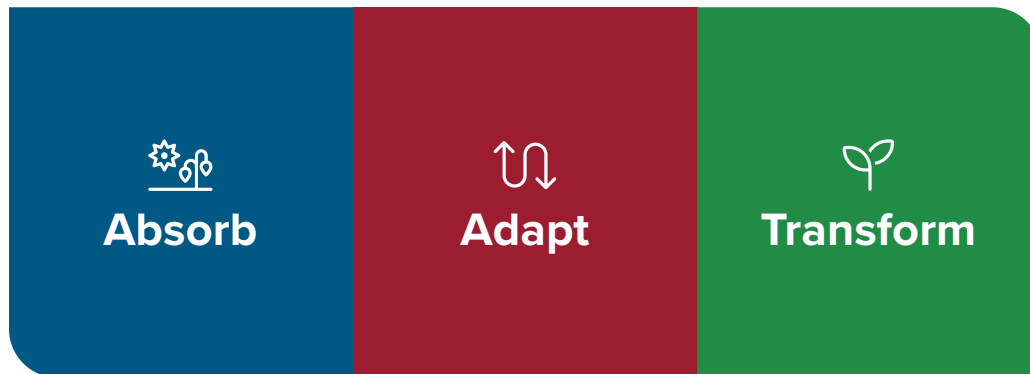
Whilst the future cannot necessarily be predicted, this plan addresses drought resilience by building in actions across the system where impacts are felt and across the drought cycles where interventions can be most effective. The plan consolidates on the range of existing programs and initiatives. It supports the ongoing collaboration between key actors who support the community through drought cycles.

The impacts of drought can be insidious with a slow onset but prolonged effects that reach across the community. It is important we understand the warning signals of drought and retain a focus on continuous preparedness.

How previous impacts of drought have manifested across community networks, local business and the natural environment provides a guidepost for where actions are needed. This plan supports a focus on outcomes through:

- Prevention of potential impacts
- Increased preparedness and resilience through recognition of signals
- What is needed in response
- What is needed for recovery.

This Regional Drought Resilience Plan supports collective and cooperative measures to prepare for drought in the face of changing and uncertain futures. This is done through several intervention approaches:



These areas of absorptive capacity, adaptive capacity and transformational capacity provide a view of the priorities identified by this plan relative to different components of the drought cycle, effort and/or costs associated. Some opportunities are short-term and more immediate, whilst others are more transformative in nature and require long-term effort to generate change.

This concept forms part of a resilience 'theory of change' model² which helps us to break down and consider the complex elements of drought resilience and the links across issues. This makes clear both how and why its impacts run so deep. This approach also helps to inform decision-making for enhanced resilience and adaptation as conditions and circumstances change over time.

This plan supports drought resilience in the Western Riverina through approach that will:

-  **Understand and recognise the triggers and impacts**
-  **Build capacity to meet challenges**
-  **Unite in community**
-  **Use regional voices to advance strengths and opportunities**

This Regional Drought Resilience Plan provides the framework for implementation and identifies practical ways the community and businesses of the region can prepare for and respond to drought impacts. Implementation funding is available from longer-term investment under the Commonwealth Government's Future Drought Fund, as well as other funding and grant assistance opportunities.

Implementation of actions contained in this plan is dependent on funding availability.

² The drought resilience plan integrates the 'Resilience, Adaptation Pathways and Transformation Approach' (RAPTA) developed by CSIRO which provides a framework to map resilience interventions. For more information on RAPTA, visit <https://research.csiro.au/eap/rapta/>



Image: Visit Griffith

Western Riverina Regional Drought Resilience Plan

Vision and principles

Vision

As the premier food bowl of Australia, we are driven by a shared desire to provide the primary production that supports Australians to succeed, whatever water uncertainty arises. We sustainably, responsibly, and efficiently utilise our natural endowments of water and landscape applying innovative and sustainable agricultural practices. Our diverse community is built on an attitude of seeking out opportunity, a self-starter initiative and acting together for collective success. We co-operate to enhance our towns and communities, even in the dry times, to leave a sustainable future for the next generation.

Guiding principles



Self-responsibility and accountability at the core

People in this region are frank and honest. We are very good at what we do – whether running the local café or managing a multi-million dollar diversified agri-business portfolio. The sense of responsibility and personal accountability is strong – people need practical and realistic support to keep doing what they do well.



Co-operation drives collective success

Not many parts of Australia work under such successful co-operative approaches like this region. From the irrigation schemes to the mills and even local pubs, the co-operative business structure provides a trust-based way to transform communities by growing services and prosperity in other critical sectors – like aged care, housing, and even retail – so that local services can be retained in-community, owned by community.



Strength in diversity

Farmers in this region know how to build, manage and grow diversified on-farm operations – they have been doing it efficiently for generations. Transferring this culture of diversification into off-farm economic growth that supports manufacturing and value-added employment and prosperity is a clear opportunity.



Water availability is our lifeblood

The region is unique in the way it receives its natural endowment of water – receiving both in-region rainfall and irrigation waters from Australia's snow country via the Snowy Hydro scheme. This combination of water sources supports arguably Australia's most critical and diversified irrigated and dryland country. However, uncertainty exists for both sources of water, which create similar drought-like conditions through different causes.



Cohesion creates communities

The region embodies the Australian ideals of mateship. There are tight-knit communities in towns and districts across the region that band together in a crisis to help each other through. It's a clear and common foundation of what it takes to live successfully and sustainably.






Self-responsibility means environmental stewardship














There is an awareness of the precious nature of resources with which the community is entrusted. There is increasing recognition and practice in environmental restoration, regenerative agriculture, and care for Country that will pay great dividends as efforts increase.







Region snapshot

Information sourced from: ABS 2021 Census data, Regional Development Australia, and AgTrack - Agricultural and Land Use Dashboard

 Population 47,589	 Population aged 65+ 20.6% <small>(17.7% NSW average)</small>	 First Nations population 8.5% <small>(3.4% NSW average)</small>
REGIONAL ECONOMY* 23,752 jobs (2021) Economy \$3.5b (2020) Local businesses 5,608 (2022)	UNEMPLOYMENT Griffith: 3.0% Leeton: 3.8% Murrumbidgee: 2.9% Narrandera: 5.2%	VOLUNTARY WORK <small>(organisations)</small> 13.2% — 23.2% <small>(13.0% NSW Average)</small>

Largest industries (by employment)

GRIFFITH  Poultry Processing  Wine / Alcoholic Beverage Manufacturing  Hospitals	LEETON  Secondary Education  Meat Processing  Grain Mill Product Manufacturing
MURRUMBIDGEE  Other Grain Growing  Grain-Sheep or Grain-Beef Cattle Farming  Local Government Administration	NARRANDERA  Grain growing, and Grain-Sheep or Grain-Beef Cattle farming  Local Government Administration  Meat Processing  Aged Care Residential Services

LARGEST INDUSTRIES <small>(gross value add)</small>  Agriculture  Manufacturing  Health and education  Electricity and water supply	PRINCIPAL AGRICULTURAL COMMODITIES  Broadacre cropping  Fruit and nuts  Livestock
ASSETS <ul style="list-style-type: none"> ✓ Western Riverina Intermodal Freight Terminal ✓ Griffith Medical Health Precinct ✓ Griffith Regional Airport ✓ Country Universities Centre ✓ Yanco Agricultural institute ✓ TAFE NSW campuses ✓ Narrandera Fisheries Centres 	AREAS OF SIGNIFICANCE <ul style="list-style-type: none"> ✓ Murrumbidgee River and tributaries <ul style="list-style-type: none"> ✓ Billabong Creek ✓ Murrumbidgee Valley and Oolambeyan National Parks ✓ Fivebough and Tuckerbil Wetlands ✓ Recreational lakes

*Values include Carrathool Shire LGA

About the Western Riverina Region

The Western Riverina, as part of the broader Riverina Murray region, is known as Australia's 'food bowl'. It is built around premium agricultural areas, and long-standing agricultural industry strengths linked to secure water and complemented by beneficial climate conditions and versatile soils. The Western Riverina Regional Drought Resilience Plan covers the local government areas (LGA) of Griffith City, Murrumbidgee, Leeton Shire and Narrandera Shire.

Griffith is the largest regional city in the Western Riverina and is one of the three regional cities in the broader Riverina Murray region alongside Wagga Wagga and Albury. A number of smaller centres support Griffith in surrounding rural communities. Leeton is the second largest centre in the Western Riverina and Leeton Shire includes the towns of Whitton and Yanco. The shire is a strong driver of the broader regional strengths, in particular through the role it plays in value-add agriculture, including agricultural education and research.

Murrumbidgee Council contains the three townships of Coleambally, Darlington Point and Jerilderie. These centres account for over 90 percent of the LGA's population, and reflect strengths through food and fibre production, benefiting from the Murrumbidgee River, Billabong Creek and water supplied from the Murray River.

Narrandera Shire is located at the juncture of the Newell and Sturt Highways, representing a transition from the broad acre agricultural areas to the east to the highly productive Murrumbidgee Irrigation Area. Narrandera forms the main town and provides a concentration of services, supported by smaller communities in Barellan, Binya, Grong Grong, and a number of rural localities.

Across each LGA the strength in agriculture is linked through connection to water, a highly evolved local industry with value-add processing, and connection

to major markets and major transport infrastructure. Key assets include the Murrumbidgee River, and flows received from the Alpine Region. The Western Riverina is home to the major irrigation schemes of the Murrumbidgee Irrigation Area, Coleambally Irrigation Area, and Murray Irrigation area, alongside other private irrigators. This irrigation network supports many farms and provides some of the nation's most important irrigation areas.

Building on agricultural strengths, educational and research institutes form key assets in the region. This includes the Country Universities Centre, Yanco Agricultural Institute, and TAFE campuses across LGAs, with the largest TAFE campus in the Riverina located at Griffith. These educational facilities and major health facilities anchor services in the region and provide for a mixture of employment options.

The position of the region has influenced its economic development and agricultural strengths, capturing major freight corridors between capital cities, and evolving its own manufacturing and transport hubs. These form the basis of future growth ambitions, with further links to emerging activation precincts across the state.

The northern part of the region (north of Jerilderie) is within the Wiradjuri Nation, the largest territory at the time of European settlement. The Nation encompasses the Central West slopes and plains and extends from Coonabarabran to the north, hugging the Great Dividing Range south towards the Murray River in the south and out to western NSW. The Nation encompasses approximately one fifth of NSW. Wiradjuri people are known as 'people of three rivers', acknowledging the three rivers that are associated with their Country: the Wambuul (Macquarie River), Kalari (Lachlan River) and Murrumbidjeri (Murrumbidgee River).

Figure 2 — Map of the Western Riverina Region and local centres

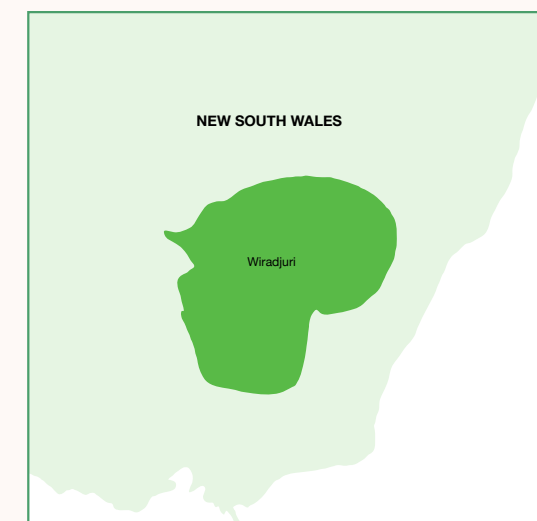


Figure 3 — Approximate extent of the Wiradjuri Nation³

³ Griffith City Council, 2019, Griffith City Council Reconciliation Action Plan December 2019/December 2021, Available at <https://www.griffith.nsw.gov.au/page.asp?f=RES-GWK-21-15-76>.

Wiradjuri Nation

The Wiradjuri Nation is the largest traditional owner group in NSW known to have cared for the lands in the regions for at least 60,000 years. Colonisation drastically changed their way of life, leading to dispossession and cultural suppression.

The culture of the Wiradjuri people is closely linked to the land and waterways, and retains a strong belief that if we care for Country, it will care for us. There are several sites of significance to the Wiradjuri people in the area, including the Koonadan Aboriginal Place and the Fivebough and Tuckerbil Wetlands. Conservation practices are key to ensuring these sites continue to maintain an ecological balance.

Water has played a critical role in the lives of Aboriginal people, for survival in arid environments and for culture, spiritual connection to land and waters and identity. Water helped in defining language boundaries and ceremonial places, and also underpins many land management practices. Traditional Aboriginal water collection and storage practices have evolved for many centuries and continue into the present.

In collaboration with First Nations/ Aboriginal people, a state-wide Aboriginal Water Strategy is currently under development, building upon consultation over recent year. The plan will identify ways of increasing water rights and ensuring that First Nations people are empowered to contribute to water management and planning decisions.

People and community

The Western Riverina is attracting new agricultural ventures and business operators who are keen to trial innovative approaches. Across the region, the vibrancy of agricultural industry is shining.

At heart of this is a strong community co-operative style of approach to not only business, but community development. A drive to work together, and to share knowledge and benefits, is a key attribute behind some of the region's most successful economic and community ventures. Strong community identity and a sense of civic duty is foundational in this regard. It also informs the community's dedication to volunteering activities and organisations. Whilst volunteerism rates are in decline nationally, community dedication at the local-scale across the Western Riverina remains relatively strong.

Sport and recreation plays a major role in the wellbeing of people and communities in the region, displayed through the diverse range of sporting teams and sporting calendar. This goes beyond those that play, but to the broader community as avid spectators and volunteers who contribute to the local teams and the running, maintenance and administration of local venues and facilities. Other social interest groups also add to the vibrant tapestry of community spirit and provide important creative and social connections.

Green spaces, recreational and natural assets are therefore critical to community wellbeing. While maintaining water to these spaces during drought is challenging, it is also essential to underpin community cohesion and mental wellness at a broader scale. There are also significant visitor economy dividends associated with these assets, as well as the region's colonial heritage and lively arts and culture scene.

Image: Jerilderie Plains

Western Riverina Regional Drought Resilience Plan

Environment

The Western Riverina is part of the wider Riverina Bioregion which has high soil fertility and a generally abundant water supply. These aspects underly its primacy as a premier food-growing region.

The climate of the Riverina Bioregion is dry and semi-arid with hot summers and cool winters, and most rainfall occurring in winter months. Vegetation ranges from river red gums along river channels, to saltbush on the plains. National parks in the region include Murrumbidgee Valley and Oolambeyan National Parks. The region's natural assets include significant wetlands and swamps such as the Fivebough and Tuckerbil Wetlands. These areas provide important habitat for native fish, amphibians, birds, mammals and many other water dependent fauna. These areas are also of cultural heritage significance to the region's First Nations people.

Since European colonisation there has been substantial modification of the vegetation and landscape through pastoral activities, the use of ground and surface water resources, and the introduction of feral animals to the region including Carp in the river systems.

One of the most profound changes at a landscape scale was the construction and commencement of the Snowy Mountain Scheme (Snowy Scheme). The Snowy Scheme was designed to produce electrical energy. However, one of the key objectives of the Scheme was to mitigate the effects of drought on irrigated agriculture in NSW and Victoria by improving the security of water supply to farmers along the fertile Murray and Murrumbidgee Rivers.

Economy

Collectively, the Western Riverina economy supports approximately 23,752 jobs and its economic value is an estimated \$3.5 billion⁴ per year. The four key strengths of the region are in agriculture, manufacturing, utilities, and health and education

The high-quality agricultural lands support a long-held sector strength with significant value-add opportunities. The sector retains strong links to manufacturing, which also benefits from the linkages to large cities, distribution points of ports and airports, and links to freight and logistics hubs.

Economic assets exist through the major freight routes, freight railway lines, and links to the neighbouring regional city precincts in Albury and Wagga Wagga. The region's Western Riverina Intermodal Freight Terminal and urban industrial areas also provide economic enablers.

Investment in the region continues with major projects planned and underway. Strengths which support the key industries are its access to water and irrigation systems, proximity to metropolitan markets, extensive road and rail infrastructure and emerging population-serving employment clusters.

Industry	Employment (2021)	Gross Value Add (2020)
Agriculture	3,926 jobs (16.5% share)	\$583m
Manufacturing	3,827 jobs (16.3% share)	\$526m
Health and education	4,405 jobs (18.5% share)	\$390m
Electricity and water supply (including renewables)	382 jobs (1.6% share)	\$144m

⁴ This includes Carrathool Shire in addition to Griffith City, Leeton Shire, Murrumbidgee, and Narrandera Shire

How this plan was prepared

The Western Riverina Regional Drought Resilience Plan was prepared through the valued contribution of a broad cross section of community members, stakeholders, local government, government services, community organisations, businesses and local producers. This engagement was supported by an evidence-based resilience assessment for the region.



Resilience Assessment

- research and literature
- strategy and policy reviews
- regional characteristics
- trends and projections for drought impacts; and
- drought resilience indicators assessment.



Stakeholder engagement

- online community and business surveys
- community, industry and government workshops
- community drop-in sessions
- targeted consultations, interviews and discussions with community, industry and services representatives.

The narrative, theme and actions within the plan are directed by the conversations across community engagement. The plan builds on existing strategies through the lens of drought resilience which supports development on the identified strategic pathways.



Image: Leeton Chill & Grill Festival

Western Riverina Regional Drought Resilience Plan

Strategic alignment – state, regional and local

Looking upwards, the regional drought resilience program provides strategic alignment with international scale goals including the United Nations Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction, alongside national-scale strategies and frameworks and state-level strategic instruments. This alignment demonstrates how working locally contributes to broader sustainability and resilience outcomes for NSW and Australia.

Key plans and strategies contributing to this alignment and the preparation of the Western Riverina Regional Drought Resilience Plan has included (but is not limited to):

- Murray-Darling Basin Plan
- Riverina Murray Regional Plan 2041
- Western Riverina Regional Economic Development Strategy (2023 update)
- Draft Murrumbidgee Regional Water Strategy
- Riverina and Murray Joint Organisation (RAMJO) strategies, plans and papers
- NSW Climate Change Adaptation Strategy
- NSW Government Department of Primary Industries Drought Hub
- Department of Regional NSW Drought Signals Dashboard
- Commonwealth Government's Drought Resilience Self-Assessment tool
- Council Integrated Planning and Reporting Framework documents.

A stakeholder-driven approach

The resilience assessment which underpins the RDRP built an understanding of local context and drought impacts around the economic, natural environment and social characteristics of the region. However, impacts are not felt in isolation but rather can compound and cascade. Community consultation was key to understanding how these interactions occur and build.

The engagement process centred on community workshops, drop-in sessions, targeted meetings and discussions, and an online survey to collate experiences, insights and views from a broad cross section of community members. We spoke with growers, livestock graziers, industry and community group representatives, business operators, First

Nations organisations, subject matter specialists, service providers, local and state government agencies, elected representatives and more.

Discussion was had on what was needed into the future to better position the region collectively when the next time a dry period is upon us. This discussion focussed on actions and initiatives that were required in preparation for drought, the needs during drought and then into recovery.

Figure 4 — Engagement workshops held in-region



9 workshops across weeks in July and September 2024

Coleambally / Narrandera
Barellan / Leeton / Griffith

4 drop in sessions

Darlington Point / Jerilderie
Whitton / Griffith

Online survey

Community / Business owners
and operators

72 survey responses

45+ workshop attendees

Engagement observations and insights

Key insights communicated through the stakeholder consultation process and informing the preparation of this plan include:

-  Co-operative community approaches are strong and working well. This sets the region apart from other areas. There is a strong desire to work together for mutual benefit.
-  Irrigation has stabilised the local economy over the past 50 years which has limited the impacts of drought on the region to an extent, though it is still felt.
-  Mental health and wellbeing ahead of the next drought should be a key area of focus. Mental health support once drought has set in is welcomed, but it can be too late. Tools to support producers ahead of drought is a clear opportunity, as well as building broader community mental health literacy.
-  Primary producers in the region benefit from opportunities to showcase their property management and production processes. People come from around the world to learn from Western Riverina producers.
-  The Western Riverina plays a key role in broader food security matters, and as a key exporter for the nation. As key players in this system we want to see what is being planned at higher policy levels.
-  State and Commonwealth Government services that support drought preparedness should be more actively promoted and marketed.
-  An improved and shared understanding of how the water market operates is needed.
-  To deal with reduced water availability, economic development needs to focus on non-water dependent jobs / industries. Government assistance is needed in diversifying the economy to reduce reliance on contribution from agricultural.
-  The key is to act early when making decisions in the face of drought, which applies to on and off-farm businesses.
-  The efficiency of government processes and systems places unnecessary stress on people. For example, registration of trucks (of which properties / businesses usually have many) which must be done in-person. Issues were also present with previous grant application process and timelines of such availability.
-  Townships have good water allocations that provide opportunities for new businesses.
-  Resilience is driven by efficiencies and strong self-accountability based upon business acumen, efficient management, innovation and sustainability.
-  Business and property succession planning is critical.

Messages from the Community

Community views are strong on how the region builds its own resilience and how it contributes to the resilience of Australians more broadly. Key messages from the community, which are central to this plan include:



Regional enablers

To bolster the resilience to the effects of drought, the region's ability to capitalise on its community and economic development opportunities is reliant upon key enabling attributes. Beyond water, these include access to reliable energy networks, digital connectivity and transport infrastructure.

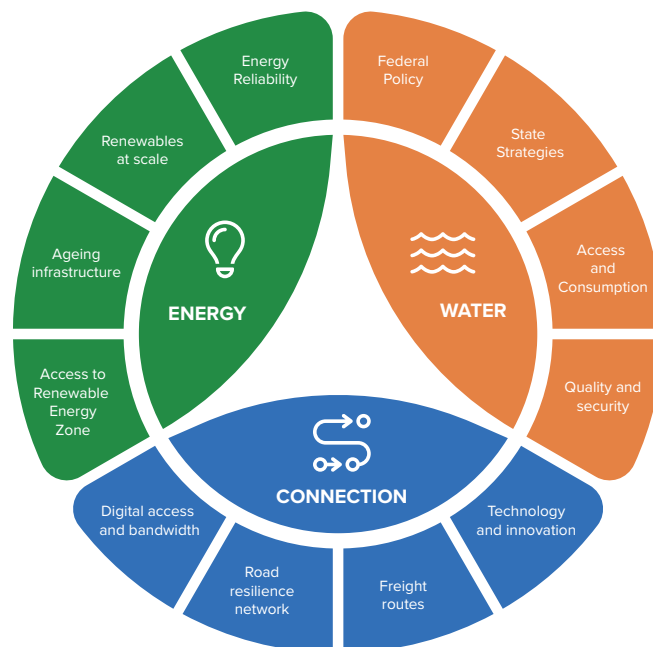


Figure 5 — Regional enabling priorities of the Western Riverina

How our region is impacted by drought

How the Western Riverina region is impacted by drought is closely aligned to its connection with water, which is the 'lifeblood' of the region.

Natural river systems

This is a unique part of Australia. The region derives the benefit of relatively modest in-region rainfall, but also the bounty of surface water from rain and snow precipitation from far away. The Murrumbidgee is sourced from high in the Australian Alps, winding its way across the south-west slopes of NSW and across the riverine plains to where it meets the Murray River. The Snowy Scheme was originally conceived as an irrigation scheme to draw the snowmelt from the Snowy Mountains west into the Murrumbidgee and Murray Rivers, before it also diversified into hydro-electric power generation.

The Murrumbidgee River connects centres and communities across the region and is the basis for productive agricultural lands, nationally important wetlands, and hydroelectricity further beyond the Western Riverina.

The Murrumbidgee catchment is part of the southern Basin of the Murray-Darling Basin, with this basin flowing into the Murray River. The Murray River system also influences the region, supplying water to south of Billabong Creek. This supports production in and around Jerilderie and the broader Murrumbidgee Council area.

Land uses are diverse across the Murrumbidgee Valley. A high proportion of land is used for dryland grazing and cereal-based cropping. The region supports the production of over 40 percent of NSW grapes and 50 percent of Australia's rice. Given the diversity of users, and the context to which it sits as part of the broader Murray-Darling Basin system, there are competing interests which provide the backdrop for a range of issues related to regional water planning and policy in the region.

The Snowy Scheme water makes its way through the Murrumbidgee Irrigation Area (MIA) via Blowering Dam and Burrinjuck Dam on the Murrumbidgee River. Blowering Dam stores water that has been released from storages further upstream in the Snowy-Tumut Development Section of the Snowy Scheme. Water releases from Blowering and Burrinjuck Dams are managed by NSW State Water, to provide for town water supply, irrigation and environmental use requirements. On the Murrumbidgee River, as at Gundagai, the Snowy Scheme contributes inflows of around 25 percent during average inflow years, but 60 percent during drought years. Water from the two storage dams flows down to Berembend Weir, a journey taking five days and a further two days to Gogeldrie Weir. From Berembend Weir, water moves into Bundidgerry storage and onto the Narrandera Regulator, which is the start of the system owned and maintained by Murrumbidgee Irrigation.



Image: Griffith Main Canal

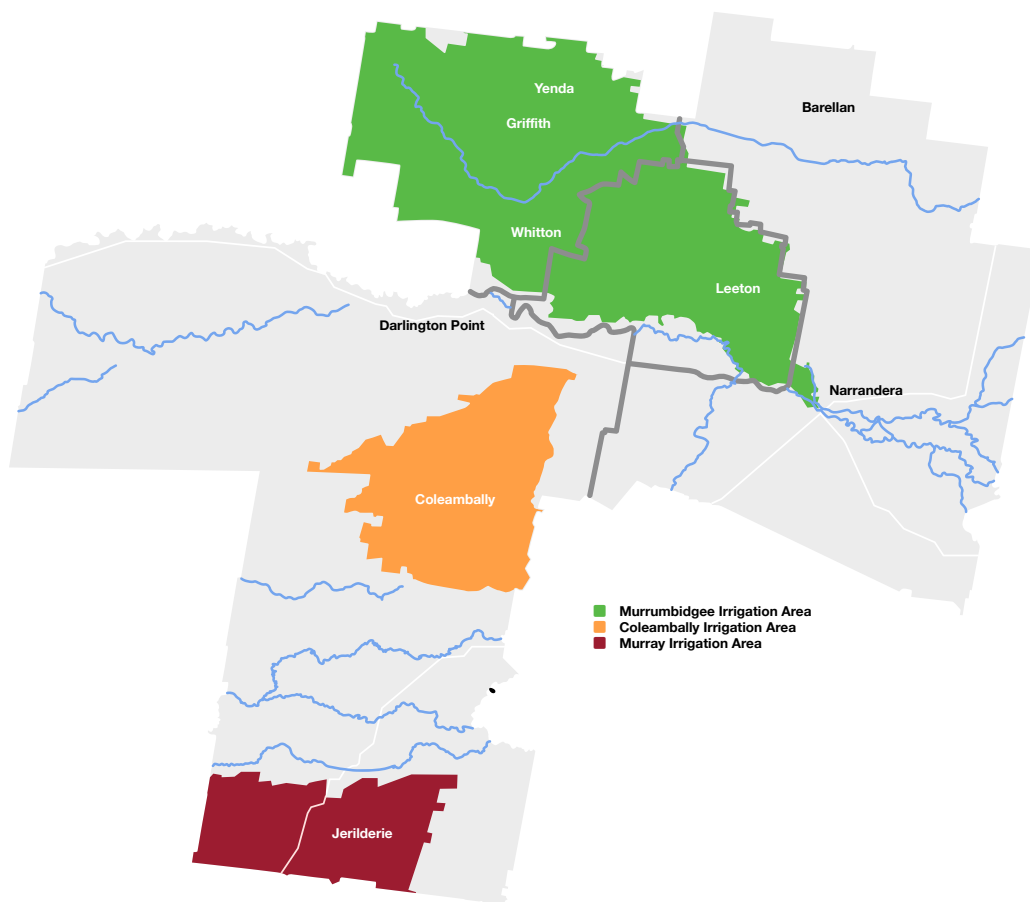
Western Riverina Regional Drought Resilience Plan

Irrigation areas

The Murrumbidgee River acts as the natural delivery course for the major food producing areas of the MIA and the Coleambally Irrigation Area (CIA) via Blowering Dam (on the Tumut River, a tributary to the Murrumbidgee) and Burrinjuck Dams. These irrigation areas provide over one-quarter of all the fruit and vegetable production in NSW and are also one of Australia's largest exporters of bulk wine. The southern part of the region, south of Jerilderie and Billabong Creek, is serviced by Murray Irrigation which supplies to more than 740,000 hectares of farmland.

This access to water through the establishment of irrigation schemes, and other water sources, has supported the growth and scale of operations in the region both in agribusiness and associated manufacturing. Economic activity in the region, both historically and at present is strongly linked to the Murrumbidgee Irrigation Scheme, and the water infrastructure investment that support the modern-day irrigation network.

Figure 6 — Major irrigation areas in the Western Riverina



The region's different types of 'drought'

The Bureau of Meteorology notes that drought is a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use. We typically think of drought as the absence of rainfall in a region given most other regions in Australia are predominantly dryland in nature.

'Water uncertainty' is a preferred term in the region rather than this traditional rainfall and climate-led view of drought. This uncertainty can come from a range of different mechanisms in this region which may occur singularly or in combination. Engagement highlighted three kinds of 'water uncertainty' for the region:

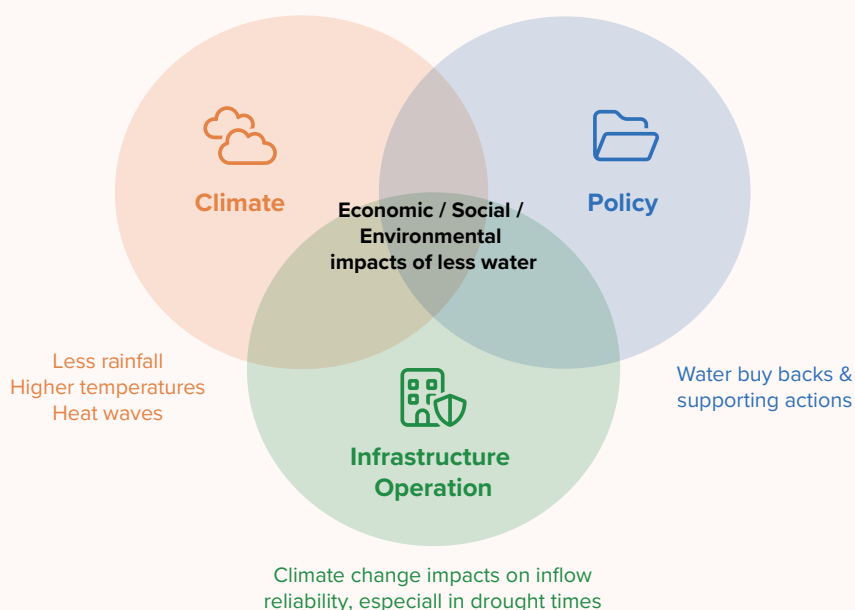
- > 'Natural' drought – which is the climate-related drought experienced across Australia, and involves a deficit in the level of rainfall occurring in region.
- > 'Human-made' drought – which is the lack of irrigation water due to government policy or out-of-region water availability.

- > Operational constraints influences – which involves the asset-based constraints of scheme maintenance and operation, an more significantly, reliability of supply.

The effects of drought and any resilience initiative need to be aligned with responses to the broader context, including policy drivers and operational implications of changing rainfall patterns in the Snowy Mountains. These may result in less water availability or a reduction in the reliability of water supplies in the region. The interplay of these factors creates uncertainty in the water landscape for this region.

Whilst the irrigation schemes have stabilised local and regional economic activity, water shortage and drought impacts can still be felt across the community. Into the future, the impact of climate change on the Snowy Mountain region is also important to the Western Riverina given the reliance on elevated inflows in drier periods from the Snowy Scheme. This emphasises a need to plan ahead to alleviate potential future impacts.

Reduced Water Availability



Policies / Programs / Actions in response to the various drivers need to be aligned to avoid unintended consequences and implementation gaps.

Figure 7 — Drivers of loss of water availability in the Western Riverina

Drought impacts

Regardless of how drought manifests, whether it is climatic, policy or operationally-related, the impacts are largely still the same. The impacts below were identified through consultation to inform the plan.



Environmental Impacts

- Loss of topsoil through groundcover loss and wind erosion
- Increased demand on alluvial ground water
- Reduced root zone soil moisture
- Water turbidity
- Pressure on the wetlands to support a wider variety and quantity of wildlife
- Low inflows into the water courses and higher evaporation rates impacting the health of flora and fauna
- Biosecurity and pest and weed outbreaks
- Vegetation dieback
- Increased potential for bushfire and grassfire, and dust storms
- Water and food availability for wildlife



People and Social Impacts

- Social isolation
- Increased mental and physical health issues
- Increased demand on community services
- Challenges in attracting and retaining workers
- Youth retention
- Maintenance of sports and recreational facilities
- Reduced ability to partake in sporting and recreation activities
- Household financial distress, and capacity to access local services
- Population decline and loss of skills
- Increased need for community group activity with less volunteers available
- Increased potential for conflict and reduced community cohesion
- Impacts on culture and cultural practices
- Infections and illness from water quality



Economic Impacts

- Reduction in water allocations
- Limited fodder and water availability for livestock
- Reduced discretionary spending in townships
- Water uncertainty creates loss of confidence in both commercial & residential property market
- Reduction in agricultural production, reduced yields
- Loss of or reduced farm income, balance sheet impacts and reduced borrowing capacity
- Maintaining cash flow and debt servicing
- Loss or reduction in on and off farm employment
- Increased fodder and water prices
- Changes in farm ownership models
- Halting of investment and capital projects on farms and directly associated businesses
- Research and innovation can stall
- Compounding effects of other natural events such as frosts

Impacts from external trends

-  Changing water policy environments including water buy backs and allocation changes
-  Housing pressure and availability of land in and around towns impacting housing supply for workers
-  Costs of living and rising costs of farming inputs
-  Demand from overseas markets is driving the need for sustainability and accreditation
-  Changes to government service delivery models which centralise employment to larger centres and results in consequences for awareness of programs and support, and access to services
-  Changes to farm structures, with an increase of corporate farm and the resultant impacts to local community service provision, population and local spend
-  Limited telecommunications and electricity network reliability and coverage.

Cascading impacts of drought

The effects of drought are not isolated, they are interconnected across the social and economic systems in the region and broader pressures on the landscape. Given the significance of agriculture within the regional economy, impacts to the sector have broader flow on effects to downstream industries, supply chains, and the local businesses in town that rely on discretionary spending.

Many existing challenges within a regional area are made harder. Workforce attraction and retention can be an issue through drought. Where workers leave during drought, it can be difficult attracting these workers back which can be both timely and costly to business operations and can impede productivity in the recovery cycle.

As part of the development of this plan, it is essential to consider the relationship between drought impacts and their underlying causes, with a focus on addressing the root causes rather than merely responding to the resulting chain of symptoms. In this regard, the design and implementation of actions can address multiple challenges across the system.



Drought history

The impacts of drought can vary based on community, weather conditions, and the prevailing macro influences and trends of the time. Additionally, personal circumstances can vary significantly. Major droughts in Australian history have affected the Western Riverina region, characterised by periods of low rainfall.

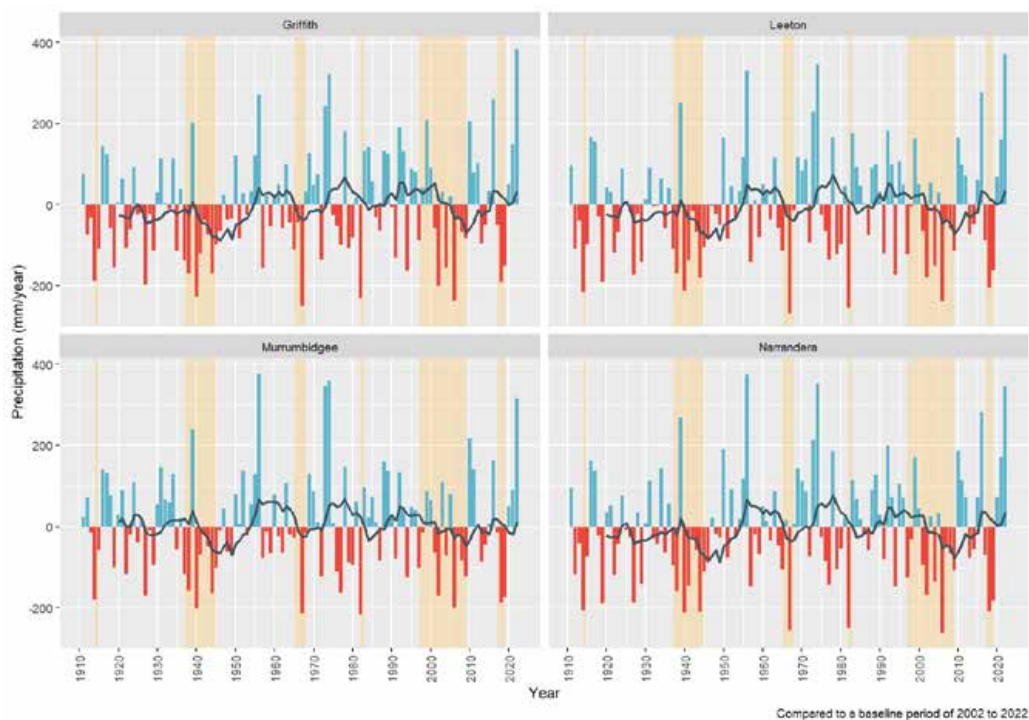
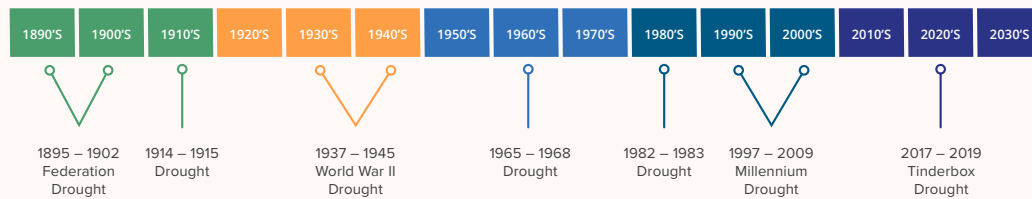


Figure 8 — Yearly mean precipitation anomaly by LGA

*Note that the data does not extend back to the Federation drought of 1890-1902

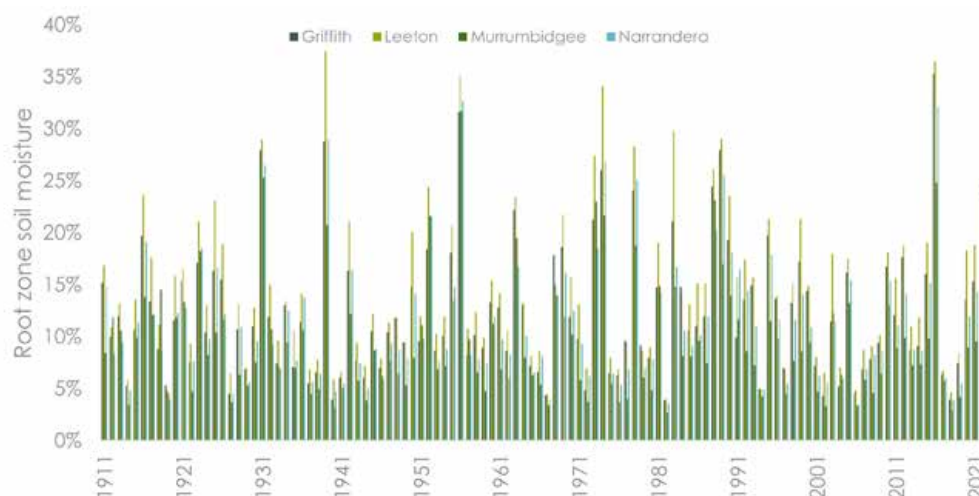


Figure 9 — Soil moisture across LGAs. Major historical droughts align with lower soil moisture levels

The region experiences some years of consistent rainfall, scattered with year-to-year fluctuations. The WWII Drought and Millennium Drought display some of the more protracted periods with notable impacts to soil moisture levels.

A comprehensive synthesis of historic drought climate data specific to the region is included at Appendix A. An analysis of this was undertaken as part of the Resilience Assessment reporting that informs this plan.

A focus on the 2017-2019 drought

During the 2017-2019 period, rainfall for much of Australia, in particular most of the Murray–Darling Basin, was substantially below average. The three years from January 2017 to December 2019 was the driest on record for any 36-month period starting January, when averaged across the Murray–Darling Basin and NSW. Average rainfall for the basin was over 100 millimetres lower than the second driest period (January 1965 to December 1967), and NSW received around 170 millimetres less rainfall than the next driest period, the Federation Drought (1900-1902).

A notable feature of the rainfall deficiencies of these three years is that they were concentrated in the cooler seasons. Both 2018 and 2019 were especially dry. The period was the driest and hottest on record for the basin as a whole. These record warm temperatures exacerbated dry conditions, at times rapidly drying soils in a matter of months. This led to periods in 2017 and 2019 that researchers have termed ‘flash drought’.



Image: Grain storage, Jerilderie

Western Riverina Regional Drought Resilience Plan

Future drought

The agricultural industry is a significant economic driver for the region. The high-quality agricultural lands support a long-held sector strength with significant value-add in industries of education and manufacturing. Because of this, it is important to consider the projected impact of future climate changes to better plan for potential increased rainfall uncertainty and its impacts of associated water policy.

The further in advance we plan, build awareness and put in place redundancy measures, the more options we will likely have available to address issues down the track.

Future climate scenarios





According to the Intergovernmental Panel on Climate Change (IPCC) reporting, under all emissions scenarios considered global surface temperature will continue to increase until at least the mid-century. Increasing temperatures and energy within the climate system are projected to result in widespread changes to weather and climate patterns, including drought and all elements of the water cycle.

The below section presents projections of drought and associated climate conditions which are assessed over two possible future climate scenarios using regional climate model ensembles. Projections are shown across the region using the reference period (1976-2005) and then two timescales 2050 (2036-2065) and 2070 (2056-2085). The IPCC's Representative Concentration Pathways (RCP) 4.5 and 8.5 are used. RCP 4.5 models mean global warming of between two to three degrees Celsius and is the most likely future scenario based on current climate commitments. RCP 8.5 is a mean global warming of four degrees Celsius or more. This is considered a worst-case scenario.

Current climate models do not account for global climate tipping points. This means that the effects of tipping points are typically not included in climate projections and impact assessments. Breaching global climate tipping points represents significant risks on top of the changes typically described in climate assessments. The effects of breaching certain tipping points may include abrupt changes to the El Niño Southern Oscillation, rainfall patterns, and rainfall variability that are not represented in climate model projections, on top of the main consequences of more rapid warming and sea-level rise.

While days above 35°C and Forest Fire Danger Index (FFDI) are not direct indicators of drought, they describe weather conditions that often occur alongside drought or are exacerbated by drought.

Regional drought climate indicators:

-  Generally decreasing trends in annual precipitation across the region, worsening into the far term
-  Reduction in soil moisture levels across all scenarios modelled
-  Increasing temperatures are likely to be the primary driver of increased frequency and severity of evapotranspiration and drought conditions
-  Other climate and weather-driven events like heatwaves and bushfires / grass fire may compound broader impacts from drought events.

Below projections of these indices use an ensemble of CSIRO's Electricity Sector Climate Information (ESCI) datasets (days above 35°C and days above an FFDI of 25).⁵

Griffith City		2050		2070	
Variable	Climate model reference period	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	15% [#]	↓ 0.019 mm [^]	↓ 0.019 mm [^]	↓ 0.013 mm [^]	↓ 0.026 mm [^]
Annual total precipitation	414 mm	↑ 1 mm	↓ 7 mm	0 mm	↓ 15 mm
Days above 35°C	31	49 ↑ ¹⁸	55 ↑ ²⁴	Data unavailable	
Days with FFDI above 25	53	67 ↑ ¹⁴	74 ↑ ²¹		

Leeton		2050		2070	
Variable	Climate model reference period	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	16% [#]	↓ 0.023 mm [^]	↓ 0.025 mm [^]	↓ 0.015 mm [^]	↓ 0.031 mm [^]
Annual total precipitation	422 mm	↓ 3 mm	↓ 10 mm	↓ 9 mm	↓ 19 mm
Days above 35°C	30	47 ↑ ¹⁷	53 ↑ ²³	Data unavailable	
Days with FFDI above 25	51	64 ↑ ¹³	71 ↑ ²⁰		

Murrumbidgee		2050		2070	
Variable	Climate model reference period	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	12% [#]	↓ 0.015 mm [^]	↓ 0.013 mm [^]	↓ 0.007 mm [^]	↓ 0.021 mm [^]
Annual total precipitation	385 mm	↓ 6 mm	↓ 3 mm	↓ 4 mm	↓ 17 mm
Days above 35°C	30	47 ↑ ¹⁷	53 ↑ ²³	Data unavailable	
Days with FFDI above 25	54	68 ↑ ¹⁴	74 ↑ ²⁰		

Narrandera		2050		2070	
Variable	Climate model reference period	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Root soil moisture	14% [#]	↓ 0.019 mm [^]	↓ 0.018 mm [^]	↓ 0.009 mm [^]	↓ 0.023 mm [^]
Annual total precipitation	436 mm	↓ 3 mm	↓ 9 mm	↓ 7 mm	↓ 18 mm
Days above 35°C	30	47 ↑ ¹⁷	53 ↑ ²³	Data unavailable	
Days with FFDI above 25	48	62 ↑ ¹⁴	68 ↑ ²⁰		

[#] Mean water content as a percentage of capacity.

[^] Change (mm/yr) in relative soil water content of the 1976-2005 reference period's relative soil water holding capacity.

⁵ CSIRO n.d., ESCI Climate Data, Department of Industry, Science, Energy and Resources. Available at: <https://www.climatechangeinaustralia.gov.au/en/projects/esci/esci-climate-data/>

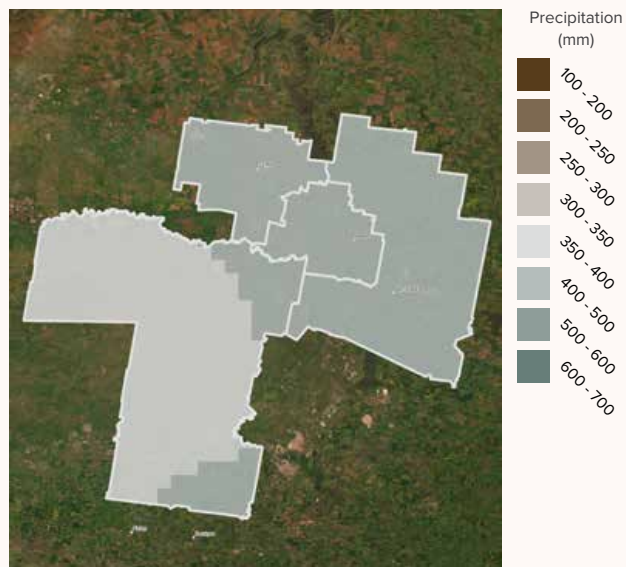
Annual precipitation

Considering the modelled scenarios for precipitation, all see either a minimal change or a reduction in annual total rainfall by 2050. Under the RCP4.5 scenario, this annual reduction lessens in severity in Murrumbidgee and Narrandera by 2070; but, grows in Griffith and Leeton.

Under the RCP8.5 scenario by 2070, the reduction in annual rainfall grows significantly across each LGA over the course of the two decades. This is notable for Murrumbidgee, as it has the lowest rainfall rate in the climate reference period and the most significant reduction from 2050 (-3mm) to 2070 (-17mm) under this scenario (Figure 12).

Figure 12 — Annual precipitation changes across the region.

Climate model reference period



2050 (RCP4.5)



2070 (RCP4.5)



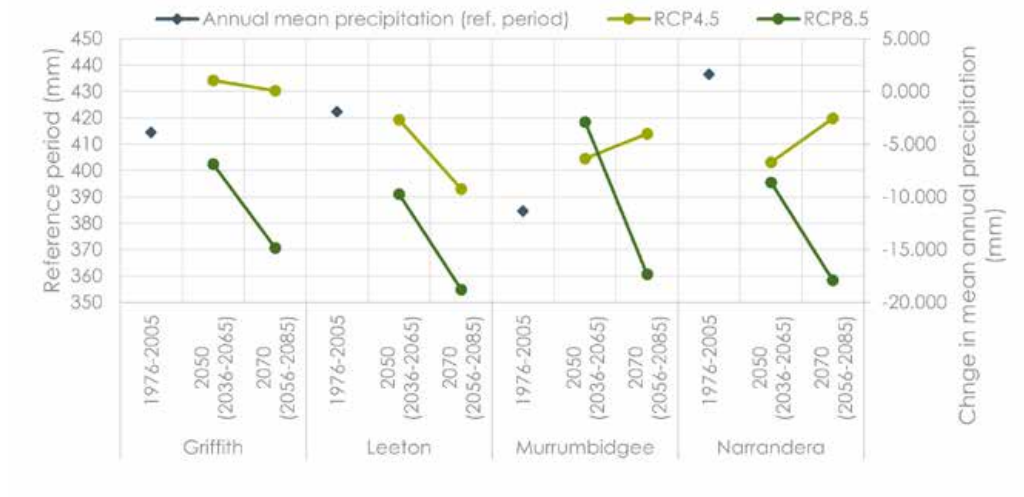
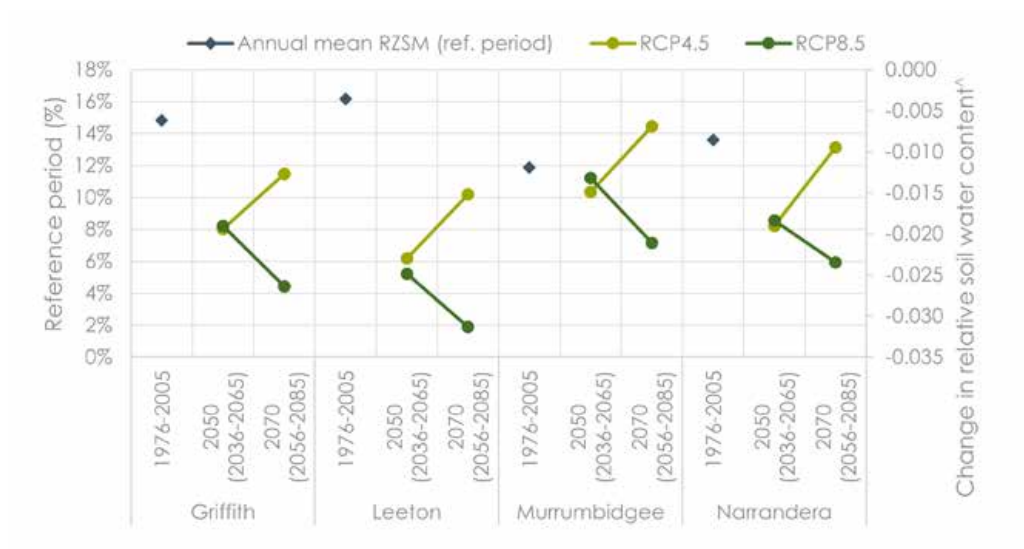


Figure 13 — Annual mean precipitation future climate projections, by LGA

Root zone soil moisture

Root zone soil moisture (RZSM) is presented as a percentage of total capacity during the baseline reference period and as a change of millimetres per year of the climate adjusted scenarios.



Root zone soil moisture

Under all four future scenarios modelled, each is set to see an annual reduction in root zone soil moisture. However, under the RCP4.5 scenarios, the reduction does lessen from 2050 to 2070. Under the RCP8.5 scenarios, the annual reduction increases to 2070 (Figure 14 — Root zone soil moisture future climate projections, by LGA). The reduction, both in 2050 and 2070, is most intense in Griffith and Leeton.

Figure 14 — Root zone soil moisture future climate projections, by LGA

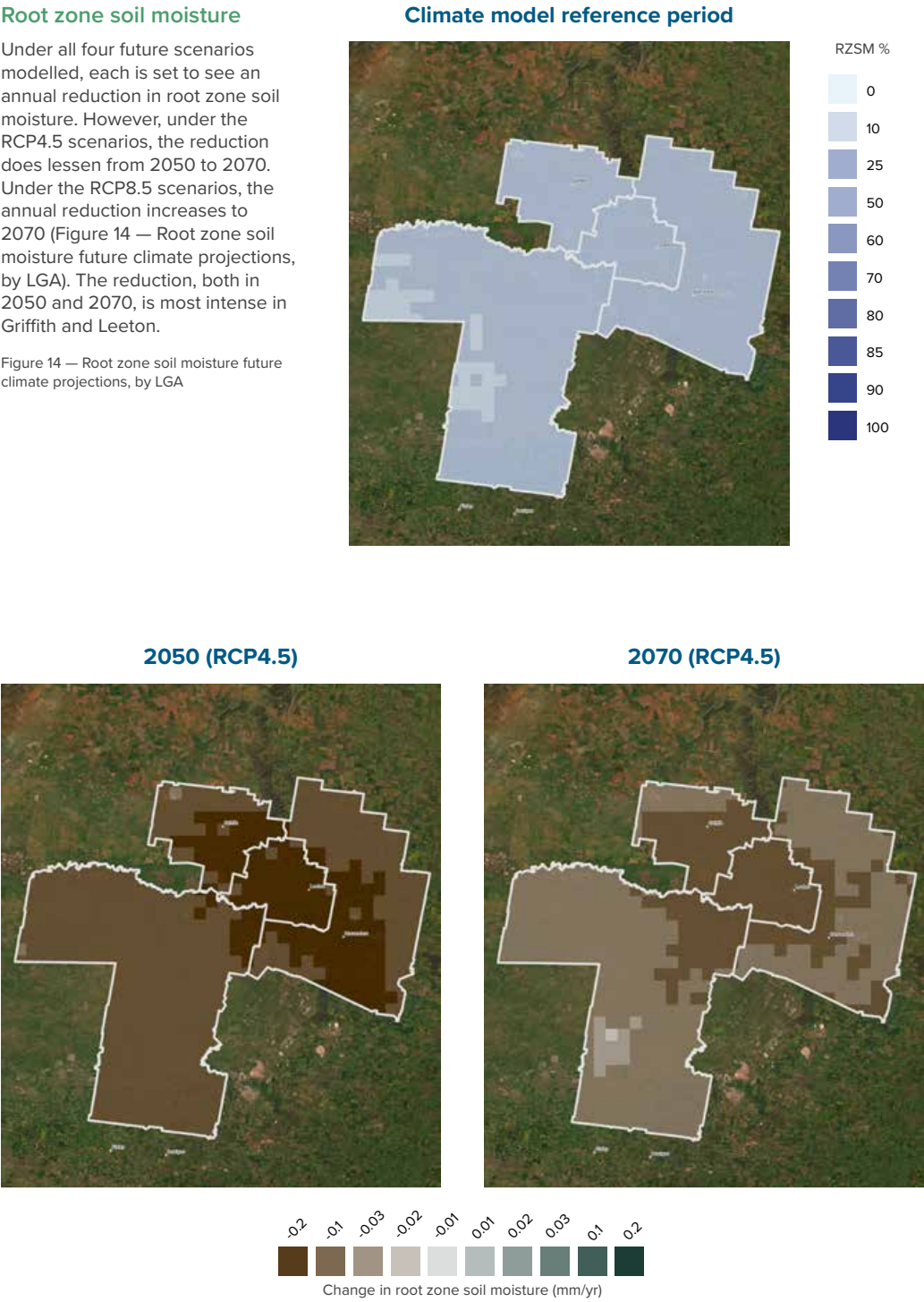


Figure 15 — Annual change in root zone soil moisture

What does the climate data tell us?

The region will continue to be susceptible to the impact of drought which can be protracted events, such as the Millennial drought, or relatively shorter time periods of high intensity.

Climate projections indicate an increase in drought risk, which worsens in the far-term under a higher emissions scenario.

Potential increases in frequency and severity of drought conditions will be largely driven by temperature, evapotranspiration and reduced soil moisture in the Western Riverina region.

Relevance of climate change in the neighbouring Alpine region

In addition to the climate projections for the Western Riverina region, climate change impacts in the Snowy Mountains (Alpine region) must also be considered given the reliance of inflows directed from the Snowy Scheme into the Murrumbidgee catchment. Over time, reduced snowpack, rainfall, changes to landform, erosion and runoff, and increased temperatures in the Snowy Mountains region is likely to have an impact on the Western Riverina.

The water from the Alps which flows through to the Basin and the irrigation schemes is of high significance, supporting ecosystem services of national economic, social and environmental importance. With the water held in high regard now, every gigalitre flowing from the Alps catchment to the Basin is likely to be more important in the future.

Climate projections for the NSW Alpine region indicate continued warming and drying – with winter temperatures increasing by more than 2°C in the far future and spring rainfall projected to decrease by 20 percent in the far future.

Through an increase in temperatures and changes to rainfall patterns, there are subsequent impacts to the quantity of both surface water and groundwater, with some projections showing that, across the Alpine region, there is likely to be a reduction in surface-water run-off in the future.

Climate change threats to the natural condition of the catchments may also impact high quality water delivery from the Alps. This includes water yield, water flow regimes and water quality.

Further investigation is needed to understand how the projected reduction in surface water run-off in the Alpine region, and other influencing processes on water yield and delivery within the Alps, interacts with the run-off generally received through the Murrumbidgee catchment. With the Murrumbidgee and Murray water catchments receiving inflows from the Snowy Scheme under the Snowy Water Licence, future reviews based on building a climate-based understanding will need to be considered.

Clear reliance is evident on the water quantity and quality from the Alpine region to other catchments, importantly the Murrumbidgee catchment, and broader considerations to the contribution it makes to agricultural production and other industries in the Basin.



Image: 'A Country Life' (Brett Collins)

Western Riverina Regional Drought Resilience Plan

Trends, stressors and shocks

To support preparedness and planning for drought we must also consider other trends, stressors and acute shocks, beyond the climate, that may amplify drought impacts into the future. These can influence our resilience to different conditions, circumstances and scenarios. It is also important in terms of governance arrangements and strategic priorities to ensure broader actions are cognisant of interaction with drought in our communities.



Economic

- Water policy and water allocation changes
- Cost of farming with rising inputs
- The state of the national economy, commodity prices, market volatility and interest rates
- Fuel prices and transport costs
- Positive impacts of strategic road connectivity on market access
- Major project investment decisions, both private and public
- Changing farm enterprise ownership models and their scale
- Energy access
- Transition to renewable energy sources



People and community

- Service availability, particularly health and community services
- Workforce shortages, and worker attraction and retention to regions
- Demographic shifts in population (ageing population and youth retention)
- Housing availability and new dwelling supply
- Costs of living pressures and local discretionary spending
- Urbanisation and population mobility trends



Environmental

- Widespread invasive species
- Feral animal numbers
- Land use conflicts, particularly on primary production areas
- Loss of riparian habitat
- Water management within the Murray-Darling Basin
- Water infrastructure projects and funding decisions
- Soil erosion
- Water licensing arrangements to improve environmental flows
- Climate change

Western Riverina in Australia's future drought context

At the national level, a consequence of the most recent drought (2017-2019) was increased pressure on Australia's food security. Grain was imported to feed stock and the nation. Similar imports in 2006-7, 2003-4, and 1994-5 correlate to the worst drought related cropping years in recent decades. Since this event in 2019, Australia's population has grown from 25.5 million to 27.2 million, with continued growth projected. This growth adds to the demand on available water and increases the pressures on food insecurity into the future. Any response to drought, particularly within the productive area of the Western Riverina, fits within the context of a strategic view of national food and water security. This would consider the potential scenarios of water availability, as well as the related potential biosecurity risks. Subsequent revisions of the Western Riverina Regional Drought Resilience Plan will monitor the development of a national policy response to this trend, and reflect community views to advocate more on this significant issue.

Our drought resilience

Drought resilience can be considered against three macro indicators, each with their own influencing factors. Considering how this plan can address all these factors ensures we can address all aspects of the system.



Economic resilience

Continuity
Employment
Diversity



Environmental resilience

Infrastructure and built assets
Natural processes
Land management



Social resilience

Personal wellbeing
Decision making capacity
Community wellbeing

A snapshot of vulnerability and resilience to drought

The Australian Bureau of Agricultural and Resource Economics and Sciences' (ABARES) has developed an index that ranks remote, rural or regional agriculturally dependent communities (at the LGA level) according to their potential to be adversely affected by drought.

The result is a snapshot based on drought exposure and drought sensitivity at the farm level (farm sensitivity), the reliance on employment in agricultural production industries (community sensitivity), the adaptive capacity of a LGA to drought based on economic diversity, and a final combination of the potential drought impact.

The data comprises data variables and indicators which have been combined and ranked. Scores are not necessarily representative of the magnitude of impact, rather it positions the sensitivity with respect to other LGAs assessed. There is a strong link to employment in agricultural production, particularly for community sensitivity which may not be representative of broader community sensitivity detailed throughout this plan.

Community Vulnerability and Resilience to Drought Index (measured from 0 [lowest] to 1 [highest])				
LGA	Farm sensitivity	Community sensitivity	Economic diversity	Potential drought impact
Griffith City	N/A*	0.30	0.53	0.20
Leeton Shire	N/A*	0.27	0.59	0.18
Murrumbidgee	0.76	0.58	0.16	0.90
Narrandera Shire	N/A*	0.32	0.47	0.22

* Insufficient data for broadacre farm samples in the region

The ABARES CVRDI scores indicate for the region:

- Some evidence of farm-based exposure, which is linked to both exposure to climate variability, and the effects that has on farm outcomes
- A low to moderate level of community dependence on agricultural activity in terms of employment
- Some demonstrated economic diversity highlighted by a strong regional centre offer, service industry and economic output
- A low to higher level of overall potential drought impact, particularly in Murrumbidgee noting it has a particularly strong agriculture sector with high value agriculture commodity output (while potential drought impact measures farm sensitivity and community sensitivity, whether there is lasting loss or harm depends on a community's adaptive capacity).

While the region is susceptible to future drought impacts, and this is more apparent for Murrumbidgee compared with other LGAs, its economic diversity supports a level of adaptive capacity in some areas of the region. Levels of community connection and social capital, along with diversified economic development opportunities, offer key opportunities to aid immediate as well as long-term drought resilience. Murrumbidgee's proximity to the regional centres of both Griffith and Albury potentially moderate drought vulnerability scoring through access to employment and services in relative proximity.

The above provides a snapshot of community vulnerability to drought, though a number of limitations are noted. As this plan details, impacts in the Western Riverina extend to broader pressures on water availability, and subsequent impacts to community and economic outputs.



Drought action plan

The drought action plan for Western Riverina incorporates priorities for drought resilience across strategic pathways for action. The action plan provides:

- Details of specific actions against each pathway
- The alignment of the action to an implementation pathway
- Anticipated stakeholders

Timeframes are indicative and are dependent upon opportunities and timing for funding and other variables.

While Council is listed next to a number of actions, this is generally in anticipation of advocating and leading next steps of the action rather than sole responsibility in delivery. Many of these actions are of a scale or fall outside council operations and require funding and resourcing from other levels of government or input from industry.

A program logic approach was used to match the drought resilience needs illuminated by the engagement feedback with pragmatic actions. The degree to which the actions contribute to our movement along the resilience 'theory of change' journey is also detailed. This is about whether the actions 'absorb, adapt or transform' how we collectively prepare for and grow our resilience to drought effects. This scale also helps us to understand the level of effort and the timeframes associated with each action.

Pathways for change

This drought action plan establishes a framework to guide focus and efforts in response to community needs and community strengths highlighted through engagement. The action plan spans six strategic pathways, reflecting the three systems of drought resilience of community, economic, and environmental characteristics. These strategic pathways are:

- 🌊 Anticipate water availability
- 🏢 Proactively manage business interests
- 🌱 Support off-farm diversification
- 📍 Grow local co-operative service provision
- 👥 Support community cohesion
- 🌳 Embed environmental stewardship and sustainable agricultural practices

These pathways can be approached at different scales. This can be by different actors and through a range of mechanisms over time from transformative resilience actions at a large scale to proactive resilience actions by individuals and the more formal or common pathways.

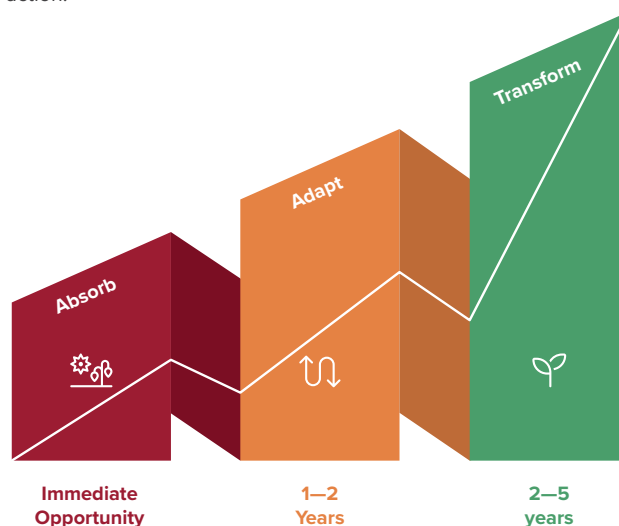


Figure 16 — Resilience theory of change

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**Pathway 1 –
Anticipate water availability**

The region’s social and economic resilience is inextricably linked to water availability. Reducing the inherent uncertainties of water availability is critical to the ongoing sustainability of the region.

This is particularly the case with the evolution of the water market in NSW, whereby water allocations have been decoupled from land ownership. The ability to trade water unlocks an additional revenue stream for those farmers who hold those allocations, but it also creates challenges for those farmers who have to purchase both land and water allocations. In times of drought, they could be left with a farm (and its associated debt obligation) and having to purchase water temporarily at a high price due to reduced availability.

Key actions under this pathway to build resilience include:

- Increasing collective understanding of water market dynamics – including communicating the risks of temporary allocation purchases
- Improving water allocation forecasting
- Improving access to and awareness of climate forecasts for dryland farmers
- Considered and well-informed planning for water infrastructure programs and management

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
1.1	Develop an agreed approach for drought fodder management/distribution with improved governance arrangements overseen by a local independent authority (e.g. using Stock Saleyard operations as a model)	Adapt to strengthen preparedness and ensure coordination of processes	Council
1.2	Councils to review town water supply restrictions policies and approaches to providing emergency water supplies, recognising the wellbeing benefits of towns being “green” even during dry times, and include water use efficiency approaches.	Adapt to strengthen preparedness and support common good outcomes	Council
1.3	Undertake an independent assessment of the Lake Coolah development proposal with consideration to multiple objectives including flood mitigation, wetland enhancement and water delivery system efficiency	Transform the long-term economic stability through catalyst projects	Council
1.4	Councils to review stormwater management and town sewerage discharge strategies and approaches to maximise opportunities for reuse of water resources	Adapt to strengthen preparedness through continuous improvements	Council
1.5	Work with International Commission on Irrigation and Drainage Australia and Irrigation Australia to promote the bench marking of irrigation scheme delivery efficiencies, and explore a “5 Star” approach – that will support regional marketing of agricultural products	Adapt to leverage existing strengths	Industry groups
1.6	Deliver continuing education / training program on the operation of water markets, with irrigators as the target audience	Adapt through increased local understanding of the system	Industry groups Irrigators
1.7	Work with the NSW Government to introduce training and programs for primary producers to further develop rainfall and weather intelligence using drought signals / indicators for use in conjunction with soil moisture and other weather data.	Adapt through improved processes to complement planning	Council State Government
1.8	Promote engagement with the One Basin CRC projects delivered through the Griffith Hub, and explore the possibility of a Centre of Irrigation Excellence building upon the existing Irrigation Research and Extension Committee model.	Transform through increased capacity and recognition of local strengths	Council



**Pathway 2 –
Proactively manage
business interests**

Strength of small business is a feature of the region whether it's fuel, cafes, hairdressers, mechanical or the local accountant. While drought generally impacts farmers first, the flow-on effects are felt across towns and communities through business impacts and in-turn, employment and expenditure.

Resilient, diverse and prepared businesses are better positioned to ride the peaks and troughs when they are planned for and anticipated. A range of pressures exist outside of drought times which requires strategic long term planning to address, while more agile initiatives provide interventions during drought, and are effective where planned for in advance. Priority action areas include:

- › Support for businesses to adapt and prepare
- › Ensuring the region has the right skills, and attracts new skills for confident business growth
- › Ensure business has the information they need to operate effectively.

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
2.1	Investigate the reintroduction of previous Services Australia farm exit program	Adapt to facilitate business transition	Council Services Australia (Federal Government)
2.2	Investigate potential to fund local application (using a co-operative approach) of the NSW Farmers' Federation "Ag Career Start" program	Adapt to strengthen preparedness and build local capacity	Council
2.3	Undertake a more detailed analysis of economic flows / benefits done by ABARES prior to the next drought (taking milling and downstream activities into account)	Adapt to strengthen preparedness through understanding of the system	Council
2.4	Undertake a review across all the local education service provider course and curriculum offerings to meet local agricultural industry and supply chain needs including opportunities for rural cadetships, apprenticeship advisors, and how to increase housing with a link to trade apprenticeships	Transform the long-term economic stability through catalyst projects	Council TAFE NSW Local education providers
2.5	Support small businesses with computer and internet training	Absorb immediate action to support community capacity	Council State Government
2.6	Promote the benefits of "lifestyle" driving the purpose of business / financial / succession planning, and promote the benefits and delivery of business plans e.g. for improved access to capital	Adapt to strengthen preparedness	Council
2.7	Promote drought assistance programs or financial subsidy programs to "supply chain" businesses when they are impacted by agricultural clients who are impacted by drought	Adapt to support endurance during drought	Council Business owners and operators
2.8	Engage a project officer to help local businesses (small to large) develop their own drought resilience plan - and facilitate access to grant funding from various agencies	Adapt to strengthen preparedness	Business owners and operators Council
2.9	Provide training to local providers on responding to tenders	Absorb immediate action to support local capacity	Council
2.10	Provide local support to Services NSW / Concierge service to provide opportunities for workers displaced by drought to get other local short-term work	Adapt to strengthen preparedness and mobilise workforce supply	Council State Government
2.11	Promote the need to broaden the rules for "backpacker" workers to attract more workers for agricultural related industries	Transform the long-term economic stability through catalyst projects and ensure workforce supply	Federal Government
2.12	Promote opportunities in alternate industries that suit available soils, water and climatic conditions.	Transform the long-term economic stability through catalyst projects	Council State Government
2.13	Review / update regional economic development strategies to include promotion of non-water based industries, agricultural industries that align with available soils and water, and others that take advantage of available products	Transform the long-term economic stability through catalyst projects and diversification of economy	Council State Government
2.14	Undertake regional internet/phone service audit for digital access, along with an energy access audit and advocate for improved connectivity	Absorb immediate action to inform advocacy of key barriers	Council
2.15	Advocate for improved consistency in funding for the Rural Financial Counselling Service to support local business operators to take proactive steps toward enhanced drought resilience	Absorb immediate action to provide continuity of services	Council
2.16	Develop a "Generation Ag Link" program modelled on the CSIRO program "Generation STEM Link"	Adapt to strengthen preparedness by building capacity and local industry understanding	Industry groups



**Pathway 3 –
Support off-farm
diversification**

The region boasts many economic development opportunities which over time will offer varied income and productivity opportunities. Some of these opportunities are truly transformative and offer long term prospects for change, growth and stability. As an agriculturally based economy, there is benefit in:

- Leveraging existing tourism assets as a major economic pillar
- Building the financial strength of all businesses regardless of sector or scale
- Diversifying the regional economy through manufacturing and value adding agriculture
- Keeping our towns active and attractive.

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
3.1	Councils to have a strategy for future land release and development, potentially adopting a “cooperative model” approach	Absorb immediate action to identify site potential	Council
3.2	Build on the Regional Arts Development Program - Regional Cultural Tourism report	Absorb immediate action to build existing work foundations	Regional Arts Network Council
3.3	Advocate for public service remote area benefits to attract and retain critical services and workforce	Transform the long-term economic stability through continuity of services	Council
3.4	Develop an Ag Industry focussed “Job Keeper” type program (taking principles from the Farm Household Allowance program delivered by Services Australia) for application during drought.	Transform the long-term economic stability through continuity of operations	Industry groups State Government
3.5	Promote agritourism and a viable diversification strategy	Adapt to strengthen preparedness through economic diversification	Council Tourism organisations
3.6	Promote value added manufacturing for existing and emerging agricultural commodities, such as almonds, grapes, citrus, sugar plum etc	Adapt to strengthen preparedness through economic diversification	Industry groups
3.7	Investigate a Geographic Indicator designation that would support sustainability accreditation for the Western Riverina agricultural industries	Adapt to leverage existing strengths	Industry groups
3.8	Develop public works / maintenance program of works e.g. town revitalisation, roadside clean-up / maintenance, farm clean outs to be done during drought	Adapt to inform preparedness through ready made actions with impact	Council
3.9	Schedule training during “down time” to upskill people in the agricultural industry	Adapt to strengthen preparedness	Farm business owners and operators
3.10	Outside of drought, promote availability of water in towns as an opportunity for new businesses – include in Economic Development strategies	Adapt to strengthen preparedness through economic diversification	Council
3.11	Promote National and State support for regionalisation strategies such as the Regional Development Australia “Country Change Riverina and Murray” strategy (to encourage movement from cities to regional areas)	Transform the long-term economic stability through continuity of services	Federal Government State Government
3.12	Facilitate affordable housing, fast track land development, explore community cooperative approach and private / public partnerships with Council	Transform the long-term economic stability through catalyst projects	Council State Government
3.13	Upskill and build capability of local providers in diverse business areas to allow them to compete in the tender and procurement process during drought that support broader business offers.	Adapt to strengthen preparedness through economic diversification	Council



**Pathway 4 –
Grow local co-operative
service provision**

The co-operative model of business and service provision in this region is truly unique. It is not found in many other parts of Australia at such a significant scale and could support the region's long-term resilience and prosperity. It is borne from a generational legacy of the collaboration needed to operate and maintain the complex irrigation schemes that thread through the landscape. Without co-operation, in this landscape, water availability would not exist.

Expanding this co-operative model beyond its irrigation roots is already evident, with pubs and rice mills already emerging to trade using this model of ownership and operation. Extending this model further into retail, grocery, aged care, and possibly even housing is arguably not too much of a stretch to achieve.

This pathway seeks to focus on this demonstrated strength of collaboration and cooperation in Western Riverina communities. This builds on these existing tangibles and non-tangible cultural assets to maintain baseline service provision for key sectors, and support social and community fabric and morale during drought times through enabling mechanisms that drive locally cooperative outcomes.

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
4.1	Establish ongoing “Wellbeing Hubs” connecting community organisations to landholders, business and the community and develop action plans for priorities of each hub	Transform into the long term supporting continuity of services and community network capacity	Community organisations Council
4.2	Develop cooperative structure models for a range of situations along with guidelines to encourage people and corporations to co-invest in community services	Transform into the long-term supporting continuity of services and community network capacity	Community organisations
4.3	Promote programs, financial planning advice and funding available from providers including Services Australia	Adapt to broaden clarity and uptake of programs	Services Australia Council
4.4	Councils to consider the provision of more ‘drop in’ style community services to support locals especially in drought when costs can prohibit travel	Absorb to strengthen local access to support	Council
4.5	Link community-based investment in local infrastructure (e.g. ongoing social activities) with LGA programs including for social connectivity and for places of refuge linked to floods / bushfires etc.	Adapt immediate actions to support ongoing preparedness	Council
4.6	Undertake an audit of Council roads to identify priorities for an “Infrastructure Betterment” program to make access to farms more resilient to droughts, floods and other events	Adapt to direct future funding and support movement networks	Council Landowners



**Pathway 5 –
Support community
cohesion**

Cohesive and connected communities are a key ingredient to support drought resilience. Drought, as opposed to other hazards, can divide communities through isolation. Strong community connections are therefore critical in ensuring community care and wellbeing, looking out for mates and providing mutual relief.

This was a clear priority identified by the community through the plan engagement process. Community connection, participation and identity are already strengths of the Western Riverina and need to be maintained and bolstered.

This pathway seeks to build on the existing community strength of the Western Riverina region to support cohesiveness of the social fabric and morale during drought times by:

- › Supporting strong social cohesion
- › Attracting and retaining social and cultural events
- › Maintaining an inclusive community.

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
5.1	Include delivery of hard copy documents to households in communications strategies (where requested)	Absorb immediate action support accessibility	Council State Government
5.2	Advocate for additional subsidies during drought for youth sport and support similar initiatives such as “Active Farmers”	Adapt to utilise existing initiatives and programs	Council
5.3	Councils and community groups to drive / facilitate / promote volunteerism and develop a steering committee (or similar) to direct volunteer deployment in times of drought	Adapt to strengthen preparedness and capability to respond	Council Community groups
5.4	Develop written and visual history of the region (providing a way for intergenerational involvement and connection)	Transform into the long term through retaining regional identity	Council
5.5	Develop a list of groups and associations seeking volunteers, based on examples such as SES community actions teams – link to “Community Hub” Actions	Adapt to strengthen preparedness and capability to respond	Community groups
5.6	Council to promote and deliver free “Big Social” events	Adapt to strengthen preparedness and support role of community networks	Council Community organisation
5.7	Support existing and promote new “Food Festival” programs to show case locally grown products – invite celebrity chefs	Adapt the long-term economic stability through catalyst projects	Council Destination groups
5.8	Develop a local “Drought Self Help” kit (similar to Red Cross kit)	Adapt to strengthen preparedness	Council
5.9	Build on and expand the “Teach the Teachers” program relating to agricultural production and experiences of living in rural communities	Adapt to strengthen preparedness and connection to the region	Council Industry groups Schools
5.10	Support excursions from city schools to the region and continue to support “Boys to the Bush” program	Adapt to strengthen preparedness build understanding across region to urban areas	Council Community organisations Department of Education
5.11	Explore opportunities for mentor programs for both men and women, and promote existing programs focused on rural leadership and change makers	Adapt through capacity building of locals	Council Community organisations
5.12	Support delivery of drought resilience programs within schools	Absorb immediate action to strengthen preparedness	Schools
5.13	Continue to invest in the maintenance and enhancement of community facilities to support community cohesion during times of drought	Absorb immediate action to strengthen preparedness	Council
5.14	Work with Indigenous groups to “co-solve” water issues	Transform the long-term economic stability through catalyst projects	Council First Nations groups



**Pathway 6 –
Embed environmental
stewardship and
sustainable agricultural
practices**

The health of the landscape is integral to our economic and community wellbeing. Retaining soil moisture in the landscape and topsoil retention are clear drought impact reduction pursuits. Pest and weed management offer further opportunities to stem landscape degradation.

Areas for action include supporting land management and maintaining and enhancing biosecurity.

ID	SPECIFIC ACTION	IMPLEMENTATION PATHWAY	STAKEHOLDER(S)
6.1	Promote and support Landcare in providing opportunities for landholders to demonstrate the benefits derived from their business and land practices (including use of photo diaries)	Adapt to support resilient landscapes	Landcare
6.2	Support Landcare and associated programs and advocate for continuity of funding on programs that focus on climate ready revegetation and improving native seed supply	Adapt to support resilient landscapes	Landcare
6.3	Promote a policy for fixed riparian zone / corridors for reconstruction and restoration	Adapt the long-term economic stability through catalyst projects	Council
6.4	Support actions for on-going carp management within the region's waterways	Absorb immediate actions to support ongoing efforts	State government agencies
6.5	Advocate for and ensure understanding of the impacts of future reviews of the Snowy Water Licence	Adapt into long-term to maintain economic stability	Council Industry groups
6.6	Link Landcare with Regional Services Australia to identify funding opportunities for involvement in farm management professional development opportunities	Adapt the long-term economic stability through catalyst projects	Landcare
6.7	Promote the landscape and production benefits of sustainable and restorative agricultural practices and focus on driving buy-in through initiatives such as mapping of land use capability.	Adapt to support resilient landscapes	Industry groups Landcare
6.8	Work with First Nations peoples to bring First Nations ecological practice back to Country	Transform through actions building partnerships and resilient landscapes	First Nations groups
6.9	Support the establishment of Landcare groups across each of the council areas	Adapt to support resilient landscapes	Council Landcare
6.10	Develop a program to focus on improvements to road side revegetation for connected corridors	Adapt to support resilient landscapes	Council

Implementation






The Western Riverina Regional Drought Resilience Plan relies on collaborative implementation approaches involving a range of stakeholders.

The action plan for drought resilience spans the drought cycle and its interaction with the community, that is before, during and recovery from drought. The actions to implement cover levels of government, community and industry groups, service providers, not-for-profits, landowners, and local communities with actions that have effect at different points of the drought cycle. This includes short, medium and long term opportunities, and interventions that are strategic by strengthening preparedness or are agile and ready to be implemented when enduring drought.

Pathways implementation

The purpose of the action plan is to inform future drought funding and ongoing preparedness across the region. Stakeholders work together regionally to build drought resilience in the economy, environment and our communities, proactively and pragmatically.

The action plan has been drawn together through community expression, existing initiatives and background data. In developing this action plan, it is noted that:

-  actions are purposefully listed with multiple stakeholders, and unspecified timeframes or funding to acknowledge that delivery is dependent on a range of variables
-  roles and responsibilities are flexible, including for local governments. The plan is owned by the region. Any stakeholder can start an action that is within their capacity
-  implementation will occur through participation of all stakeholders over time as priorities, resources and funding arise
-  some actions are indeed underway by various stakeholders, the purpose of maintaining them in the action plan, is that the community has advised that the action is integral to drought resilience.
-  as a regional plan, the actions are collective and collaborative

Stakeholder roles in implementation

DESCRIPTION

An **advocate** actively supports a position, action or policy. The task is outside the advocate's jurisdiction, capacity or resourcing and advocacy is required to engage with those parties with capacity to deliver. For example, telecommunications advocacy.

A **partner** joins others in a common cause or action where roles and responsibilities are shared across areas of expertise. Each partner brings an element to the action for joint delivery. For example, region-wide strategic initiatives.

A **lead** is in control of an action. The action may still involve partners or other roles, but the action is reliant upon a lead party due to their technical or other expertise. E.g. Health or counselling matters

An **owner** is the only party that can undertake or permit the action. E.g. local government as public asset owners

A **supporter** is united with others in the need or benefits of the action but potentially does not have a major role. The action is led or owned by others. E.g. A supporter may provide assistance in kind, technical advice or donations to action leaders

A **stakeholder** is anyone who has an interest in the project, program or action. Stakeholders will have varying degrees of involvement from owner to advocate and all points between.

A **deliverer** is responsible for implementation and outcomes of an action or funded program. e.g. Community agency delivering social aid programs.

A **funder** provides the funding arrangements. The party is not involved with scoping, executing or delivering the program but may require some outcome reporting or evidence. e.g. the government grant funding for a pest control program delivered by others.

Governance structure

Implementation of the regional drought resilience plan is to be driven by a collaborative and multi-disciplined drought resilience project control group (PCG). Membership will be broadened to provide an integrated and coordinated approach to drought resilience efforts.

This will enable the PCG to adopt agile approaches and shift priorities as needed depending on changing circumstances, and as opportunities arise. Despite this, all actions remain relevant in terms of maximising funding opportunities. This also allows expertise across the strategic pathways, and for partnerships to evolve as funding and priorities arise

A Chair of the PCG will be selected.

A PCG Terms of Reference is to be prepared for its membership to guide its function. The Terms of Reference could include:

- > Role and purpose and connection to the RDRP
- > Stakeholder and membership lists
- > Meeting arrangements, (potentially quarterly) and responsibilities of attendees
- > The circumstances of a quorum and decision making protocols
- > The election or rotation of a chair person
- > An action plan for the first 60 days or 12 months including delivery of the priority actions with the implementation funding; and
- > A process for reflection and nominating next priority actions.

A Memorandum of Understanding may also be required.

PCG meetings should be held in different localities across the region over time.

Monitoring, evaluation and learning framework

The drought action plan incorporates a large suite of projects and actions, some offer immediate opportunity, some are medium-term items and others are longer-term transformational opportunities. Not all actions can be focused on or delivered at once. The 'absorb, adapt, transform' framework will guide the PCG in terms of its implementation and coordination of activities and funding pursuits, and will enable a flexible and agile approach as drought conditions change, guiding the focus.

Other stakeholders are able to use the plan to support funding and grant applications at any time, as desired. Opportunities for collaborative delivery partnerships, where two stakeholders may wish to provide similar projects, should be explored

This system will:

- Provide regular opportunities to define when conditions are changing locally; and
- Catalyse a change in focus to respond to the needs of the changing conditions.

This ensures a level of agility is adopted with regard to the implementation approach. Local governments may wish to apply more objective targets for immediate actions or further incorporate the outcomes of this plan into the local government reporting framework to ensure delivery.

As immediate efforts in response to the action plan are delivered, broader efforts across collaborators is guided in its approach, underpinned by this plan which enables stakeholders to work towards and contribute to regional drought resilience outcomes, including those at the local and property level.

The drought resilience action plan also requires that a 'lessons learned' posture is adopted, ensuring new information, knowledge, approaches and science is rolled into implementation delivery as a guiding principle. This will mean that over time, the drought resilience action plan may be adapted to reflect new learnings and the adjustment of intervention pathways as required. The PCG is responsible to conduct an annual lessons learned review, with changes to inform action moving forward.

The drought resilience action plan has been thoughtfully designed to not only guide collective effort and action but to enable adaptation through ongoing monitoring, evaluation and learning.

The Regional Drought Resilience Plan is a 10-year plan, to be reviewed after five years.

An annual monitoring program to inform adaptive learning is outlined below. Addendums to this plan can be made, to reflect these learnings over time and ensure the document maintains pace with changing circumstances and maturation of drought preparedness activities.

Tracking progress and reporting

Action-based project tracking against the drought resilience action plan, the principles and objectives of the plan should be undertaken on an annual basis. This tracking and reporting shall be the responsibility of the implementation PCG chair, unless otherwise delegated. Likewise, an annual evaluation process will be conducted by the PCG, guided by the evaluation questions that follow.



Image: Jerilderie Grain Storage and Handling

Western Riverina Regional Drought Resilience Plan

Key evaluation questions

These key evaluation questions are high level questions designed to frame the analysis of progress and performance of the Western Riverina Regional Drought Resilience Plan against the above framework. These key evaluation questions may help to structure annual tracking and reporting.

PROPERTY	EVALUATION
Effectiveness and Outcomes	What have been the outcomes (intended, unintended, positive and negative) of the plan implementation process and progress?
	To what extent has progress contributed to or furthered the principles and objectives of the regional drought resilience plan?
	Has the plan been used for or otherwise supported successful funding and grant applications?
	To what extent have stakeholders outside the PCG responded to the plan's content?
	Have any barriers or challenges been identified throughout the implementation of plan, and what solutions to address these have been identified?
Drought resilience maturation	<p>To what extent has efforts in implementing the plan contributed to:</p> <ul style="list-style-type: none"> ➤ Creating stronger connectedness and greater social capital within communities, contributing to well-being and security? ➤ Empowering communities and businesses to implement activities that improve their resilience to drought? ➤ Supporting more primary producers and land managers to adopt whole-of-system approaches to natural resource management to improve the natural resource base, for long-term productivity and landscape health?
Stakeholder engagement	In what ways are the PCG and other stakeholders collaborating and collectively contributing to efforts outlined by the action plan?
	In what ways has the plan provided inclusive involvement across sectors, disciplines and communities?
	In what ways has the plan been able to support individual stakeholder goals, objectives and aspirations with regard to drought resilience?

The reporting may be undertaken using a range of tools to capture experiences and perspectives from across the PCG, allied stakeholders as well as the communities of Griffith City, Leeton Shire, Murrumbidgee and Narrandera Shire more broadly. These tools may include:

- Meetings and event data capture
- Targeted meeting / interviews with stakeholders
- Survey data
- Case studies and data from the PCG
- Media, including social media; and
- Funding and grant applications.

Achieving the plan's outcomes

A further opportunity for the PCG to measure the contribution to or achievement of the plan's outcomes is by using local data to assess specific outcomes. The data sources or indicators will need to be selected by the PCG and can provide insights as to how the plan is tracking against the resilience theory of change. Outcomes include (but are not limited to):

STRATEGIC PATHWAYS	OUTCOMES
Anticipate water availability	1 Community infrastructure is resilient and helps to reduce disruptions
	2 Capacity to make informed decisions through local knowledge, access to data, intelligence and innovate tools is increased
Proactively manage business interests	3 Agricultural productivity in the region is sustained
	4 Increased capacity to meet local procurement demands and local employment
Support off-farm diversification	5 Employment loss is avoided or minimised, ensuring livelihood are maintained
	6 Reduced decline of gross regional product relative to: <ul style="list-style-type: none"> > Non-drought periods > Previous drought periods > Other regions in NSW, Victoria and South Australia
Grow local co-operative service provision	7 Community partnerships are strengthened through program delivery
	8 Services are retained in the region, and offered in local centres
Support community cohesion	9 Capacity and capability of community groups is strengthened
	10 Mental health services are available and are accessible
Embed environmental stewardship and sustainable agricultural practices	11 Environmental degradation of landscapes and waterways is reduced throughout and emerging from drought
	12 Increase in activities relating to environmental restoration

Learning

Regular (annual) monitoring provides the ability for reflection and learning. The progress tracking and reporting methodology, using key evaluation questions, will present specific insights in terms of those opportunities to build in 'lessons learned' through engagement across stakeholders with a role in drought resilience. These lessons should, on an annual basis, be contemplated with regard to the drought action plan to determine any relevant updates, new insights, intelligence and technologies that can be integrated to ensure the action plan keeps pace with a growing drought resilience maturation across systems and sectors.

This process will ensure the action plan remains a 'live document' that appropriately supports and services the needs of all stakeholders and importantly, those of the Western Riverina communities in preparation for, endurance of, and recovery from drought.

Concepts to guide adaptive learning as part of plan implementation are included at Appendix B. These items will help navigate maturation of this plan over time.

Appendix A — Drought history

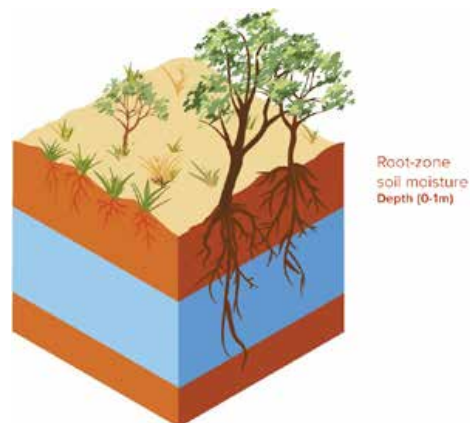
Precipitation and root zone soil moisture are considered as indicators of drought according to the Bureau of Meteorology's Australian Water Resources Assessment Landscape (AWRA-L) service. Root zone soil moisture is a calculation of the upper and lower soil layers in the AWRA-L, which represents the water-holding capacity of the top one metre of soil. Root zone soil moisture and precipitation rates are each useful indicators of future drought potential.

Locally, some of the most impactful periods of drought include the late 1910s, the World War II drought, 1967, 1982 to 1983, 2006 and the 2017-2019 drought.

Some of the continent's most impactful droughts in recent recorded history have affected the region. Here, we consider the significant drought periods identified by the Bureau of Meteorology:

- > 1914 to 1915
- > 1937 to 1945 (World War II drought)
- > 1965 to 1968
- > 1982 to 1983
- > 1997 to 2009 (Millennium drought)
- > 2017 to 2019

Below, we consider these droughts and the changes in conditions against a present-day baseline of 2002 to 2022*.



(Source BoM, 2024)



Image: Irrigation channel Leeton Shire (David Single)

Western Riverina Regional Drought Resilience Plan

1914-1915

Nationally, this drought was short but notable, primarily due to the failure of national wheat crop. This drought was driven by a strong El Nino, with drought conditions first becoming evident in 1914. Rains improved in 1916 but began to decrease again over the subsequent years (1918 and 1919).

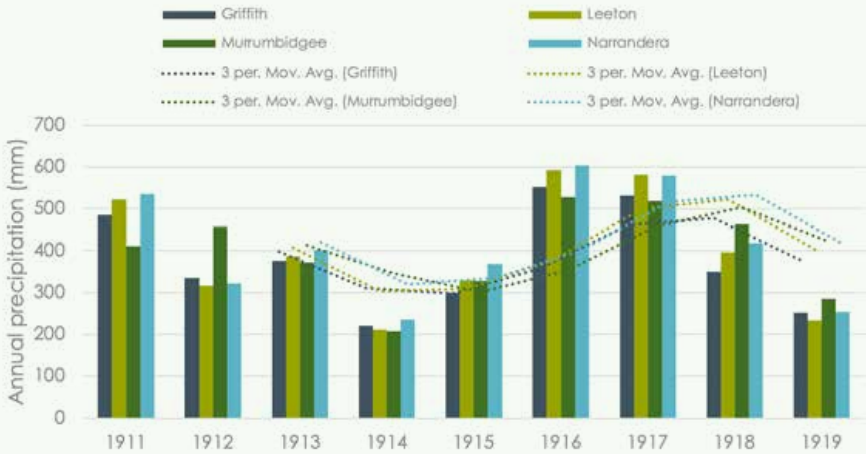


Figure 17 — Yearly precipitation (absolute), by LGA (1910 to 1918)

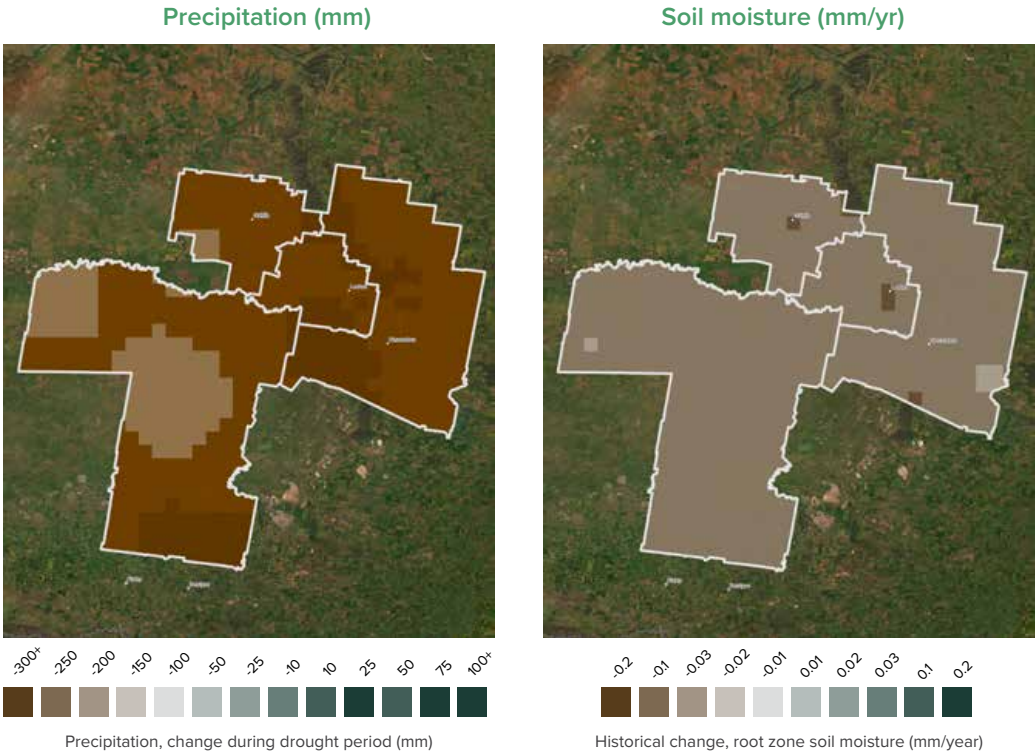


Figure 18 — Changes in conditions during drought against a present-day baseline of 2002 to 2022

1937 to 1945 (World War II drought)

This drought period was characterised by several breaks (1939 and 1942-1943), but significant periods of dryness. Rainfall rates were lower in 1937-1938 and 1940-1941. For the Western Riverina, 1940 was the most notable year, with extremely low rainfall totals across the entire region.

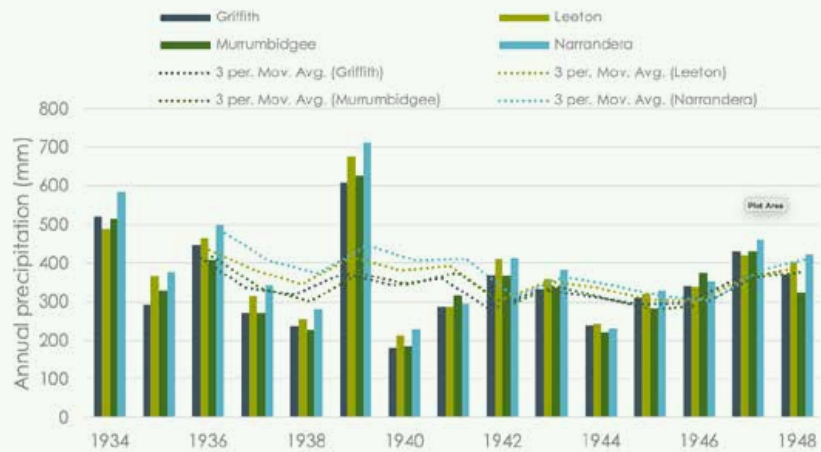
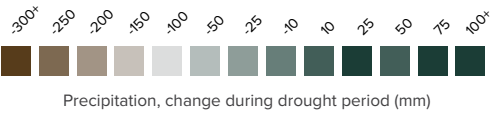


Figure 19 — Yearly precipitation (absolute), by LGA (1934 to 1948)

Precipitation (mm)



Soil moisture (mm/yr)

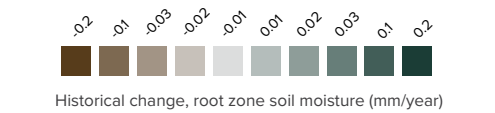


Figure 20 — Changes in conditions during drought against a present-day baseline of 2002 to 2022

1965 to 1968

The 1960s was generally dry across the continent. Drought developed in 1964 in northern New South Wales and had extended across most of the country by the following year. This was evident across the region, with lower rates of rainfall and soil moisture across much of the region. 1967 was the most severe year, with annual rainfall rates across each LGA below 200 mm.

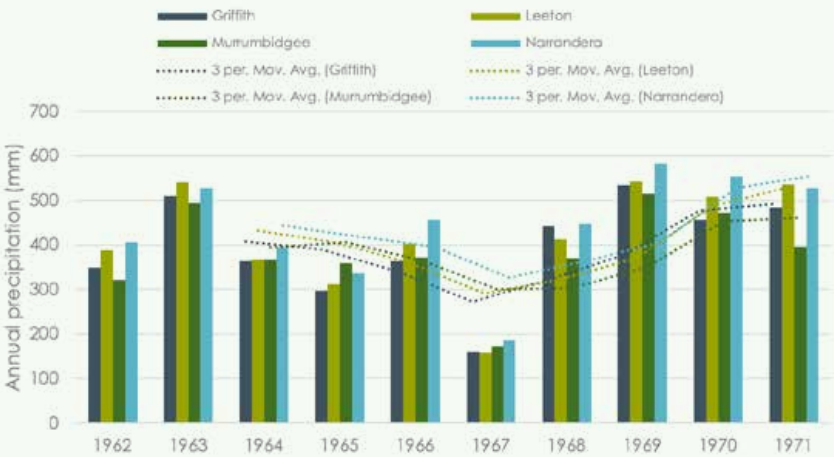
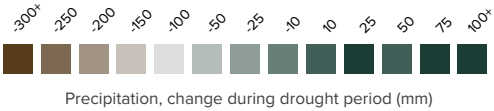
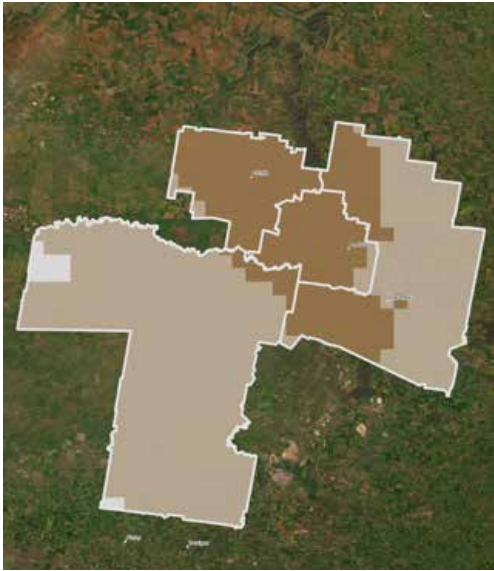


Figure 21: Yearly precipitation (absolute), by LGA (1962 to 1971)

Precipitation (mm)



Soil moisture (mm/yr)

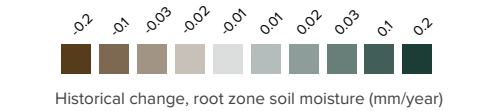
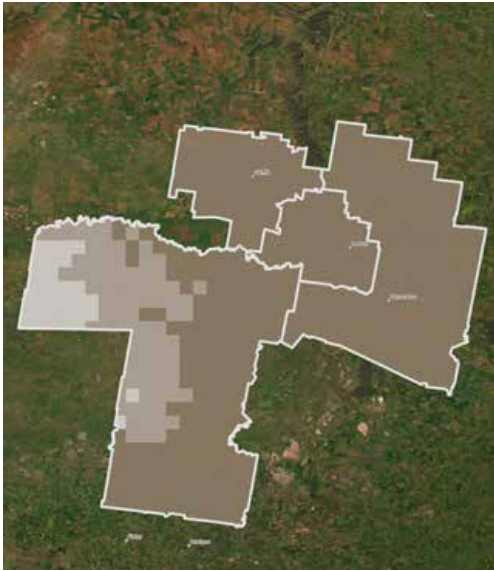


Figure 22: Changes in conditions during drought against a present-day baseline of 2002 to 2022

1982-1983

Despite being only one year long this was one of Australia's most severe droughts in the 20th century. A very strong El Nino led to these drought conditions. The region experienced widespread dryness.

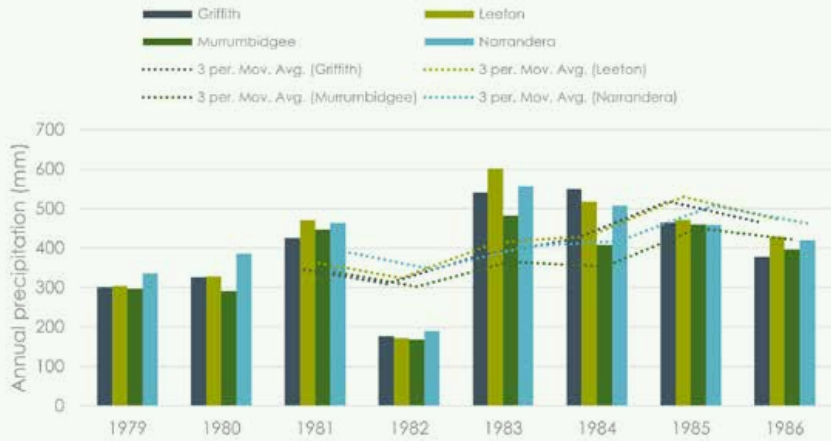


Figure 23: Yearly precipitation (absolute), by LGA (1979 to 1986)

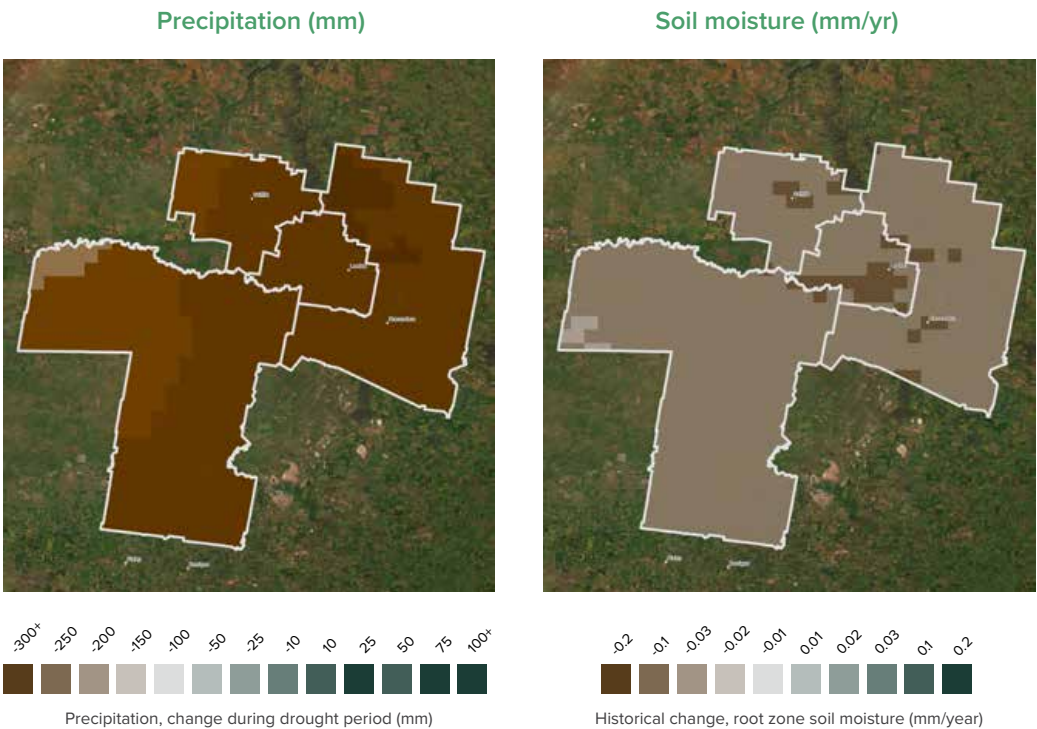


Figure 24 — Changes in conditions during drought against a present-day baseline of 2002 to 2022

1997 – 2009 (Millennium drought)

The Millennium drought was a long-lasting period of dryness, most severe in densely populated areas of the south-east and south-west of the country. For the Western Riverina region, the beginning of this period was relatively unimpactful, as from lower levels in 1997, based on rainfall and soil moisture figures. It is not until 2001 when there is a dry spell into 2005, and then a severe dry year in 2006.

Editor's note: The maps below show significant rainfall and higher soil moisture over this period, despite it being identified as a drought. This discrepancy is likely due to the reference period used to produce these maps (2002 – 2022) and that there was significant dryness in the latter half of that period. This result is then compounded by the short-lasting periods of rainfall decline during this long drought period (1997 – 2009). Therefore, leading to the appearance of increased rainfall and soil moisture compared to the reference period.



Figure 25: Yearly precipitation (absolute), by LGA (1994 to 2012)

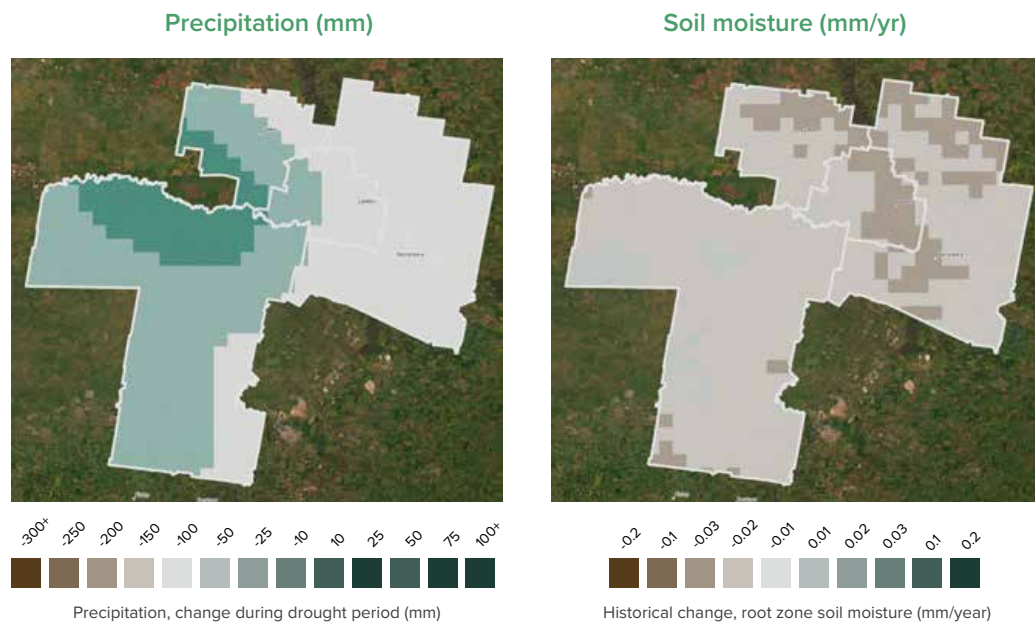


Figure 26: Changes in conditions during drought against a present-day baseline of 2002 to 2022

2017-2019

Following a wet 2016, dry conditions returned in 2017 across south and eastern Australia. This was a sustained multi-year period of dryness, unprecedented in recorded history. A strong Indian Ocean Dipole was a significant contributor to dry conditions the second half of 2019, leading into significant 2019/2020 bushfire season. The region was similar affected during this period, with widespread low rainfall and low soil moisture.

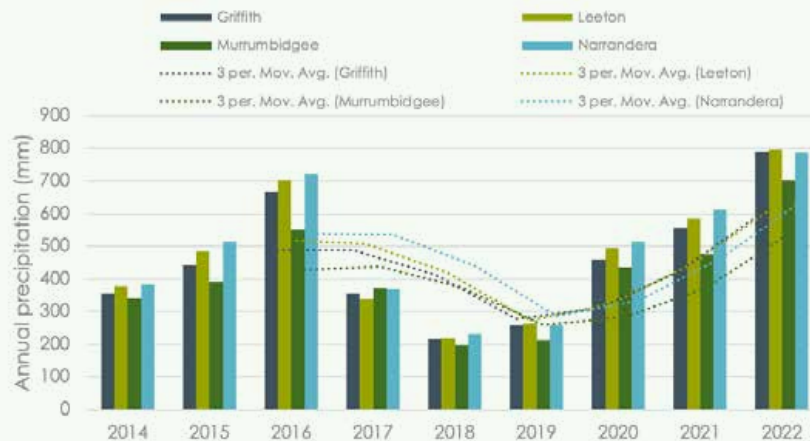


Figure 27 — Yearly precipitation (absolute), by LGA (2014 to 2022)

Precipitation (mm)



Soil moisture (mm/yr)

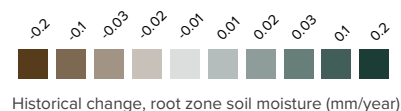
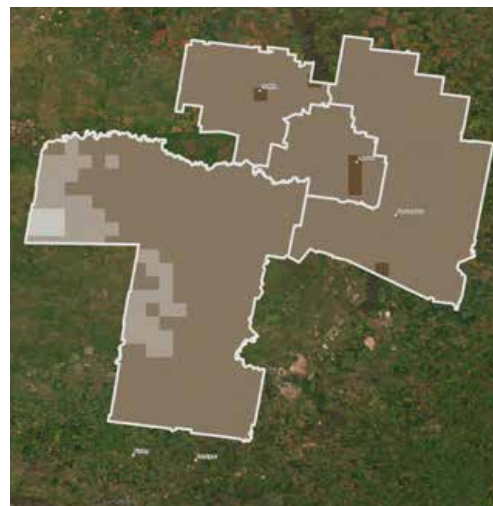


Figure 28 — Changes in conditions during drought against a present-day baseline of 2002 to 2022

Appendix B – Concepts to guide adaptive learning

As part of learning processes through the implementation, this appendix provides key considerations to guide further iterations and amendments to this RDRP. As drought resilience processes mature, the ability for further robust adaptation pathways to be implemented will emerge.

The table below captures specific items identified for integration as part of future plan iterations.

NO.	ASPECT OF CONSIDERATION
Expansion of drought resilience relative to diverse stakeholder groups	
1	<p>Expand on what drought means to different segments of the region's community and industries, and adaptation pathways to 'maintain, modify or transform' to grow drought resilience.</p> <p>As implementation of this foundational RDRP occurs, and monitoring, evaluation and learning processes are undertaken, opportunity will arise to advance the concepts of resilience theory, and make more clear how the adaptation pathways are continuously improving and escalating to underpin drought resilience maturation.</p>
2	<p>Continue to engage with diverse community and industry groups to advance implementation of the plan.</p> <p>Future plan updates could capitalise on the community's desire to be engaged and involved in the plan's delivery by acknowledging the role that key knowledge holders could play. Stakeholder engagement could be expanded to include direct participation of different drought vulnerable groups including gauging their capacity to participate and how best to engage with them moving forward. This information could be used to better target vulnerable residents and ensure adequate supports are in place to involve different community segments.</p>
Expansion of resilience adaptation pathways	
3	<p>Use diverse quantitative and empirical evidence on the potential impact of the interaction of historical and projected drought with key economic and social variables over time, such as demographic changes, shifts in the diversity of businesses, and livelihoods and employment opportunities for different community segments, in emergent versus declining types of industries, and in labour mobility among different industry and sectors.</p>
4	<p>Further develop the theory of change to aligns the plan's objectives and actions towards reaching its intended outcomes, including the degree to which the proposed actions contribute to adaptation and transformation.</p>
5	<p>Expand on the interrelationships between economic, social and environmental factors across existing and updated documents, plans and strategies, and describe how these relationships influence potential cascading impacts of drought.</p>

NO.	ASPECT OF CONSIDERATION
Expansion of resilience adaptation pathways (cont)	
6	Future plan updates could profile drought impacts for those non-agricultural sectors identified as key sectors in the community, such as mining, renewable energy, health care and social assistance and tourism sectors. Such a profile could include an exploration of how these sectors can build resilience or drive transformation through learning, preparedness and planning.
7	Future plan updates could develop a suite of plausible future scenarios through a participatory process and based on climate, drought and other drivers of change. The development of future scenarios could consider how trends, shocks or stresses (including drought) will interact with and likely affect the region's economic, social and environmental characteristics, and the implications for diverse stakeholder groups. This exercise will also assist these stakeholders to explore and identify actions and pathways that assist with building resilience under different plausible future scenarios.
Resilience action planning	
8	Establish resilience indicators for each of the plan's 'priority areas', using baseline observations drawn from the MEL process within the initial years of plan implementation.
9	Future updates could provide more information to substantiate the assumed mechanisms by which its actions can be achieved, and to what extent they align with the broader objectives and outcomes of the plan.
Implementation	
10	As implementation advances, expand the implementation content of the plan with respect to its governance arrangements and the function / operation of the PCG.
11	<p>As partnership arrangements and relationships are built through this foundational plan, more information could be built on the main purpose of each collaboration setting clear intent and requirements, alongside specific measures. This can provide greater structure to partnerships, which may be a focus under each pathway.</p> <p>The types of partnerships and activities sought may influence these reporting arrangements. Review of partnership may be ongoing to ensure appropriate representation of groups, including First Nations communities and non-farming populations.</p>
12	Future plan updates could provide more explicit descriptions of what external support is required for successful implementation.
13	Future updates to the plan may provide further detail on the sequencing of actions, as these are prioritised and refined and as funding becomes clearer.

NO.	ASPECT OF CONSIDERATION
Monitoring, evaluation and learning framework	
14	<p>Further develop structured approaches to capturing lessons from performance measures, linked with monitoring in addition to lessons from annual evaluations currently identified in the MEL. Integrate lessons learned from the plan's existing evaluation questions back into the plan's actions.</p> <p>Continue to enhance and mature the plan's MEL processes over time as the plan transitions from foundational into a performance posture.</p>
15	<p>Further develop performance indicators tied to actions in the plan's MEL plan. This will improve accountability by showing the degree to which proposed priorities and actions contribute to the plan's articulated vision and outcomes. This could include using quantitative and empirical evidence for key economic and social variables over time. This could include evidence that helps to track demographic shifts, changes in the diversity of businesses, livelihoods and employment opportunities for different community segments in emergent versus declining types of industries. It could further include evidence of labour mobility among different industry and sectors in order to assess actions focused on economic diversification.</p>
Resilience assessment	
16	<p>Ensure future iterations of the plan are qualified by a review of the Resilience Assessment components to identify key circumstantial changes which have occurred.</p>
17	<p>Continue to build upon and refine the program logic approach embedded within the Resilience Assessment that supported the development of the current plan, into a well-developed theory of change that provides a detailed and explicit causal mechanisms and valid assumptions by which the plan, through its implementation, will deliver the desired outcomes and impact.</p>



DWMS MANUAL

DRINKING WATER MANAGEMENT SYSTEM

Griffith City Council
March 2024
2.2



Document status:	Version:	2.2		
Document history:	<i>Status</i>	<i>Version</i>	<i>Date</i>	<i>Comments</i>
	Internal draft	1.0	06/09/2023	Reviewed by: Annalisa Contos
	Issued to GCC for review	2.0	06/09/2023	
		2.1		Minor updates (e.g. department name changes)
	For issue	2.2	25/03/2024	Minor updates to mapping regulatory requirements
Author:	Patrick Schnelle, Annalisa Contos (Atom Consulting)			
File name:	GRI2208 DWMS manual v2.1.docx			
GCC endorsement:				

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Introduction

Background

Griffith City Council (GCC) supplies potable water to residents through two water supply systems:

- Griffith water supply system
- Yenda water supply system

The NSW *Public Health Act 2010* (the Act) requires water suppliers to produce a *Quality Assurance Program*. This drinking water management system (DWMS) covers the operation of Griffith water supply system and is based on the 12 Elements, 32 Components and 76 Actions of the Framework for Drinking Water Quality Management in the Australian Drinking Water Guidelines (ADWG; NHMRC 2011).

Document purpose

This document acts as a roadmap for the activities that GCC undertakes to ensure the provision of safe drinking water to its customers.

The document is supported by a range of procedures, registers, data management systems, flow diagrams and process and instrumentation diagrams which are all referenced at the appropriate points in this document.

This document is reviewed annually as part of the Annual Report preparation. The currency of the supporting documentation is maintained in line with organisational requirements.

Critical control points

The day-to-day safety of the water is maintained by critical control points (CCP) and it is a requirement of DWMS development that CCPs are developed and critical limits assigned.

Commitment to drinking water quality management

Element 1. Commitment to drinking water quality management

Table 1. Element 1: Summary of key items, review frequencies, records, and responsibilities

Item	Frequency	Records	Responsibility
Drinking water quality policy	Reviewed 5 yearly	Policy document quality control	Director Utilities
	Communicated through water quality meetings, training sessions and on the job training	Water quality meeting minutes and outputs Induction records	Treatment Plants Co-ordinator
Key regulatory requirements (Table 4 and Table 5)	Notification of regulatory changes made to Council are registered and passed on onto to the appropriate manager as a workflow task	E-mails notifications, meeting minutes	Quality Systems Supervisor
	Updated as part of DWMS review	Document control	Quality Systems Supervisor
	Communicated through water quality meetings	Water quality meeting minutes and outputs	Quality Systems Supervisor
	Communicated through fortnightly toolbox talks	Toolbox talk record (WHS-FO-066)	Treatment Plants Co-ordinator
Stakeholder list (Table 6)	Updated as part of DWMS review	Document control	Quality Systems Supervisor

1.1 Drinking water quality policy

- Formulate a drinking water quality policy, endorsed by senior executives, to be implemented throughout the organisation.
- Ensure that the policy is visible and is communicated, understood and implemented by employees.

Organisational endorsement is required for the drinking water quality policy, DWMS document, critical control point (CCPs) and incident and emergency response plan (IERP). The authority to give endorsement of these documents is detailed in Table 2.

Table 2. Endorsement of the DWMS

Document	How is the document endorsed?	Records
Drinking water quality policy	Endorsed by the Director Utilities and General Manager.	Recorded in SMT meeting minutes.
DWMS	Water & Wastewater Manager to review and recommend for endorsement. Endorsed by the Director Utilities.	Recorded in SMT meeting minutes. Recorded within the DWMS document control.
CCPs	Water & Wastewater Manager to review and recommend for endorsement. Endorsed by the Director Utilities.	Recorded within the CCP document control.
IERP	Water & Wastewater Manager to review and recommend for endorsement. Endorsed by the Director Utilities.	Recorded within the IERP document control.
Other DWMS documentation	Approved by the Water & Wastewater Manager	Recorded within the document control

The drinking water quality management policy was last updated on 22nd October 2018 (GCC record number 19/21144). The policy is displayed at the Griffith and Yenda WTPs.

Commitment to drinking water quality management

The responsibilities within this policy are communicated to staff through:

- Staff inductions
- Fortnightly toolbox meetings
- Monthly water quality meetings
- Water quality awareness training
- Participation in water quality risk assessments

Staff understanding of the drinking water quality policy is recorded through records of staff attendance at meetings and workshops, and records of training undertaken.

Councils' commitment to drinking water quality management is included in planning and policy documents as shown in Table 3.

Table 3. Relevant planning and policy documents

Document	How water quality objectives are incorporated
LWU strategic planning documents	Understanding aligned to the strategic outcomes including: <ul style="list-style-type: none"> • Service needs • Water security • Water quality • System capacity, capability and efficiency • Other key risks and challenges Outlines water quality objectives and long term financial and strategic planning
Community strategic plan	Identifies internal measures to meet community expectations for GCC to provide a quality potable supply of water
Asset management strategy	Water supply is identified as a critical asset, management strategies identified
Long term financial plan	Long term financial planning for the water and sewer fund

1.2 Regulatory and formal requirements

- Identify and document all relevant regulatory and formal requirements.
- Ensure responsibilities are understood and communicated to employees.
- Review requirements periodically to reflect any changes.

The regulatory and formal requirements relating to drinking water quality in systems managed by GCC have been identified and captured in Table 4.

The Public Health Regulation (2022) sets out the matters to be included in a Quality Assurance Program (QAP). A summary of these requirements and how they are met by this DWMS is shown in Table 5.

Regulatory and formal requirements are reviewed as part of DWMS updates. Review may also occur as part of Strategic Business Plan and IWC reviews. Notifications of regulatory changes are registered by the administration team and allocated through the workflow systems to the appropriate manager.

The responsibilities of staff to implement regulatory and requirements (including regulatory changes) is communicated to staff through:

- Monthly water quality meetings
- Weekly operational meetings.

Table 4. Key formal requirements relating to water quality

Instrument	Jurisdiction	Type	Relevance
Competition and Consumer Act 2010	Commonwealth	Statute	Replaces the Trade Practices Act 1974 and incorporates Schedule 2 – The Australian Consumer Law. As a "seller" of water, the local council is subject to provisions of Consumer transactions and Consumer guarantees, which guarantees that the goods supplied are reasonably fit for purpose

Commitment to drinking water quality management

Instrument	Jurisdiction	Type	Relevance
AS/NZS 3500.0 to 4:2021 - Plumbing and Drainage Set	National	Standard	Largely for management of the distribution system including standards for plumbing and drainage issues
Plumbing Code of Australia (National Construction Code Volume 3)	National	Standard	Largely for management of the distribution system including standards for plumbing and drainage issues
Australian Drinking Water Guidelines 2011	National	Guideline	Sets frameworks and guidance for the provision of safe, quality drinking water
Local Government Act 1993	NSW	Statute	Urban water services and management/review of on-site sewage management systems. Have only persons licensed or certified under the <i>Home Building Act 1989</i> (or supervised by such a person) carry out any water supply work, sewerage work or stormwater drainage work Preparation of Asset Management Plans
Public Health Act 2010	NSW	Statute	Protection of public health, follow any advice issued from the Chief of Health regarding drinking water safety to the public; sample drinking water in accordance with NSW Health recommendations. Prepare a drinking water management system
Public Health Regulation 2022	NSW	Regulation	Requirement to have a quality assurance program (QAP) in place that addresses the elements of the Framework as set out in the ADWG. A copy of the most recent QAP is to be provided to the Director-General who may arrange a review of the QAP at any time. Specifies the requirements of the QAP
Protection of the Environment Operations Act 1997	NSW	Statute	Environment protection including licensed discharges
Fluoridation of Public Water Supplies Act 1957	NSW	Statute and regulation	Sets out the approval processes for fluoridation and calls up the NSW Code of Practice for Fluoridation of Public Water Supplies.
Fluoridation of Public Water Supplies Regulation 2022			Regulation: made under the Fluoridation of Public Water Supplies Act 1957, relating to correct fluoride dosing equipment; collection, supply, and analysis of water samples; and provision of results monthly.
NSW Code of Practice for Fluoridation of Public Water Supplies	NSW	Code of Practice	Sets out the requirements for the design, operation and maintenance of fluoridation plants in NSW
Regulatory and assurance framework for local water utilities	NSW	Guidelines	Sets out overarching regulatory and assurance objectives for effective, evidence based strategic planning including sound pricing and financial management
NSW Health Drinking Water Monitoring Program	NSW	Guidelines	Free-of-charge testing for water supply system monitoring for indicator bacteria and health-related inorganic chemicals. Includes NSW Health Response Protocols for chemical and quality and treatment failure
Environmental Planning and Assessment Act 1979 No 203	NSW	Statute	Proper management, development and conservation of resources including water for the welfare of the community and environment.

Table 5. Public Health Regulation 2022 – Information to be included in QAPs

Clause	Requirement	DWMS Reference
45	The QAP must include information on:	
(a)	Identification of potential health risks associated with the supply of drinking water.	Element 2

Commitment to drinking water quality management

Clause	Requirement	DWMS Reference
(b)	A process for controlling the potential health risks in accordance with the Framework for Management of Drinking Water Quality, as set out in the <i>Australian Drinking Water Guidelines</i> published by the National Health and Medical Research Council.	Elements 1 to 12
46	The QAP must include information on:	
(a)	A commitment by the supplier to drinking water quality management and a description of how that commitment is communicated to staff and included in planning and policy documents.	Drinking water quality policy Table 2
(b)	Research and development carried out in relation to maintaining or improving the quality of the drinking water, including a list of any previous water quality studies and plans for future studies.	Investigative studies and research monitoring Drinking water quality management improvement plan
(c)	Systems or procedures for record keeping.	Management of documentation and records
(d)	Systems or procedures for the following:	Operational monitoring Corrective action Drinking water quality monitoring Short term evaluation of results
	(i) reviewing the monitoring of the operation of the drinking water supply system	
	(ii) verifying the drinking water supply system	
	(iii) reporting the results of the reviews to management and external parties.	
(e)	Procedures for the validation of equipment used, and the treatment processes carried out, for the drinking water supply system.	Validation of processes
(f)	The management of the drinking water supply system, including the following:	Water supply system analysis Assessment of water quality data Hazard identification and risk assessment
	(i) An assessment of the risks to the drinking water supply system	
	(ii) An assessment of the maximum and residual risks to the drinking water supply system	
	(iii) Identification of hazards to the drinking water supply system	
(iv)	Measures to prevent hazards to the drinking water supply system, known as preventive measures	Element 3
(v)	Management, if possible, of risks to the drinking water supply system, known as control points	Critical control points
(vi)	Communication to staff about control points that are critical to the drinking water supply system and drinking water quality, known as critical control points	Critical control points
(vii)	Actions to improve the drinking water supply system.	Drinking water quality management improvement plan
47	The QAP must include:	
(a)	For the drinking water supply system, processes to deal with:	Critical control points
	(i) Managing critical control points and recording non-compliance with critical control points.	
	(ii) Operational monitoring and correction of the drinking water supply system.	Operational monitoring Corrective action
	(iii) Procurement, delivery and testing of chemicals and equipment used in relation to the drinking water supply system.	Materials and chemicals
	(iv) Primary disinfection and recording of primary disinfection conditions, including recording of the concentration and contact time of the disinfectant and the temperature and pH level of the water,	Operational and Verification Monitoring Plan Operational monitoring spreadsheets SCADA
	(v) Calibration, operation and maintenance of critical treatment equipment.	Equipment capability and maintenance

Commitment to drinking water quality management

Clause	Requirement	DWMS Reference
(b)	Process for verifying the quality of the drinking water, including:	Operational and Verification Monitoring Plan
	(i) A comprehensive program for monitoring the drinking water supply distribution system.	
	(ii) Procedures to review and respond to results from monitoring the drinking water supply distribution system	Short term evaluation of results
(c)	Processes for managing incidents and emergencies in relation to the quality of the drinking water, including:	
	(i) A process to notify the Secretary of incidents in relation to the drinking water quality.	Communication
	(ii) Identification of the types of incidents and emergencies that may occur and that would require management.	Incident and emergency response protocols
	(iii) procedures, including communication procedures, to be followed if there is an incident or emergency,	
	(iv) Procedures for the control of document versions.	Management of documentation and records
	(v) The contact details of the individuals who should be contacted if there is an incident or emergency in relation to the quality of the drinking water and the location of the contact details	Emergency contact list
48	The QAP must include information about:	
(a)	Training for employees about, and awareness of issues relating to, the quality of the drinking water.	Employee awareness and involvement
(b)	Processes for managing and reviewing the training for employees and maintaining and improving awareness of employees and contractors about drinking water quality issues.	Employee trainingEmployee training
(c)	Processes for engaging and raising awareness in the local community about the quality of the drinking water and informing the community at the time of a drinking water supply system incident.	Community consultation Communication
(d)	Consideration of local community and consumer objectives in the management of the drinking water supply system.	
(e)	Long term evaluation of the drinking water quality.	Long term evaluation of results
(f)	Processes for updating or improving the QAP if required.	Review by senior executive
(g)	Scheduling of internal and external reviews of the QAP and processes for such reviews.	Audit of drinking water quality management

1.3 Engaging stakeholders

- Identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier.
- Develop appropriate mechanisms and documentation for stakeholder commitment and involvement.
- Regularly update the list of relevant agencies.

Stakeholders involved in the provision of a safe reliable drinking water supply have been identified and are listed in Table 6. Stakeholders are also identified in the SAMP.

Table 6. Summary of stakeholders

Stakeholder	Role and mechanisms for involvement
NSW Health	Provides water analysis through the NSW Health Drinking Water Monitoring Program. NSW Health response protocol to microbial and physical and chemical exceedances Representatives are invited to participate in risk assessment workshops

Commitment to drinking water quality management

Stakeholder	Role and mechanisms for involvement
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Inspector visits and assesses WTP compliance. Technical support on investigations, design, construction, operation, maintenance and management Representatives are invited to participate in risk assessment workshops
Householders and businesses	Customers Complaints and enquires to Council
Temporary residents	Customers Complaints and enquires to Council
Key industry in the catchment	Can impact quality of water in the catchment.
Emergency services	Provision of emergency services. Advice on emergency issues that may impact the catchment
Murrumbidgee Irrigation	Bulk supplier

Element 2. Assessment of the drinking water supply system

Table 7. Element 2: Summary of key items, review frequencies and responsibilities

Item	Frequencies	Records	Responsibility
Process flow diagrams	Currency reviewed as part of annual report and risk assessment workshops. Updated on system change.	DWMS annual report Process flow diagram QA	Senior Water and Wastewater Engineer
Operational and verification monitoring data	Monthly review	Water quality meeting minutes	Water and Wastewater Manager
	Reviewed annually	DWMS annual report	Director Utilities
Drinking water quality risk assessment reviews	4 yearly or on system change	Briefing paper Output report	Water and Wastewater Manager

2.1 Water supply system analysis

- Assemble a team with appropriate knowledge and expertise.
- Construct a flow diagram of the water supply system from catchment to consumer.
- Assemble pertinent information and document key characteristics of the water supply system to be considered.

An overview of the potable water supply systems is provided in Table 8.

Table 8. Overview of potable water supply systems

System component	Detail
Raw water source	Murrumbidgee River via Murrumbidgee Irrigation Main Canal
Water treatment process	<div>Griffith WTP:</div> <ul style="list-style-type: none"> • PAC • DAF • Filtration • Disinfection • Fluoridation <div>Yenda WTP:</div> <ul style="list-style-type: none"> • Microfiltration • Disinfection • Flouridation
Distribution	Figure 4
Connections	7,159 (2020-21 DCCEEW performance monitoring data)

A drinking water supply system analyses was undertaken as part of the 2023 risk assessment.

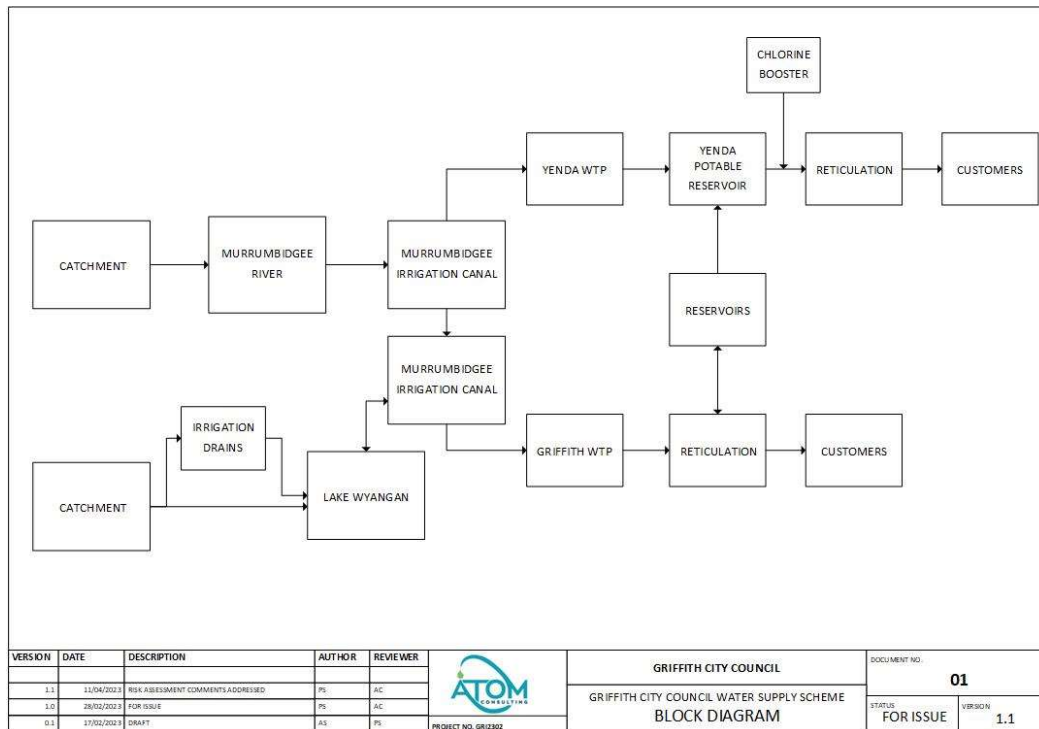
Table 9. Assessment of water supply system

Activity	Objectives	Includes	Reference
Water system and quality analysis	Meet the requirements of the ADWG 2011	System description Flow diagrams Water supply system key characteristics	<i>GRI2302 drinking water quality risk assessment output paper v2 (Atom Consulting, 2023)</i>

Process flow diagram documents are stored electronically on HPE Content Manager.

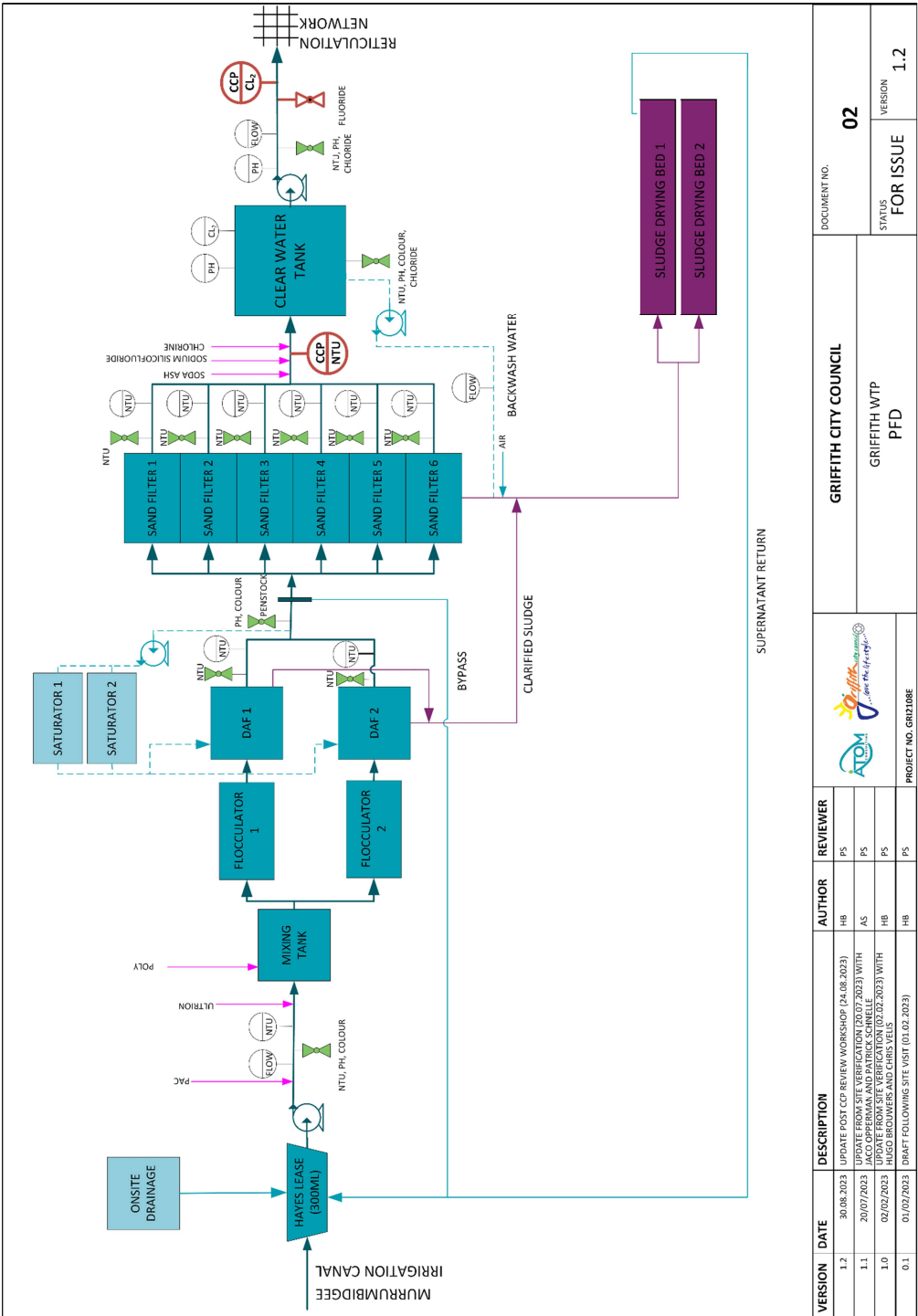
Assessment of the drinking water supply system

Figure 1. GCC water supply schemes



Assessment of the drinking water supply system

Figure 2. Griffith WTP PFD



Assessment of the drinking water supply system

Figure 3. Yenda WTP PFD

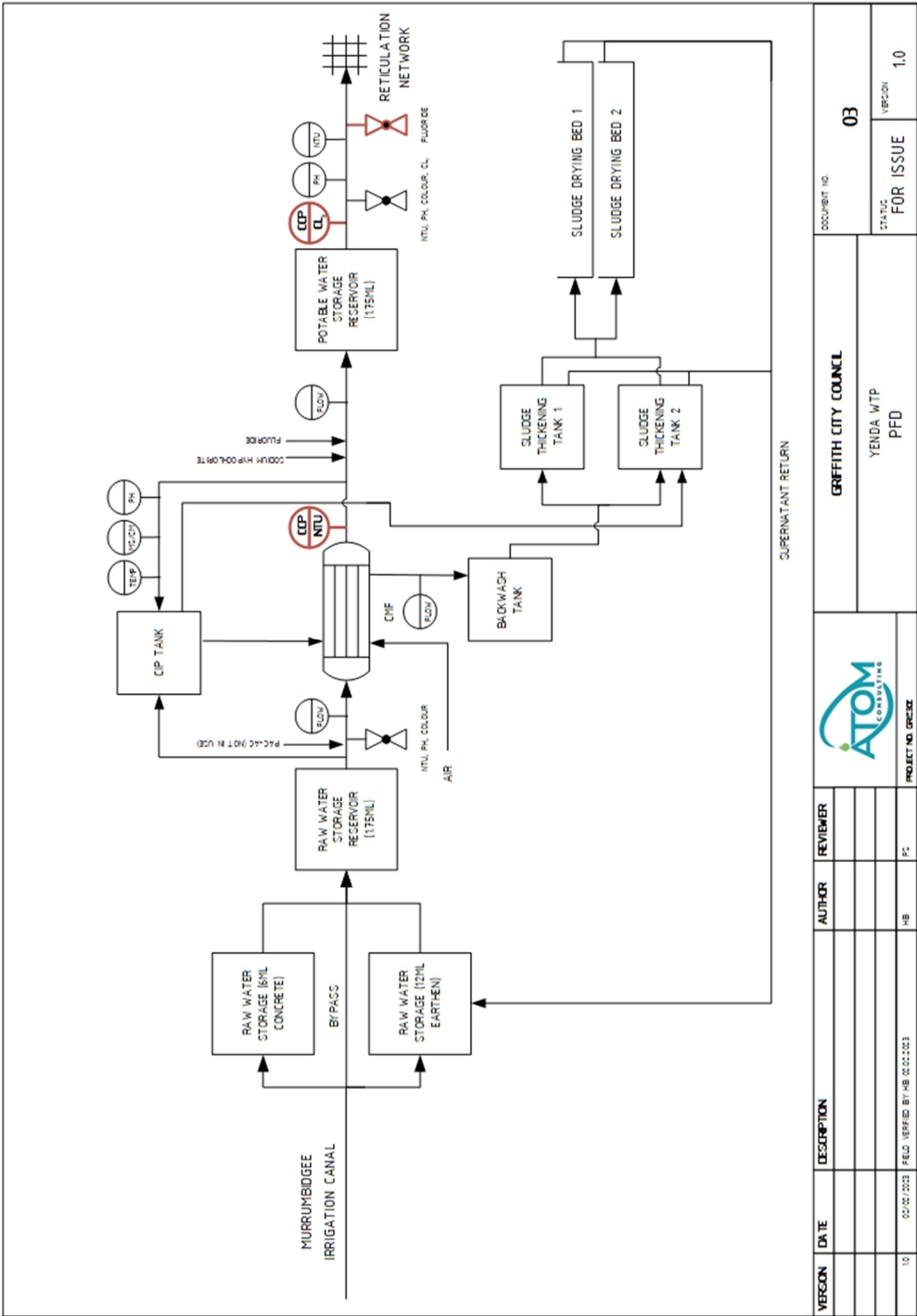
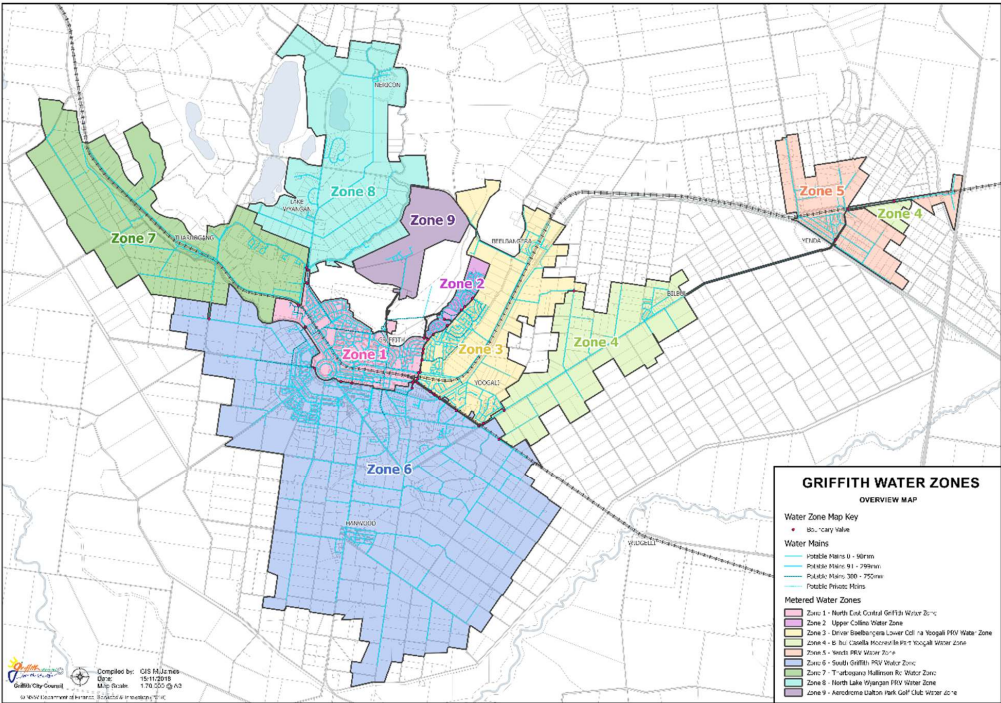


Figure 4. GCC water supply zones



2.2 Assessment of water quality data

- Assemble historical data from source waters, treatment plants and finished water supplied to consumers (over time and following specific events).
- List and examine exceedances.
- Assess data using tools such as control charts and trends analysis to identify trends and potential problems.

Drinking water supply system analyses that have been undertaken for the water supply systems are summarised in Table 10. Referenced documents are stored electronically on HPE Content Manager.

Table 10. Assessment of water quality data

Activity	Includes	Reference
Water system and quality analysis (Griffith and Yenda water supply systems)	<div>Analysis of water quality data including, statistical analysis, trending and exceedance listing:<ul style="list-style-type: none">• source water quality data• process (operational) water quality data</div> <div>NSW Health verification monitoring program reticulation data</div>	GRI2302 drinking water quality risk assessment output paper v2 (Atom Consulting, 2023)

Assessment of the drinking water supply system

Spreadsheets	Analysis of water quality data including, trending: <ul style="list-style-type: none"> • source water quality data • process (operational) water quality data 	<i>Griffith Water Treatment Plant Daily Operations Log - GWTP</i>
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2.3 Hazard identification and risk assessment

- Define the approach and methodology to be used for hazard identification and risk assessment.
- Identify and document hazards, sources and hazardous events for each component of the water supply system.
- Estimate the level of risk for each identified hazard or hazardous event.
- Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.
- Determine significant risks and document priorities for risk management.
- Periodically review and update the hazard identification and risk assessment to incorporate any changes.

A list of hazard identification and risk assessment for the Griffith and Yenda supply system that has been undertaken are summarised in Table 11. Documents associated with these risk assessments are stored electronically on HPE Content Manager.

Table 11. Assessment of water supply system hazards and risks

Activity	Objectives	Includes	Reference
Risk Assessment workshop 2 March 2023	Meet the requirements of the ADWG 2011	Summary of risk assessment methodology <ul style="list-style-type: none"> • Team assembled to identify: • Hazards, sources and hazardous events • Risk assessment • Areas of uncertainty 	<i>GRI2302 drinking water quality risk assessment output paper v2 (Atom Consulting, 2023)</i>

Preventive measures for drinking water quality management

Element 3. Preventive measures for drinking water quality management

Table 12. Element 3: Summary of key items, review frequencies and responsibilities

Item	Frequency	Records	Responsibility
CCP and OCPs	Protocols reviewed annually in conjunction with incident and emergency response training	CCP QA	Water & Wastewater Manager (invite NSW Health/NSW DCCEEW)
CCP exceedances	Data reviewed monthly	Monthly water quality meeting minutes	Water & Wastewater Manager
	Following an exceedance	Emails/file note stored on HPE	Water & Wastewater Manager

3.1 Preventive measures and multiple barriers

- Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.
- Evaluate alternative or additional preventive measures where improvement is required.

Documents listing preventative measures and multiple barriers are summarised in Table 13. Documents associated the preventive measures are stored electronically on HPE Content Manager.

Table 13. Assessment of water supply system barriers

Activity	Objectives	Includes	Reference
Risk Assessment workshop 2 March 2023	Meet the requirements of the ADWG 2011	Summary of risk assessment methodology Team assembled identified Hazards, sources and hazardous events Preventive measures	<i>GRI2302 drinking water quality risk assessment output paper v2 (Atom Consulting, 2023)</i>

3.2 Critical control points

- Assess preventive measures from catchment to consumer to identify critical control points.
- Establish mechanisms for operational control.
- Document the critical control points, critical limits and target criteria.

A summary of the current critical control points (CCPs) limits is shown in Table 14. Details of CCP and operational control points (OCP) limits and protocols for the Griffith and Yenda WTPs are stored electronically on HPE Content Manager.

GCC is in the process of implementing updated CCPs. The future CCPs are shown in Table 15.

Table 14. CCPs for Griffith and Yenda supply systems

CCP	Monitoring parameter	Target	Adjustment	Critical
1 - Filters	Combined filter turbidity (NTU)	≤0.3	≤0.7	≥1.0
2 - Disinfection	Online chlorine reticulation (mg/L)	1.0-2.0	≤1.0	≤0.5
3 - Fluoridation	Fluoride reticulation (mg/L)	1.0	≤0.9 or ≥1.1	≥1.4

Preventive measures for drinking water quality management

CCP	Monitoring parameter	Target	Adjustment	Critical
4-Reservoirs	Reservoir integrity	Secure and vermin proof	Evidence of breaches, chlorine residual ≤ 0.5 mg/L at the reservoir	Breach not rectified, chlorine residual ≤ 0.4 mg/L at the reservoir, or <i>E. coli</i> positive

Table 15. New CCPs for the Griffith water supply system (to be implemented)

CCP #	Monitoring Parameter	Units	Target	Adjustment limit	Critical limit
1	Individual filter turbidity	NTU	≤ 0.2	≤ 0.35 for greater than 10 minutes	≥ 0.5 for greater than 15 minutes
2	Online chlorine reticulation	mg/L	1.7-2.7	< 1.7	≤ 1
3	Fluoride reticulation	mg/L	1.0	≤ 0.9 or ≥ 1.1	≥ 1.4
4	Reservoir integrity	-	Secure and vermin proof	Evidence of breaches, chlorine residual ≤ 0.5 mg/L at the reservoir	Breach not rectified, chlorine residual ≤ 0.4 mg/L at the reservoir or <i>E. coli</i> positive

Notes:

For CCPs 2 and 3, reticulation refers to the pumps at the WTP pumping to the reticulation (Figure 2)

GCC has a CCP change management protocol documenting the steps and parties involved in changing CCPs. This operating procedure is stored on HPE Content Manager.

The Quality Systems Supervisor has a calendar reminder every quarter that generates a CRM request to notify the Treatment Plants Coordinator that reservoir inspections are due (WS-FO-210).

Records include:

- Email records
- Internal CCP breach notification form (WS-FO-44) stored on HPE Content Manager
- Monthly water quality meeting minutes (exceedances and notifications that were undertaken).
- Quarterly Reservoir Inspection CCP records (WS-FO-210) stored in HPE Content Manager.

Element 4. Operational procedures and process control

Table 16. Element 4: Summary of key items, review frequencies and responsibilities

Item	Frequency	Records	Responsibility
Work Instructions	Procedure dependent	Document QA	Treatment Plants Coordinator
Drinking Water Operational Monitoring Plan	Review annually (as part of annual report)	Document QA	Water & Wastewater Manager
Operational monitoring spreadsheet	Daily entry and review	HPE	WTP Operator / Treatment Plants Coordinator
Weekly checklist	Weekly	Hard copy in folder at WTP	WTP Operator
Calibration sheet	Weekly	Hard copy in folder at WTP	WTP Operator
Certificates of analysis	Provided on delivery by the chemical supplier	Hardcopy saved in WTP filing cabinet	WTP Operator

4.1 Operational procedures

- Document all procedures and compile into an operations manual.

The *Griffith WTP Work Instructions Folder* documents the Griffith WTP work instructions into an operations and maintenance manual stored in hard copy at the WTP, including fluoride.

Approved SWMS for the reticulation are located on HPE Content Manager.

4.2 Operational monitoring

- Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.
- Document monitoring protocols into an operational monitoring plan.

The log sheet is used to capture the daily testing. The WTP operators transfer this information to the *Water Treatment Plant Daily Operations Log*.

On-site laboratory water quality data is stored on-site.

The *Routine Drinking Water Monitoring RESULTS.XLSX* records monthly data from verification testing of the raw and treated water by a NATA accredited laboratory.

The Drinking Water Operational Monitoring Plan, documents operational monitoring requirements from the MI channel to the treated water outlet of the Griffith and Yenda WTPs. The Drinking Water Distribution System Monitoring Plan covers operational and verification monitoring for the distribution system.

Both plans cover the NSW Health Fluoridation Code of Practice requirements for fluoride monitoring.

These plans also provide guidance around corrective actions, event based monitoring and sampling and testing procedures.

These monitoring plans are stored on HPE Content Manager.

4.3 Corrective action

- Establish and document procedures for corrective action to control excursions in operational parameters.
- Establish rapid communication systems to deal with unexpected events.

A summary of critical control point protocols is shown in Table 14 with the full CCPs documented in the latest version of *CCPs and OCPs* document. The *CCPs and OCPs* document and supporting documentation are stored on HPE Content Manager.

A CCP notifications flowchart and procedure forms part of the CCP documentation.

The monitoring plans and work instructions also includes procedures for corrective action to control excursions in operational parameters.

4.4 Equipment capability and maintenance

- Ensure that equipment performs adequately and provides sufficient flexibility and process control.
- Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

Inspection and calibration schedules (Chemical drop tests, instrumentation, lab tests) are managed through the weekly checklist and calibration schedule. Hardcopies of these sheets are filed at the WTP. The date of the last calibration is also recorded on a sticker on the instrument and calibration reports provided by the contractor.

4.5 Materials and chemicals

- Ensure that only approved materials and chemicals are used.
- Establish documented procedures for evaluating chemicals, materials and suppliers.

The NSW Guidelines for Drinking Water Management Systems (NSW Health and NSW Office of Water, 2013) recommends that all chemical deliveries are attended by a trained water treatment plant operator, and that the following procedures are followed:

- A certificate of analysis is provided by the supplier at the time of delivery for each batch of chemical supplied and that the chemical satisfies the criteria specified in Chapter 8 of the ADWG, prior to the commencement of unloading
- The operator is to check and confirm the correct chemical is being delivered into the appropriate storage
- If relevant, the operator is to check that the correct concentration has been supplied.

GCC has work instructions for delivery and storage of individual chemicals:

- Chlorine 920kg Drum delivery
- Loading Fluoride Hopper
- Ultrion delivery
- Polymer delivery

GCC uses ChemWatch to manage its Safety Data Sheets (SDS). The Quality Systems Supervisor undertakes a monthly review of the SDS folders.

Element 5. Verification of drinking water quality

Table 17. Element 5: Summary of key items, review frequencies and responsibilities

Item	Frequency	Records	Responsibility
Drinking water distribution system monitoring plan	Annual review of data against the plan	DWMS annual report	Water & Wastewater Manager
Customer complaint	As it occurs	CRM	Quality Systems Supervisor
Review of customer complaint data	Monthly	Monthly water Quality Meeting Minutes	Water & Wastewater Manager
Review of customer complaint data	Quarterly	Quarterly IP&R reporting	Water & Wastewater Manager
Review of customer complaint data	Annual	DWMS Annual Report	Quality Systems Supervisor

5.1 Drinking water quality monitoring

- Determine the characteristics to be monitored in the distribution system and in water as supplied to the consumer.
- Establish and document a sampling plan for each characteristic, including the location and frequency of sampling.
- Ensure monitoring data is representative and reliable.

The Drinking Water Distribution System Monitoring Plan outlines operational and verification monitoring requirements in the distribution. This plan provides guidance around corrective actions, event based monitoring and sampling and testing schedules.

NSW Health Monitoring sampling point locations are outlined on GIS.

5.2 Consumer satisfaction

- Establish a consumer complaint and response program, including appropriate training of employees

Customer requests are directed to the Quality Systems team. Complaints are recorded in CRM.

5.3 Short term evaluation of results

- Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction.
- Develop reporting mechanisms internally, and externally, where required.

A CCP notifications flowchart and procedure is stored on HPE Content Manager.

Any exceedances are recorded and acted upon immediately with the appropriate regulatory authorities notified.

The NSW Health Drinking Water Monitoring Program provides the following response protocols:

- NSW Health Response Protocol: for the management of microbiological quality of drinking water (<http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-microbiological.aspx>)
- NSW Health Response Protocol: for the management of physical and chemical quality (<http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-chemical.aspx>)

5.4 Corrective action

- Establish and document procedures for corrective action in response to non-conformance or consumer feedback.
- Establish rapid communication systems to deal with unexpected events.

The CCPs document the appropriate action where adjustment limits or critical limits are reached.

A CCP notifications flowchart and procedure is stored on HPE Content Manager.

Exceedances are responded to as outlined in Section 5.3.

Element 6. Management of incidents and emergencies

Table 18. Element 6: Summary of key items, review frequencies and responsibilities

Item	Frequency	Records	Responsibility
Incident and emergency response plan	Annual update, Within 1 month following an emergency, or Within 2 months following a significant change in the WTP (e.g. after new treatment process commissioning)	Document control	Water & Wastewater Manager
	Annual desktop exercise and training (scheduled through monthly meeting)	Minutes	Water & Wastewater Manager
Local Emergency Management Plan	As required	Document control	
Business continuity plan	As required	Document RM-PR-313	
Incident debriefs	As required	Meeting minutes	Water & Wastewater Manager
Contact list	6 monthly	HPE Content Manager	Water & Wastewater Manager

6.1 Communication

- Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and businesses.
- Develop a public and media communications strategy

CCP notification protocols detail internal and external notifications following a CCP exceedance. This is stored on HPE Content Manager.

Communication protocols are detailed in the Drinking Water Incident and Emergency Response Plan that also contains the command hierarchy for incidents and contingency plans and procedures for public notifications. The incident plan is stored on HPE Content Manager.

GCC has developed a contact list of key people (stored on HPE Content Manager).

6.2 Incident and emergency response protocols

- Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies
- Train employees and regularly test emergency response plans
- Investigate any incidents or emergencies and revise protocols as necessary

In the event of a water quality incident, GCC will respond according to the protocols and procedures shown in Table 19. Following an incident or emergency, documentation is reviewed and updated, and a debrief undertaken and recorded.

Investigation forms are completed by the Water & Wastewater Manager for major water quality incidents and sent to NSW Health by email. Internal notifications are undertaken using form WS-FO-244.

Training records are kept by HR.

Records of incident scenarios are kept as part of the monthly water quality meeting minutes.

Management of incidents and emergencies

Table 19. List of GCC water quality incident and emergency response protocols

Response protocol	Notes
NSW Health Response Protocols	<p>Response protocol for the management of physical and chemical quality</p> <p>http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-chemical.aspx</p> <p>Response protocol for the management of microbiological quality of drinking water</p> <p>http://www.health.nsw.gov.au/environment/water/Pages/nswhrp-microbiological.aspx</p>
Incident and emergency response plan	<p>Defines incident levels, response actions and notifications</p> <p>Includes references to the NSW Health Response protocols as appropriate as part of scenario specific contingency plans.</p> <p>Includes requirements for training to be conducted annually or when new employees commence; or when the procedures are updated or revised.</p> <p>Testing of the plan is required at the table-top level or higher on an annual basis.</p>
Business continuity plan	
Local Emergency Management Plan	Details arrangements for, prevention of, preparation for, response to and recovery from emergencies within the Local Government Area(s)
CCP response protocols	<p>CCP 1 – Filtration</p> <p>CCP 2 – Chlorination</p> <p>CCP 3 – Fluoridation</p> <p>CCP 4 – Reservoir integrity</p> <p>CCP communications flowchart</p>
NSW Code of Practice for Fluoridation of Public Water Supplies (2018)	<p>Provides a fluoride overdose incident management procedure for adoption.</p> <p>https://www.health.nsw.gov.au/environment/water/Documents/code-of-practice.pdf</p>

Element 7. Employee awareness and training

Table 20. Element 7: Summary of key items, review frequencies and responsibilities

Item	Frequency	Record	Responsibility
Drinking water quality awareness training for water staff	One off for existing employees New and newly assigned employees following role reassignment	Training record held by HR	Water & Wastewater Manager
Incident and emergency response plan training	Annually (in conjunction with the desktop scenario)	Attendance sheet	Water & Wastewater Manager

7.1 Employee awareness and involvement

- Develop mechanisms and communication procedures to increase employees awareness of and participation in drinking water quality management.

GCC aims to provide an environment of equal opportunity in its workplace and is committed to the development of skilled, knowledgeable and dedicated staff. Staff training is an important and essential element of corporate development and GCC supports this through on-going on and off-the-job training for all employees.

Operations staff have or are undertaking Certificate III in water operations or DCCEEW qualifications.

Mechanisms to increase drinking water quality awareness in staff include:

- Attendance at monthly water quality meetings
- Attendance at risk assessment workshops
- Drinking water quality awareness training
- Toolbox talks.

Specific drinking water quality awareness training is delivered to:

- Induction training (specific to water quality)
- Water operations (National Water Package)
- Water managerial staff

Key topics communicated to staff include:

- Critical control point limits and protocols
- Key preventative measures
- Incident protocols.

7.2 Employee training

- Ensure that employees, including contractors, maintain the appropriate experience and qualifications.
- Identify training needs and ensure resources are available to support training programs.
- Document training and maintain records of all employee training.

The position description includes the required qualifications. Training requirements are considered as part of the annual performance review. Human Resources co-ordinates and maintains records of formal training.

A requirement to attend external professional development is included as part of the employee's annual appraisal goals. Attendance at conferences and professional development events is noted in the monthly water quality minutes as appropriate. Operators shadow more experienced Operators where appropriate, and attend a conference or similar (DCCEEW refresher) every three years.

GCC ensures contractors have appropriate experience and qualifications through the safety management system. Contractors complete a form as part of this system that details appropriate qualifications are maintained.

Incident and response training requirements include:

- Inductions to include the Incident and Emergency Response Plan

Employee awareness and training

- Training of all water staff (including operations and management) in the Incident and Emergency Response Plan
- Training through attendance at incident scenarios.

Element 8. Community involvement and awareness

8.1 Community consultation

- Assess requirements for effective community involvement.
- Develop a comprehensive strategy for community consultation.

Community consultation is undertaken as part of GCC's broader obligations to engagement with its community under Integrated Planning and Reporting Requirements. GCC has a Community Engagement Strategy (available for download on GCCs website: <https://www.griffith.nsw.gov.au/>) which includes:

- Engagement outcomes
- Levels of engagement
- Methods of engagement
- Communication channels.

Engagement is also undertaken on a major project basis.

8.2 Communication

- Develop an active two-way communication program to inform consumers and promote awareness of drinking water quality issues.

GCC engages with its community through:

- Social media (e.g. Facebook for communication of water operational issues)
- Website
- Community opinion groups and pop-ups in the Plaza
- GCC stands at public activities e.g. Riverina Field Days.

Customers are notified of major works that may impact supply or issues related to water quality.

Element 9. Research and development

Table 21. Element 9: Summary of key items, review frequencies and responsibilities

Item	Frequency	Record	Responsibility
Investigative studies	As required	Project reports are saved on HPE Content Manager	Waste and Wastewater Engineer
DCCEEW inspection actions	As required	Added to improvement plan	Treatment Plants Coordinator
Validation checklist	As required on a project basis	Checklist	Waste and Wastewater Manager

9.1 Investigative studies and research monitoring

- Establish programs to increase understanding of the water supply system.
- Use information to improve management of the water supply system.

GCC utilises several mechanisms to improve understanding of the water supply systems. This includes engagement through NSW Water Directorate and the University of Sydney. Project-specific water quality monitoring is carried out as required, for example when investigating source water or network quality issues.

The risk assessment process has also identified investigative actions to improve knowledge and performance of the system and decrease the level of uncertainty during risk assessment.

Identified areas of investigation are included in the improvement and action plan. Outputs of investigative studies are stored on HPE Content Manager.

9.2 Validation of processes

- Validate processes and procedures to ensure that they are effective at controlling hazards.
- Revalidate processes periodically or when variations in conditions occur.

Design documentation and reports including the O&M manual are stored on HPE Content Manager.

Processes will be revalidated periodically or when variations in conditions occur.

Monitoring is in place to validate processes and guide corrective actions. A summary of the validation for the CCPs controlling key hazards is shown in Table 22.

Table 22. Validation of targets and limits for critical control points and supporting procedures

Process	Location	Parameter	Validation
Filtration	Outlet of filters	Turbidity	To be moved to individual filters
Chlorine disinfection	Outlet of TWST	Free Chlorine	EPANET modelling for C.t of 15 mg.min/L
Fluoridation	Outlet of TWST	Fluoride concentration	Target criteria is set from the NSW Fluoridation Code of Practice. Adjustment limits have been set for 10% of the target criterion. Critical limit has been set based on 95th percentile upper limit requirements under the NSW Fluoridation Code of Practice
Reservoir integrity	Reservoirs	Integrity of the reservoir	In line with NSW Health recommendation for setting critical control points.

Research and development

9.3 Design of equipment

- Validate the selection and design of new equipment and infrastructure to ensure continuing reliability.

In NSW, a proposal to construct or modify a water treatment works requires the NSW DCCEEW Section 60 approval under the *Local Government Act 1993*. NSW DCCEEW may also direct corrective actions to be undertaken under Section 61 of the *Local Government Act 1993*. GCC adheres to this requirement.

Element 10. Documentation and record keeping

Table 23. Element 10: Summary of key items, review frequencies and responsibilities

Item	Frequency	Record	Responsibility
Annual DWMS report	Annual	Email of report submitted to NSW Health Register email in HPE	Quality Systems Supervisor

10.1 Management of documentation and records

- Document information pertinent to all aspects of drinking water quality management.
- Develop a document control system to ensure current versions are in use.
- Establish a records management system and ensure that employees are trained to fill out records.
- Periodically review documentation and revise as necessary.

A summary of the record system for information pertinent to the drinking water quality management is listed in Table 24. Document review requirements are either included in the relevant document or as part of this DWMS.

HPE is used for statutory record keeping in accordance with the State Records Act 1998.

Hardcopies are kept for a minimum of 1 year, unless otherwise noted.

Table 24. GCC records systems for relevant drinking water quality management information

Item	Record held
Drinking Water Management System	HPE Content Manager
Monthly water quality meeting minutes	HPE Content Manager
Consumer complaints and feedback	Customer Request Management (CRM) System
Operational water quality data	Hardcopy log sheets Monitoring spreadsheet.
Calibration records	Date noted on equipment sticker (as applicable) Electronic documentation stored on HPE Content Manager
Field record taking, including: Mains hydrant flushing Incident reporting Reservoir inspections	HPE
Drinking water verification data	NSW Drinking Water Database
Work Instructions and SWMS	HPE Content Manager
Integrated Planning and Reporting strategic plans and report	GCC's website
Annual DWMS report	HPE Content Manager
NSW Performance Monitoring data	NSW DCCEE database

The NSW Health Fluoridation Code of Practice record requirements and where documents are stored is shown in Table 25.

Table 25. Fluoride code requirements

Area	Requirement	Record storage
Training	Two trained operators (fluoridation operators certificates for all qualified operators)	Certificates held by HR
Procedures	SOP for fluoride meter calibration and for routinely determining the fluoride concentration in a treated water sample.	Approved work instructions
Reporting	Forms 3 and 4 submitted to NSW Health monthly, held for 2 years	Hardcopies at WTP; Monthly recorded on health database
	Form 5 submitted to NSW Health in the event of a fluoride overdose or underdosing for over 72 hours	Emailed to NSW Health

Documentation and record keeping

Area	Requirement	Record storage
Internal fluoride audits	Carry out an internal audit against the requirements of the NSW Fluoridation Code of Practice on a regular basis Audit reports stored and available to NSW Health on request	HPE Content Manager

10.2 Reporting

- Establish procedures for effective internal and external reporting.
- Produce an annual report to be made available to consumers, regulatory authorities and stakeholders.

GCC undertakes reporting as required by NSW Health and DCCEEW. In line with GCC's responsibilities the following reports are produced:

- Monthly reports on the website (NSW Health verification results)
- Quarterly IP&R report
- NSW Health compliance reporting for drinking water quality monitoring: drinking water quality within GCC is monitored and the results are recorded in the NSW Health Drinking Water Database. Water quality reports can be produced from the database, which is located at the following web page: <http://www.drinkingwaterdb.nsw.gov.au>
- Water Supply and Sewerage NSW Performance Reporting: GCC's water supply service performance is detailed in the NSW Water Supply and Sewerage Performance Monitoring Report annually. This report is available for public access from the DCCEEW
- GCC Strategic Business Plan
- Drinking water management system annual report provided to NSW Health
- Monthly fluoride form 3 and 4 submission to NSW Health.

The drinking water management system annual report covers:

- Performance of critical control points
- Water quality review: raw, treated and distribution water quality including verification monitoring in the NSW Health Drinking Water Database
- Levels of Service: including consumer complaints
- Incident and emergencies: detail of any incident or emergencies; water quality issues requirement notifications; exceptions with reporting or notification requirements
- Drinking Water Management System implementation
- Continuous improvement plan implementation
- Reservoir inspections
- Staff development and training: including Incident Response Plan and Communication Protocols training.

Element 11. Evaluation and audit

Table 26. Element 11: Summary of key items, review frequencies and responsibilities

Item	Frequency	Record	Responsibility
Water quality meetings	Monthly	Meeting minutes	Water & Wastewater Manager
Internal audits / reviews	See Table 27	See Table 27	Quality Systems Supervisor
External audits	TBC (in consultation with NSW Health)	Audit report	Director Utilities

11.1 Long term evaluation of results

- Collect and evaluate long-term data to assess performance and identify problems.
- Document and report results.

GCC conducts monthly water quality meetings. These meetings cover:

- Performance of CCPs (operational monitoring spreadsheet and SCADA)
- Water quality review (treated, distribution and NSW Health verification monitoring data)
- Water quality incidents
- System changes and challenges
- Customer complaints
- DWMS (Legislative updates, internal review findings etc)
- Review of actions
- Reservoir inspections
- Training.

Meeting minutes are stored by GCC on HPE Content Manager.

The outcomes of these meetings are then further assessed as part of DWMS annual reporting. The annual reports are also stored on HPE Content Manager.

11.2 Audit of drinking water quality management

- Establish processes for internal and external audits.
- Document and communicate audit results.

The DWMS is internally reviewed as part of the scheduled monthly water quality meetings. The review assesses GCC's performance in relation to:

- CCPs and their exceedances
- Previously identified actions
- Water quality improvement plan
- Verification monitoring (NSW Health Database).

A summary of internal reviews is shown in Table 27. Internal review technical notes are stored on HPE Content Manager.

Review findings are communicated through monthly water quality meetings.

Table 27. Summary of internal reviews

Aspect	Frequency	Audit	Responsibility	Records
DWMS implementation internal audit	Annually as part of the Annual Report	Review of DWMS implementation as part of DWMS annual report provided to NSW Health. Implementation is reviewed in line with NSW Health guidance	Director Utilities	Annual report Technical note
Comprehensive review of the DWMS	2 years (in line with risk review/annual report)	DWMS implementation and adequacy	Quality Systems Supervisor	DWMS document control

Evaluation and audit

Aspect	Frequency	Audit	Responsibility	Records
Water quality results (operational and verification)	Annually	Review of water quality data against CCPs and monitoring plans	Quality Systems Supervisor	Annual report
CCP documentation and implementation	Annually	Review of CCP exceedances, including notifications undertaken	Water and Wastewater Manager	Annual report
Incidents and emergencies data	Annually	Review of incidents against communication protocols	Water and Wastewater Manager	Annual report
Improvement plan	Annually	Review of progress of action items	Water & Wastewater Manager	Annual report
Risk assessment	4 years	Risk review Data analysis	Director Utilities	Output report
Fluoridation Code of Practice compliance	2 years (or following updates to the Code)	Audit compliance with the fluoride code	Senior Water & Wastewater Engineer	Internal audit report

Other aspects of the DWMS (e.g. work instructions) are reviewed in line with their documented review schedule.

External inspections of the system are regularly carried out by DCCEEW Inspectors. GCC Engineers are not notified of these inspections in advance. Water quality results are reviewed by the WTP Operator and DCCEEW Inspector. Reports of findings are provided by the inspectors.

The frequency for external DWMS audits is to be determined in liaison with NSW Health.

Element 12. Review and continual improvement

Table 28. Element 12: Summary of key items, review frequencies and responsibilities

Item	Frequency	Record	Responsibility
DWMS	As required (system changes, audit findings)	Document control	Quality Systems Supervisor
	Annual review (as part of DWMS annual report process)		
	Two yearly comprehensive review		
Improvement plan spreadsheet	Annually as part of DWMS annual report	Improvement plan	Quality Systems Supervisor
	Reviewed as part of the budgeting and strategic planning process		
	Monthly as part of water quality review meeting	Meeting minutes	Meeting facilitator

12.1 Review by senior executive

- Senior executive review of the effectiveness of the management system.
- Evaluate the need for change.

The Director Utilities attends the monthly water quality meetings. The standing agenda incorporates review of the supporting procedures as well as the DWMS itself.

The Director Utilities also reviews the DWMS annual report. Improvements from the annual report are included in the Water Quality Improvement Plan and reviewed in the monthly water quality meeting if appropriate.

The process for reviewing and updating the DWMS includes:

- Annual review of DWMS implementation, documented in the DWMS Annual Report
- Review and update following significant system changes
- Comprehensive review and update on a two-yearly basis. This may occur in conjunction with the Strategic Business Plan review, risk review or annual report assessment.
- Updated with the findings of internal and external audit findings.

12.2 Drinking water quality management improvement plan

- Develop a drinking water quality management improvement plan.
- Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

The drinking water quality improvement plan consists of several documented processes detailed in Table 29.

Table 29. Drinking water quality improvement plan

Improvement plan	Details	Stored
Improvement plan spreadsheet	Short-term water quality improvement actions identified in the monthly water quality meetings are recorded in the meeting minutes .	HPE Content Manager
	Actions from the monthly water quality meetings are transferred to the Improvement plan spreadsheet.	HPE Content Manager
	Actions are assigned to people and progress is tracked. These actions are reviewed in the monthly meetings.	
	Other short-term actions identified through other assessments (e.g. internal review are also tracked through this process).	
	Actions of a capital or long-term nature (typically 12-month timeframe) are noted in the Improvement Plan spreadsheet	
	Actions are reviewed as part of the budgeting and strategic planning process.	

		Review and continual improvement
Improvement plan	Details	Stored
	The progress of actions is summarised in the annual report.	HPE Content Manager

References

Atom Consulting (2023) *GRI2302 drinking water quality risk assessment output paper v2*

Atom Consulting (2023) *GRI2307B CCP review workshop output paper v2*

NSW Department of Health (2011) *New South Wales Code of Practice for Fluoridation of Public Water Supplies*. Gladesville, NSW Health

NSW Health (2022) *NSW Guideline for Review and Audit of Drinking Water Management Systems*, NSW Health

NHMRC, NRMCC (2011) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra





Disclaimer

Whilst every reasonable effort has been made to ensure the accuracy of the information presented, the Riverina and Murray Joint organisation and its employees, to the extent of the law, disclaim any liabilities to any person in respect to errors and omissions. We recognise that policies, programs and statistics may have changed since publishing this document.

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About Riverina and Murray Joint Organisation

Membership

The Riverina and Murray Joint Organisation (RAMJO) was proclaimed in May 2018 and became operational as of 1st July 2018. Membership is voluntary and consists of the following 11 Councils;

ALBURY CITY	BERRIGAN SHIRE	CARRATHOOL SHIRE
EDWARD RIVER	FEDERATION	GRIFFITH CITY
HAY SHIRE	LEETON SHIRE	MURRAY RIVER
MURRUMBIDGEE	NARRANDERA SHIRE	

The RAMJO board comprises the Mayors of the Member Councils (the voting members), as well as the Director Riverina Murray of Regional NSW (a non-voting member), the Riverina Murray Council Engagement Officer from the Office of Local Government (a non-voting member) and the General Managers of the Member Councils (also non-voting members). The board is supported by an Executive Officer.

Purpose

Joint Organisations (JOs) are legal entities legislated under the Local Government Act 1993. The JOs aim to transform the way local and state governments collaborate, plan, set priorities and deliver important projects on a regional scale across New South Wales (NSW) enabling our communities to thrive.

Functions

The NSW Local Government Act states the core functions for the Joint Organisations as:

- 1. Strategic Planning and Priority Setting** – to establish strategic regional priorities for the joint organisation area and develop strategies and plans for delivering these priorities.
- 2. Regional Leadership and Advocacy** – to provide regional leadership for the joint organisation area and to be an advocate for strategic regional priorities.
- 3. Intergovernmental Collaboration** – to identify and take up opportunities for intergovernmental cooperation on matters relating to the joint organisation area.

The JOs may perform other functions, supplementary or ancillary to the core functions including:

1. Service delivery to Member Councils
2. Delivery of services to community
3. Sharing of resources
4. Enhancing the capacity of Member Councils

The RAMJO Region

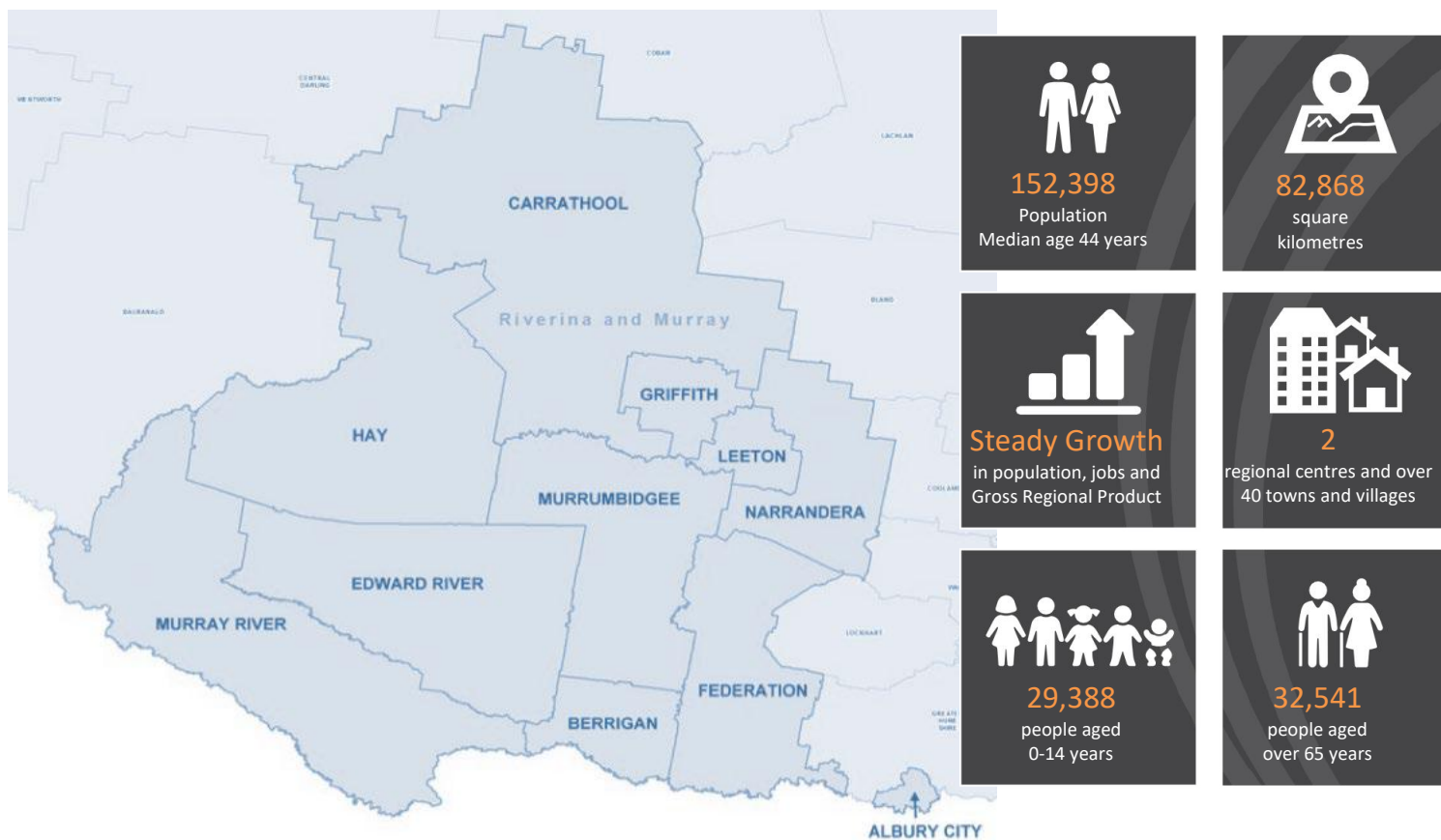


Figure 1 Map of the RAMJO Region

Source: ABS Stat (Estimated Resident Population by Local Government Area – Age and Sex – 2017 - collated) <http://stat.data.abs.gov.au/>

The Planning Process

Our Steps

RAMJO reviewed the previous evidenced based Statement of Regional Strategic Priorities, and revised and updated this to ensure it reflected the changing context we operate in. We ensured it reflected the synergies and uniqueness of each member council as well as the trends, challenges and opportunities moving forward in a regional and state context.

The process included a review of local, regional and state strategic plans, and a strategic planning workshop. (See Appendix for a list of those interviewed and a list of documents reviewed – table 1).

Choosing the Priorities

Many issues and possible actions were identified as part of the strategic planning process. Those that have been included in the Statement of Strategic Priorities were selected using the following filtering questions:

1. What do you think the top three issues / risks are for the RAMJO region?
2. What needs to be done to meaningfully address these issues?
3. Who is already acting in these spaces and what are they doing?
4. What could the joint organisation do to address these issues?
 - Considering spheres of control, influence and concern
 - Considering gaps, leverage or value-add opportunities
5. What difference could RAMJO make?
6. Where can RAMJO have the biggest impact?
7. Would your council be willing to pay more to enable the JO to address more issues?



Key Strengths, Challenges and Opportunities

The communities of RAMJO have a long list of diverse and enduring strengths which have contributed to an overall population growth in the region of 5.47% from 2001 (140,920) to 2021 (152,398) and a gross regional product of approximately \$9.5 billion p.a. (See figures 3 and 6).

Some of the strengths include enviable country living with beautiful rivers, lakes and forests, high quality educational facilities, specialist health and medical services, and excellent sporting and cultural facilities. The region has a highly productive and diverse agricultural and manufacturing industry that benefit from being located on major transport routes between Melbourne and Sydney. The diversity of the agricultural sector includes major production of sheep, grains (especially wheat, barley and rice), beef and dairy cattle, poultry, cotton, citrus, grapes, canola, vegetables, almonds and wool.

The region also has many large scale private and government employers and well-established tourism (particularly in the south and emerging in the north). Further details of these strengths can be viewed in the four Regional Economic Development Strategies (REDS) for the RAMJO region (the 2018-2022 strategies are being refreshed as this SSRP has been prepared, and RAMJO and the member councils have participated actively in their consultation and preparation).

RAMJO aims to build on these strengths and support its communities to grow and thrive in modern times, assisting them to cater for changing needs and expectations.

Some of these changes include a shift in the size and structure of the population. Whilst a collective population growth is predicted for the region over the next 20 years, this is made up of an anticipated growth in four (4) of the eleven (11) local government areas and a predicted decline in the other seven (7). Much of this is due to the outward migration of young people as they leave the region to study and/or seek employment. (See tables 5 and 6)

Additionally, like all of Australia, RAMJO communities are generally predicted to age, with people over 65 years increasing from an overall 21.35% to 31.91% of the total population by 2036. (See figure 4, tables 5 and 6)

A change in population size and structure presents both challenges and opportunities. Declining populations often result in a loss of services which can cause a snowball effect of further isolation and decline. The fact that the RAMJO region is full of strengths and opportunities means the declines experienced elsewhere will not be the case for us because our capital cities have the opposite issue of over population and an inability to keep up with growth demand. We will work together with government to support rural settlement and growth choices.

Ageing populations require services and infrastructure to meet their changing needs. Health Care and Social Assistance is already the largest and fastest growing employment industry in RAMJO. Improved scale and capacity can enable the provision of infrastructure and services in a cost-effective manner.

Population stabilisation and growth have therefore been identified as the overarching goal of RAMJO. For this to occur there is a need to address the key underlying issues affecting the economic, social and environmental wellbeing of RAMJO communities (the triple bottom line – see figure 2).

These include the following and will be priorities for action by RAMJO:

- Water Security
- Energy Security and Affordability
- Transport Connectivity
- Digital Connectivity
- Health Services
- Industry/Workforce/ Jobs growth
- Housing (new in 2022)

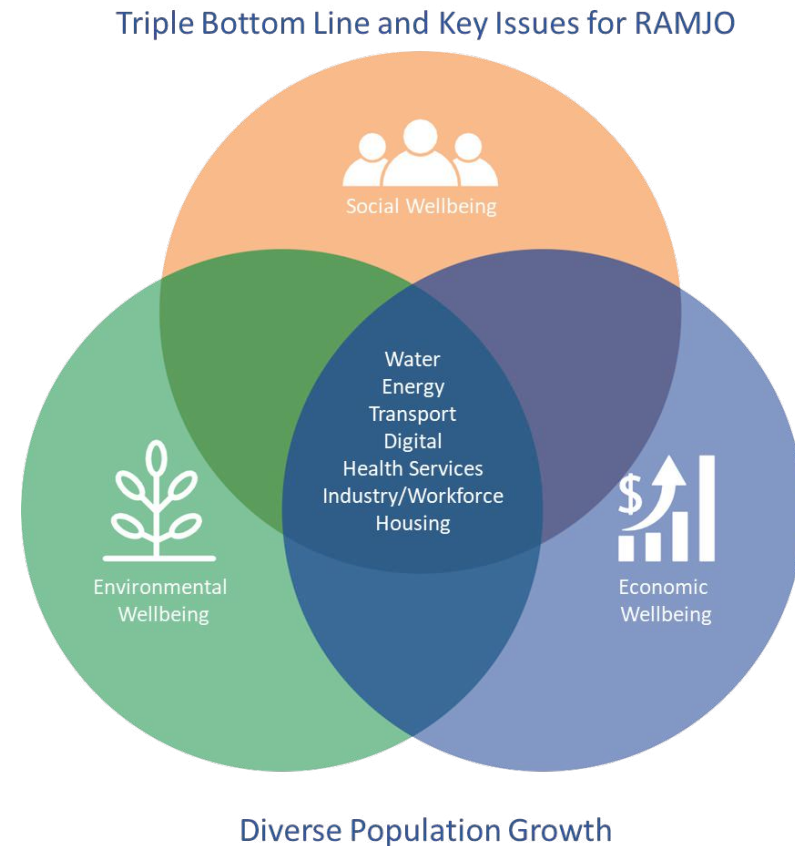
RAMJO acknowledges many of the issues to be addressed will require cross border/cross region strategies and therefore a need to work in partnership with many different stakeholders. These collaborations will strengthen both our capacity to attract funding and economic development activity in the region as well as the potential impact.

Successful implementation of the RAMJO priorities, strategies and actions in this Statement will likely require additional resourcing. Resourcing may be sourced via a range of potential avenues, such as additional State government funding, specific grant programs, collaboration with stakeholders and partners, or through the RAMJO Councils contributing resources monetarily or in-kind.

To act effectively, RAMJO will need to build the capacity of the JO and the member councils. The biggest issues for the councils being:

- the ability to attract and maintain a robust workforce particularly engineering, surveying, planning, finance and project management
- the ability to attract contractors for infrastructure maintenance and construction
- reducing duplication and optimising synergies to unlock and redirect funds and skills to ensure better services and outcomes

Figure 2 Triple Bottom Line and Key Issues for RAMJO



RAMJO Population Growth and Projected Population (Structure) Change

Figure 3 RAMJO Population Growth 2001 - 2021

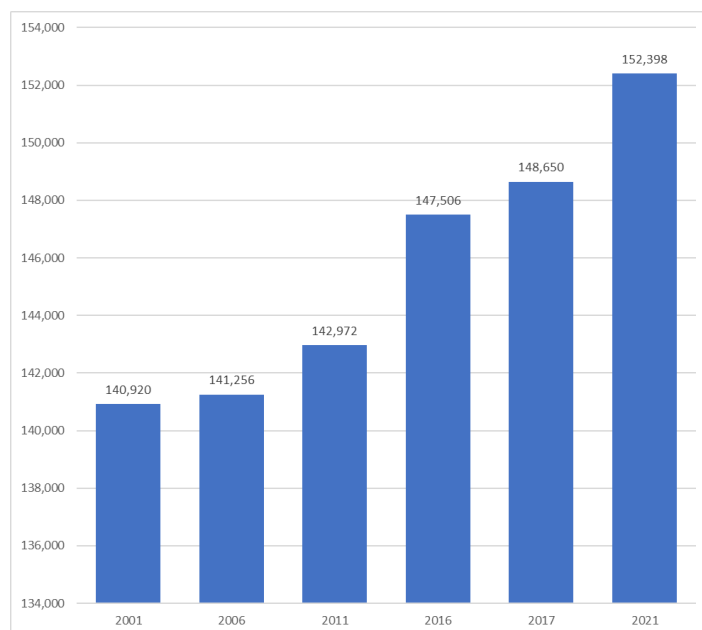


Figure 3 shows the RAMJO population increase between 2001 – 2021. There was a significant growth in the 5-year period between 2016 – 2021.

Source: Source: Australian Bureau of Statistics, *Regional Population Growth, Australia* (3218.0). Compiled and presented in profile.id by .id (informed decisions) <http://www.id.com.au>

Figure 4 Projected RAMJO Population Structure Change

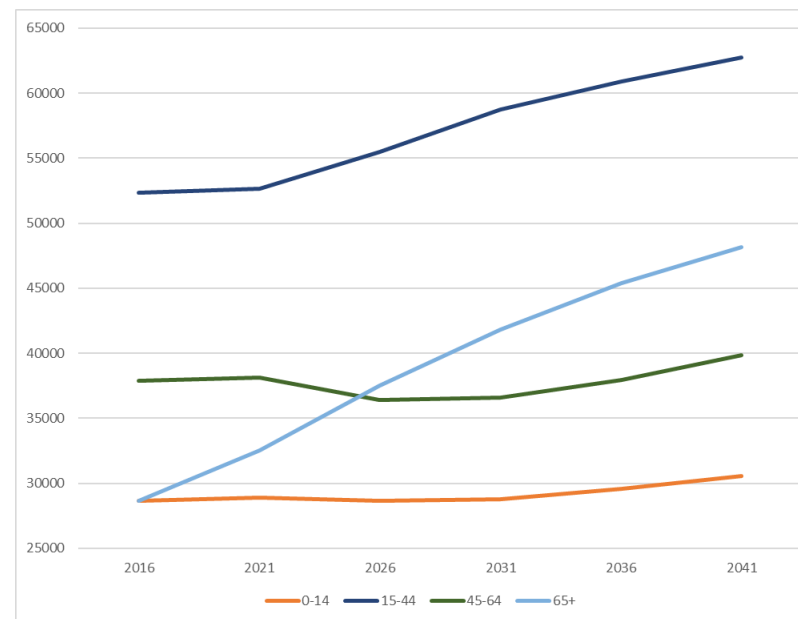
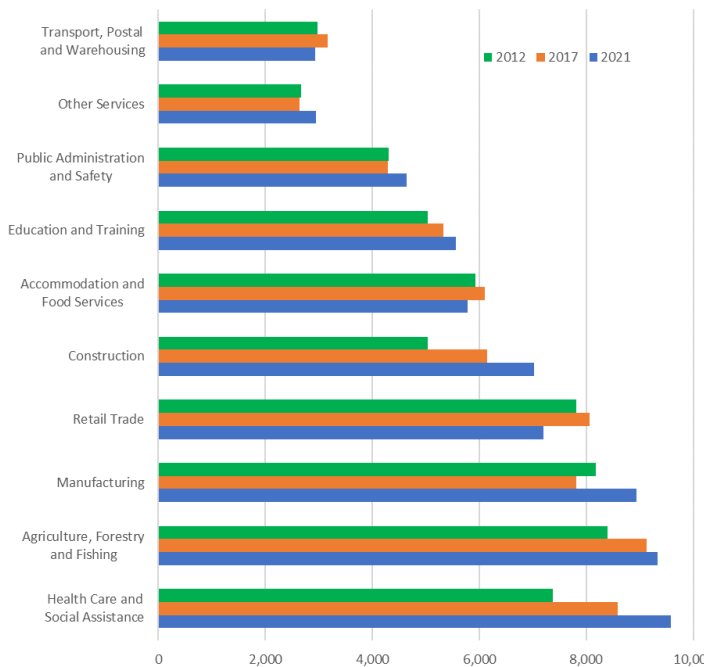


Figure 4 shows the predicted population decline of people aged in the 0-14 years and 15-44 years and a significant increase of those aged over 65 years. This pattern of population structure change is similar to most rural and regional areas across Australia.

Source: NSW Department of Planning and Environment 2018 (2016 Census) <http://www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-projections>

RAMJO Employment by Industry and Gross Regional Product

Figure 5 Top 10 Employment by Industry: 2012, 2017 and 2021

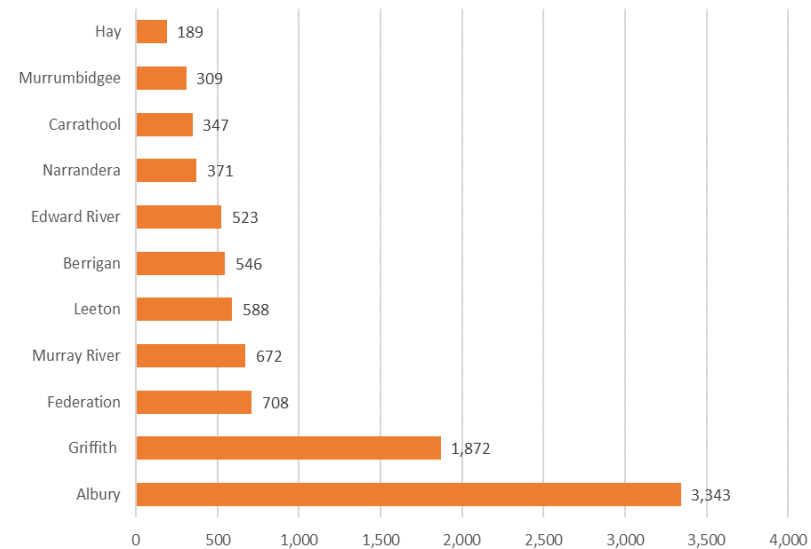


There was an overall growth of employment by industry from 62,304 to 63,143 between 2006 and 2021. Figure 5 highlights the steady growth in the largest employment sector; Health Care and social assistance, as well as the smaller employment sectors.

See appendix for data table

Source: ProfileID

Figure 6 Gross Regional Product (2021) \$ Millions



The total gross Regional Product was \$9.47 billion in 2021. Figure 6 highlights the comparative across the RAMJO councils. (NSW Gross State Product of \$632.882 billion.)

See appendix for data table

Source: ProfileID,



Our Vision

A Thriving Region Abundant In Sustainable Communities

Our Mission

To collaborate effectively through strategic planning, priority setting, advocating, engaging with governments and key stakeholders to ensure the long-term sustainability, wellbeing and liveability of the region's communities.

Our Principles

RAMJO will;

1. Be owned by and accountable to the Member Councils
2. Not impose significant red tape cost or risks on Member Councils
3. Ensure benefits delivered for the region outweigh any costs and risks
4. Work collaboratively with other levels of government, other partners and stakeholders
5. Enable significant projects and initiatives, with associated funding and assets, to be managed regionally, where doing so is consistent with the shared vision for the region
6. Ensure good governance
7. Serve the best interests of the region and its communities

Our Values

RAMJO is built on a commitment to collaboration (and not competition). For this to be effective it is essential that we operate with the following values:

Communication	We are honest, transparent, clear, robust, respectful and timely with our communication.
Authentic	We harness our diversity and work to our strengths by inviting and respecting our unique perspectives, talents and feedback.
Cohesive	We are committed to reaching our common goals together, so we speak with one voice on regional issues.
Evidenced based	Our decisions are based on evidence and are aligned with local, regional and State strategies and policies.
Reliable	We trust each other to be consistently reliable.
Visionary	We focus our attention on the big picture and challenge and support each other to be visionary and innovative in our thinking.

Our Strategic Priorities

Our goal:

To increase diverse population growth within RAMJO.

Our Strategic Priority Pillars:

1. Improve water security
2. Improve energy security and affordability
3. Improve transport connectivity for freight and people
4. Improve digital connectivity
5. Better match health services to our changing needs
6. Boost industry, workforce and jobs
7. Improve housing in our region

Our Foundation for Action:

Strengthen our capacity to act as a Joint Organisation and as individual Councils.

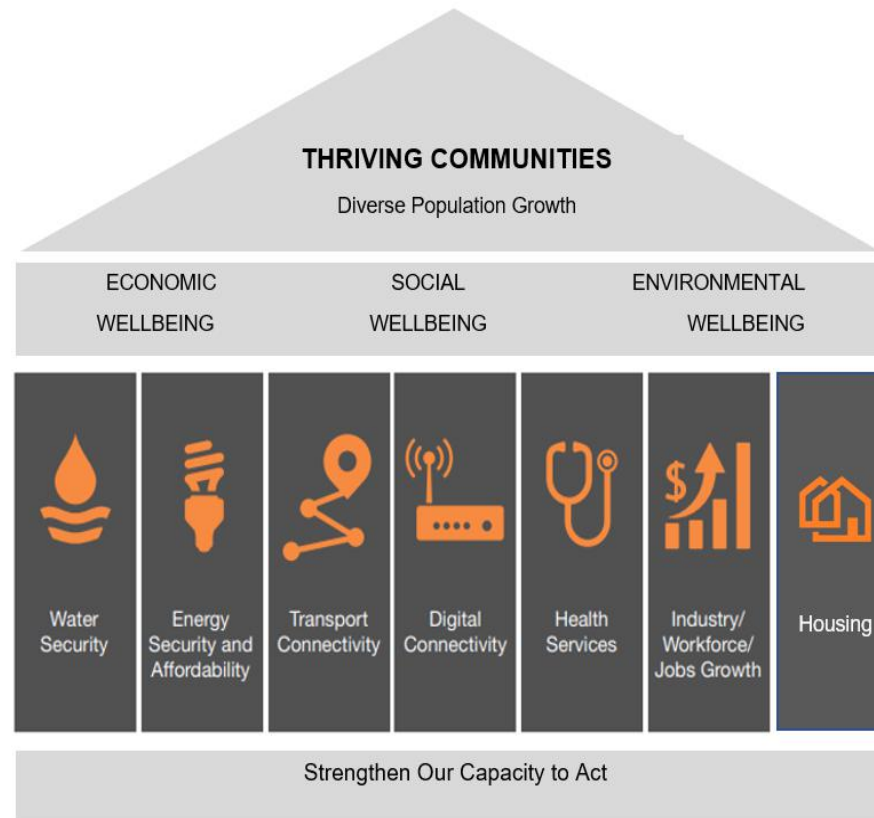


Figure 7: Our Strategic Priorities





Priority Pillar 1: Improve Water Security

Context - Why is this important?

Much of the RAMJO region economy is heavily dependent on access to water that is consistent, reliable, affordable, good quality and sustainable. These communities are built on irrigated agriculture, horticulture, and viticulture. Almost 80% of food production in NSW comes from the Riverina Murray region. Water based tourism is also an important feature thanks to the region's beautiful rivers, lakes and wetlands.

The effects of climate change are being felt across the region and many have been impacted by the decisions made as part of the Murray Darling Basin Plan. Some areas have experienced businesses choosing not to invest in the region and of business closures due to water issues. The flow on effects of this being a loss of jobs, population and services, which may lead to broader social effects. Further, many communities, particularly along the Murray River, have experienced inconsistent recreational and tourism opportunities due to fluctuating river levels and damage to river banks.

Regional strategic documents recognise water (like energy) is a critical enabling factor for economic growth and outline a need for a multifaceted approach with modernisation and global (market) thinking as themes. Key advocacy messages need to include a call out for no more productive water buybacks; a common sense approach to Sustainable Diversion Limit Adjustment Mechanism projects to allow new ideas and more flexible timeframes (especially given the La Nina events of recent times which relax the need for environmental watering); more timely water allocation notification to boost sowing confidence, improved agricultural productivity and resilience through diversification, value adding and innovation, a reduced reliance on high water use crops, improved storage capacity (on and off river); investment in on-farm efficiency projects and improved water trading literacy to better manage risk and optimise outcomes for farmers.

It is acknowledged that water policy is complex and difficult to navigate and that it is imperative RAMJO operates from an informed position.

Separately, maintaining high quality urban water supply and waste water management is core business for the RAMJO councils. However, many have ageing infrastructure that is no longer fit for purpose. Maintaining and growing our population and industry would benefit from a regional approach to improving urban water.

Key Stakeholders - Who will we work with?

- Murray Darling Basin Authority (MDBA)
- Government and relevant Ministers – Federal and State
- National Federation Reform Council (NFRC)
- Water NSW and Department of Primary Industries Water
- Murray and Murrumbidgee Customer Advisory Groups
- Other Joint Organisations
- Irrigators and irrigation companies – local, state and national
- Commonwealth/State Water holders
- Murray Darling Association (MDA)
- Murrumbidgee Environmental Water Advisory Group
- One Basin CRC

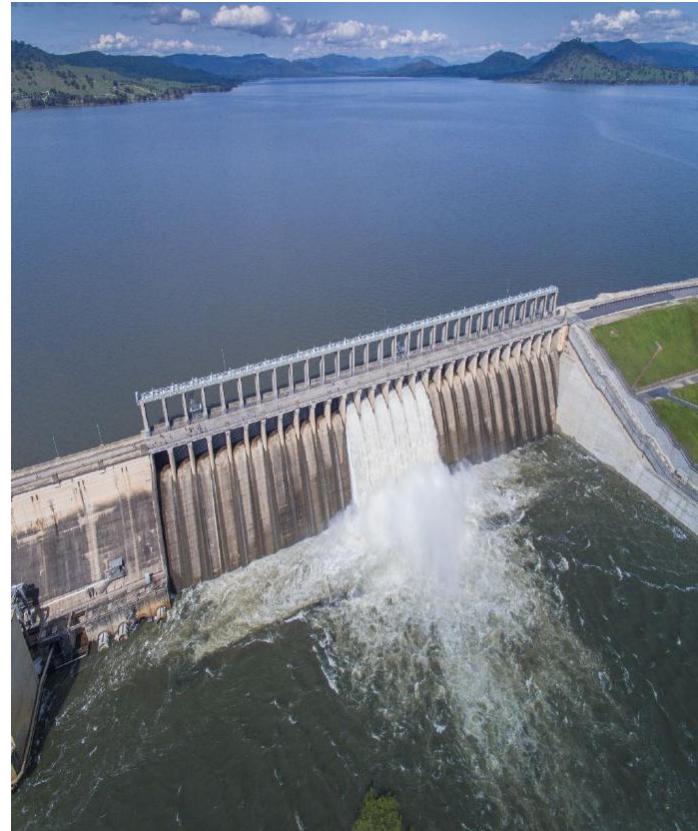
State and Regional Document Links

- RAMJO Water paper
- NSW Water Strategy
- NSW Govt – Riverina Murray Regional Plan 2041
- Regional Economic Development Strategies – Western Murray, Western Riverina, Murray and Albury Wodonga
- Murray Darling Basin Plan 2012
- Water Sharing Plans for NSW (under development)
- Murrumbidgee Regional Water Strategy (still in draft ??)
- Murray Regional Water Strategy (still in draft ??)

Outcomes – What difference will we make to Water Security?

RAMJO will achieve:

- An up to date shared Strategy and a shared Implementation and Resourcing Plan (I&R Plan) for water Security in the region
- Genuine engagement, transparency, accountability and commitment with the Murray Darling Basin Authority. governments and government agencies , including meaningful submissions to the review of the Murray Darling Plan.
- Increased infrastructure funding to the region for improved water security
- Regional water security



Actions – What we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - What will we measure?	Tool - how will we measure it?
1. Water sub-committee continues to lead collaboration, planning and action on water security.	Strategic planning and priority setting	A representative committee functioning well.	Observational
2. Continue to keep RAMJO's water position paper up to date, including :	Strategic planning and priority setting	Strategy and I&R Plan developed, supported by key stakeholders and implementation commenced.	Report
a. maintaining relationships with Murray-Darling Basin Authority, CEWH and local Irrigation companies and their associations	Regional leadership and advocacy	Representation achieved, and contributions/requests acted on.	Observational
b. Advocate and work with governments for long term infrastructure projects to address water security for the region (both for farming and urban).	Intergovernmental collaboration	Infrastructure funding for key projects achieved.	Review
c. Continue to be a meaningful advocate to all levels of government regarding the Murray Darling Basin Plan, including DPE Water, NSW Water, Federal Dept Agriculture	Regional leadership and advocacy	Advocacy and outcomes	Review
d. Advocate meaningfully during the Murray Darling Basin Plan review process.	Regional leadership and advocacy	Advocacy and outcomes	Review
3. Participate in the WaterNSW Customer Advisory Groups	Regional leadership and advocacy	Advocacy and outcomes	Report to Board



Priority Pillar 2: Improve Energy Security and Affordability

Context - Why is this important?

The need for affordable and clean energy is important for both economic prosperity and environmental sustainability. Currently our region is faced with several energy challenges;

- Ageing infrastructure
- Gaps in infrastructure meaning demand outstrips supply (particularly for manufacturing growth)
- Generators are used in some areas because energy supplies are unreliable
- Lack of natural gas infrastructure
- Rising energy costs and high costs of connecting to energy
- Pressure to be more environmentally friendly with renewable energy generation

Our current circumstances have meant a loss of investment growth in some of our areas as the energy requirements cannot be met. While progress has been made on many fronts with solar farms being established in the region for example, much more could be done.

The retirement of ageing coal-fired generators over the next 20 years combined with increasing demands, especially at peak times, will put enormous pressure on an already struggling system. The NSW government recently released a plan to establish “energy Zones” across NSW to support a transition to a modern energy system. The Hay area is identified as one of the three zones. RAMJO will need to work with government on this strategy as well as the NSW Renewable Energy Action Plan.

The need for improved access to clean energy has been highlighted in many strategic documents and generating energy from waste is an emerging opportunity.

RAMJO has been lucky enough to work with the NSW government to have our Regional Energy Strategy funded during the last SSRP, and we aim to implement the strategy over the coming years.

Key Stakeholders - Who will we work with?

- Essential Energy, Energy Companies, Gas Providers
- Independent Pricing and Regulatory Tribunal (IPART),
- Australian Energy Market Commission (AEMC)
- Relevant State and Federal authorities
- Existing RAMJO NSW government partner Office of Energy and Climate Change
- Renewable energy operators
- Research partners, CSIRO, Australian Renewal Energy Agency (ARENA), Centres for excellence
- Other Joint Organisations e.g. Southern Lights project
- Clean Energy Finance Corporation (Federal) and NSW Agencies
- Communities / social enterprises

State and Regional Document Links

- RAMJO Regional Energy Strategy (to be adopted November 2022)
- NSW Energy Strategy
- NSW Net Zero Plan Stage 1 : 2020-2030
- NSW Government – A 20 Year Economic Vision for Regional NSW (February 2021)
- NSW Government – Riverina Murray Regional Plan 2041
- Regional Economic Development Strategies – Western Murray, Western Riverina, Murray, Albury Wodonga

Outcomes – What difference will we make to Energy Security?

RAMJO will achieve:

- Adoption of the RAMJO Regional Energy Strategy
- Increased funding and development of local and regional energy infrastructure
- Improved energy access and transmission (extraction and feeding into the grid)
- Increased local generation of clean energy to become more self-reliant AND improved value for money
- Regional energy security



Actions – What we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - What will we measure?	Tool - How will we measure it?
1. Energy sub-committee meets regularly, to lead collaboration, planning and action on energy security.	Strategic planning and priority setting	A representative committee functioning well.	Observational
2. RAMJO Regional Energy Strategy adopted by the Board.	Strategic planning and priority setting	Report completed and supports strategy development.	Report
3. Actions and outcomes from the RAMJO Regional Energy Strategy advocated for, member councils supported in their work.	Strategic planning and priority setting	Strategy and I&R Plan developed, supported by key stakeholders and implementation commenced.	Annual Review
4. Advocate for improved energy solutions such as lower energy prices, subsidies and other incentives for renewable energy projects, research into new technologies.	Regional leadership and advocacy	Representation achieved, and issues acted on.	Annual Review
5. Advocate and work with governments and energy providers for long term infrastructure projects to address energy security for the region. Examples such as electric vehicles and network capacity constraints.	Intergovernmental collaboration	Representation achieved, and issues acted on.	Review



Priority Pillar 3: Improve Transport Connectivity

Context - Why is this important?

Transport connectivity is a key driver of economic and social wellbeing and incorporates two key areas that need addressing: freight and public transport.

Some of the issues for freight transport in the region include:

- Road - Whilst well connected with major highway corridors, many of the local roads that link to the highway corridors or major freight intermodals are unsealed or subject to constraints and do not meet permit standards for High Productivity Vehicles i.e. the last leg of the supply chain (or first leg as it is from farm gate) is compromised.
- Air – Limited scheduling, limited loads, expensive and difficult to access
- Rail – Single track configurations limit freight transport and cause blockages. Inflexible scheduling.
- Interchanges - Lack of freight and logistics interchanges that enable transitions of loads between large and small trucks.
- Councils have large maintenance backlogs for basic infrastructure and are challenged to fund and attract contractors to complete necessary works.

During the term of the previous SSRP RAMJO developed a Regional Freight Transport Plan detailing a list of road constraints and necessary freight infrastructure projects. The resultant RAMJO Freight Priorities Report 2022, identifies investment priorities for the region, including Sturt Highway Corridor, Cobb Highway Corridor, Federation Way Corridor, Kidman Way Corridor, Ettamogah Intermodal Hub, Tocumwal Intermodal Freight Strategy, and WRConnect Intermodal Freight Terminal.

Public transport issues are diverse across our RAMJO area. Some communities have a complete lack of public transport while others have varying degrees of access and issues with schedule connections. A regional public transport strategy would specifically address the needs of our ageing population, young people, people with disabilities, backpacker/ itinerant workers, those on low incomes and visitors. It would seek to improve connections between our towns and villages as well as to capital cities and consider technology and innovative service models.

Key Stakeholders - Who will we work with?

- Freight Industry and Producers
- Other JOs
- Victorian/NSW/Federal Government incl. Heavy Vehicle Regulator
- Regional Development Australia – Murray and Riverina
- Ports – Melbourne, Botany, Kembla, Newcastle
- Train and air freight operators
- Transport NSW
- Cross Border Commissioners
- Community

State and Regional Document Links

- NSW Government – Future Transport Strategy
- NSW Government - Future Transport Technology Roadmap 2021-2024
- NSW Government – A 20 Year Economic Vision for Regional NSW
- NSW Government – Riverina Murray Regional Plan 2041
- RDA Murray Regional Plan 2022-2025
- Regional Economic Development Strategies – Albury Wodonga, Western Murray, Western Riverina, Murray
- RAMJO Regional Freight Plan, RAMJO Freight Priorities Report 2022

Outcomes – What difference will we make to Transport Connectivity?

RAMJO will achieve:

- Shared Strategies and shared Implementation and Resourcing Plans (I&R Plans) for Freight Transport Connectivity and Public Transport Connectivity in the region
- Increased funding and action for priority transport infrastructure within the region
- Increased liveability within our smaller communities with increased access to education, employment and health services etc



Actions – What we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - What will we measure?	Tool - How will we measure it?
1. Transport Sub-committee meets quarterly to lead collaboration, planning and action on transport connectivity (both freight and people).	Strategic planning and priority setting	A representative committee functioning well.	Observational
2. Support provided to the RAMJO Engineers forum, who meet quarterly and feed into the Transport Sub-committee.	Strategic planning and priority setting	Engineers' forum functioning well	Observational
3. Regional Freight priorities updated annually.	Strategic planning and priority setting	Report completed and supports strategy development.	Report
4. Regional Freight Strategy updated during the term of the SSRP.	Strategic planning and priority setting	Strategy and I&R Plans developed, supported by key stakeholders and implementation commenced	Annual Review
5. Advocate and work with governments to progress priority infrastructure projects that address freight efficiencies and safety across the region..	Intergovernmental collaboration and advocacy	Funding received and projects completed.	Annual Review



Priority Pillar 4: Improve Digital Connectivity

Context - Why is this important?

Our world is becoming more and more reliant on digital technology and its reliable supply affects our capacity for economic growth, environmental sustainability and liveability.

Digital technology is used by every industry and particularly benefits rural areas with such things as water management (telemetry), enabling online/ distance education, decentralised employment, supporting close to home health service models, assisting irrigators with remote water testing and pump controls, and farmers with stock control through such things as livestock scanning and facial recognition. The impact of the Covid-19 pandemic reiterated the importance of digital connectivity in our lives.

A lack of digital connectivity is a major problem for the RAMJO area. The issues include mobile phone blackspots, slow, unreliable or patchy internet connections, poor national broadband network (NBN) coverage, and poor satellite coverage. Additionally, with the asymmetric digital subscriber line (ADSL) services being phased out, some RAMJO communities are at risk of being without service unless they are prepared and able to move to the NBN or newer satellite service providers where they are available.

These issues are affecting everyday transactions as well as limiting the implementation of new technologies including self-monitoring analysis and reporting (SMART) technology and placing our rural communities at a disadvantage.

The challenges are the exponential growth in demand and expectations by community and business matched with the large geographical size of the RAMJO area.

Our lack of ability to keep up with demand means we are at risk of losing industry investment and population growth. Improving digital connectivity is noted in multiple strategy documents as crucial for economic growth as well as our health and safety. However, there is a lack of strategies detailing or proposing solutions.

A key role for RAMJO is to work with community, business, government and service providers to facilitate the development of key infrastructure to improve performance and attract economic growth in the region.

Key Stakeholders - who will we work with?

- NSW Government - including local Members of Parliament
- Federal Government – including Members of Parliament
- Telecommunications providers
- National Broad Band Network – Review Board
- Private sector
- Community (baselines, advocacy, feedback) – social enterprises, community collaboration
- Regional Development Australia – Riverina and Murray

State and Regional Document Links

- RDA Murray Regional Plan 2022-2025
- Regional Economic Development Strategies – Albury Wodonga, Western Murray, Western Riverina, Murray
- Australian Government Regional Telecommunications Review “2021 Regional Telecommunications Review - A step change in demand”

Outcomes – What difference will we make to Digital Connectivity?

RAMJO will advocate for:

- Increased funding and action for priority digital communication infrastructure and services within the region
- Comprehensive and reliable digital coverage across the region, free of blackspots
- Increased liveability within RAMJO with increased digital access and reliability for education, employment, health services, industry etc



Actions – what we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - what will we measure?	Tool - how will we measure it?
1. Digital Connectivity sub-committee collaborates with key stakeholders (including RDA Riverina and Murray) to ensure regional changes and developments are identified.	Strategic planning and priority setting	A representative committee functioning well.	Observational
2. Advocate and work with governments and digital communication service providers to fund and deliver on agreed infrastructure and service projects to address digital connectivity needs for the region.	Intergovernmental collaboration	Priority infrastructure projects funded and delivered.	Annual Review



Priority Pillar 5: Better Match Health Services to Our Changing Needs

Context - Why is this important?

The health of rural Australians is poorer than for individuals living in the cities and regional centres and even worse for our indigenous populations. How can we change that for the residents of the RAMJO area?

The major challenges facing the smaller communities in the RAMJO area is maintaining basic health services and addressing the changing needs of the ageing population (e.g. supporting ageing in place) and the increased demand for mental health services both for young people and adults. The loss of health services (such as general practitioners, dentists, allied health professionals, and specialist medical services such as obstetricians) results in further population decline as people relocate to be close to these important services.

Successful strategies for maintaining health services to date include Councils providing housing and medical facilities and the provision of GP training locally. However, gaps still exist, and innovative solutions are required to address these shortfalls.

The direction for NSW Health is to create self-reliant regions where people can get the best possible services close to home. Self-reliance involves developing regional centres of excellence such as Albury Wodonga Health with its Cancer Centre, regional health hubs and developing new models of care to take the pressure off major hospitals e.g. establishing systems and supports to utilise smaller hospitals for recovery and rehabilitation pre or post treatment at a major centre. These strategies require improvements in transport, digital connectivity (e-health), infrastructure, workforce training and new place-based service provision.

RAMJO has a role in working with health service providers (and training organisations) to ensure the needs of the communities are met (and are affordable) with consideration given to the broader underlying supports/enablers required and to identify the potential role of Councils.

Key Stakeholders - Who will we work with?

- NSW Department of Health
- Murrumbidgee Local Health District (MLHD)
- Primary Health Networks (PHN)
- NSW Ambulance Service
- Albury Wodonga Health (AWH)
- Local Health Advisory Committees (LHACs)
- Australian Medical Association (AMA)
- Rural Doctor Network (RDN)
- General Practitioners, Nurses, Allied Health Providers
- Universities and other health training providers
- Community and Patient Transport Services
- Aboriginal Health Services
- National Disability Insurance Scheme (NDIS) / Providers

State and Regional Document Links

- NSW Premier's Priority "Improving service levels in hospitals" and "Improving outpatient and community care"
- RDA Murray Regional Plan 2022-2025
- Murrumbidgee Local Health District Strategic Plan 2021-2026
- Murrumbidgee Primary Health Network Strategic Plan 2023-2027
- Albury Wodonga Health Master Plan
- Regional Economic Development Strategies – Albury Wodonga, Western Riverina, Murray, Western Murray
- NSW Government "Health outcomes and access to health and hospital services in rural, regional and remote New South Wales"
- Clinical Services Plans

Outcomes – What difference will we make to better match Health Services to our changing needs?

RAMJO will achieve:

- Meaningful advocacy for improved health and health service provision in the region, including cross border concerns
- Increased funding for health infrastructure and services
- Improved access to health and medical services closer to home – locally and regionally



Actions – What we are going to do?	Core Function	Success Measures – how will we know we have succeeded?	
		Indicator - what will we measure?	Tool - how will we measure it?
1. Continue the Health sub-committee to lead collaboration, planning and action on health service provision.	Strategic planning and priority setting	A representative committee functioning well.	Observational
2. Effectively collaborate and advocate on Health Care provision to improve health service provision for the region.	Intergovernmental collaboration	Input into Regional Health Strategy outcomes provided.	Annual Review
3. Partner with key stakeholders to identify work already taking place in this space, including RDAs, Regional Health organisations and Peak Bodies.	Strategic planning and priority setting	Report completed and supports strategy development	Report
4. Advocate and work with governments to fund and deliver on agreed health infrastructure projects for the region e.g. telehealth, aged care facilities, fit for purpose operating theatres etc.	Intergovernmental collaboration	Priority infrastructure projects funded and delivered	Annual Review

Priority Pillar 6: Boost Industry/Workforce/Jobs



Context - Why is this important?

Industry growth has a significant impact on population growth e.g. 20 new jobs can mean an increase of 60-80 people as they bring their families with them to the region. However, there are many underlying issues preventing industry growth and these vary across RAMJO. Identified issues include; poor transport connectivity, digital connectivity, water and energy security, and a lack of suitable housing and lack of a skilled workforce.

Solutions to preserving and enhancing productivity in the face of a more changeable environment is critical to our economic future, particularly as we aim to gain access to overseas markets. The RAMJO region is well placed to lead innovations in this space.

The Regional Economic Development Strategies recommend a need to support a more diverse and resilient economy by attracting industries that are not impacted by seasonal conditions. They also recommend growing “value-adding” opportunities such as bringing processing to the region to complement production. Growth areas are highlighted as agriculture, manufacturing, health and aged care.

A significant issue for RAMJO is the outward migration of young people as they leave the region to gain training, education and employment. Attention must be given to improving access to education, traineeships and job pathways across the region. This will require better relationships with schools, TAFEs, universities (including Country University Centres) and employers.

Some of the other solutions to industry, jobs and employment growth may include stronger regional marketing strategies to industry, the removal of red tape, a reduction in costs and other enabling factors mentioned throughout the other priorities.

Key Stakeholders - Who will we work with?

- Member councils
- Federal and State Governments both NSW and Victorian
- Registered Training Authorities (RTO's) including Uni and TAFE
- Key industry groups
- Business Enterprise Centres (BECs) and Local Business Chambers
- Local Members - Federal/State
- Cross Border Commissioners and Victorian Councils
- Energy/water corporations
- Other Joint Organisations (and Councils)
- Regional Leadership Executive (Premiers and Cabinet)
- Education/Schools
- Industry
- Regional Development Australia (RDA) – skilled migration and grow your own programs
- Country University Centres

State and Regional Document Links

- NSW Government – A 20 Year Economic Vision for Regional NSW
- NSW Government – Riverina Murray Regional Plan 2041
- RDA Murray Regional Plan 2022-2025
- RDA Riverina – Riverina Plan and Strategic Priorities 2022-2023
- Regional Economic Development Strategies – Albury Wodonga, Western Murray, Western Riverina, Murray

Outcomes – What difference will we make to boost our industry/workforce/jobs?

RAMJO will achieve:

- A shared Strategy and a shared Implementation and Resourcing Plan (I&R Plan) for industry, workforce and jobs growth in the region
- Local training pathways, incentives and supports established to meet workforce gaps



Actions – What we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - what will we measure?	Tool - how will we measure it?
1. Partner with key stakeholders to identify work already taking place in this space, including RDAs, JOs /ROCs, and state and federal strategies in workforce development.	Strategic planning and priority setting	Report completed and supports strategy development.	Report
2. Work with our key stakeholders to develop and implement an evidenced based and prioritised Strategy and an implementation and Resourcing Plan to boost industry, workforce, and jobs growth for the region. Considerations will include: <ul style="list-style-type: none"> a. Understand gaps in RAMJO areas. b. Work with training providers to develop training pathways to address workforce gaps. c. Work with the RDAs and settlement support initiatives (such as GROW; SSI and ROA) to support skilled migration. d. Understand the connections with Housing and Health pillars. e. Explore opportunities for early retirement of HECS / HELP debt for people working in regional areas (similarly to zone taxation rebates). 	Strategic planning and priority setting Regional leadership and advocacy	Annual review	Report
3. Advocate and seek funding opportunities based on the Industry and Workforce Regional Strategy.	Strategic planning and priority setting	Advocacy / Funding applications	Report

Priority Pillar 7: Housing

Context - Why is this important?

Consistently a top issue identified across RAMJO Councils as part of their Community Strategic Plans and the 2022 SSRP planning process was Housing.

There are growing issues in housing supply and affordability in Regional NSW, and even RAMJO Councils without significant population growth are facing critical housing concerns in their communities.

The NSW State government has released their first State Housing Strategy, and the Riverina Murray Regional Plan 2041 (draft) has a renewed focus on Housing. This reflects the seriousness and long term nature of the issue and the collaborative approach needed.

There are issues not just in straight supply volumes, but also the type and accessibility of available homes. COVID-19 has also changed the makeup of people moving to and from the regions, which has further affected available housing supply.

The Housing supply issue touches upon other areas of RAMJO's pillars, as it affects both Jobs and Workforce, through the ability to attract people to an area where they can't afford to live, and through Health, as, for example, key worker housing shortages will require working with Local Health Districts, and our ageing communities will require different housing solutions to be able to age in place.

The NSW government's Riverina Murray Regional Plan estimates the region will grow by 43,300 people by 2041.

Key Stakeholders - Who will we work with?

- Member councils
- Federal and State Governments both NSW and Victorian
- Social Housing providers
- Regional NSW
- NSW Regional Housing Taskforce
- Key industry groups
- Local Members - Federal/State
- Other Joint Organisations (and Councils)
- Regional Leadership Executive (Regional NSW)
- Regional Development Australia (RDA)



State and Regional Document Links

- Premier's Priorities
- NSW Regional Housing Taskforce
- NSW Housing Strategy
- NSW Government – A 20 Year Economic Vision for Regional NSW
- NSW Government – Riverina Murray Regional Plan 2041
- Regional Economic Development Strategies – Albury Wodonga, Western Murray, Western Riverina, Murray
- Existing RAMJO council Housing strategies

Outcomes – What difference will we make to Housing in our region?

RAMJO will achieve:

- Supporting our member councils' development of their Housing strategies
- A shared Strategy and a shared Implementation and Resourcing Plan (I&R Plan) for Housing in the region
- Advocate and support development of enough housing supply to meet the housing needs of the growing workforce



Actions – What we are going to do?	Core Function	Success Measures – How will we know we have succeeded?	
		Indicator - what will we measure?	Tool - how will we measure it?
1. Establish a sub-committee to lead collaboration, planning and action on Housing in the RAMJO region.	Strategic planning and priority setting	A representative committee established and functioning well.	Observational
2. Work with member councils to support every participating council developing an up to date Housing Strategy, identifying a comprehensive assessment of constraints, impacts and opportunities for improving housing.	Strategic planning and priority setting	Participating councils have an up to date Housing Strategy.	Report
3. Work with our key stakeholders to develop and implement evidenced based and prioritised Housing Strategy for our region. This should include consideration of: <ul style="list-style-type: none"> a. Key worker housing needs b. Community and social housing c. Crown Lands d. Aboriginal Land claims e. Land use planning at a state and council to support key growth areas and demand. f. Constraints to Housing supply, including Cross Border issues. 	Strategic planning and priority setting Regional leadership and advocacy	RAMJO Regional Housing Strategy	Report
4. Review work already taking place and partner with other organisations, eg RDAs, LHDs, other JOs / ROCs, Community Housing	Strategic planning and priority setting	Report completed and supports strategy development.	Annual Review
5. Advocate and seek funding opportunities based on the Regional Housing Strategy.	Strategic planning and priority setting	Advocacy / Funding applications	Annual Review



Priority Foundation: Strengthen Councils' Capacity and Capability

Context - Why is this important?

The biggest limiting factors preventing progress on all the Priority Pillars are workforce and council financial capacity and sustainability. Our eleven councils all experience difficulty recruiting skilled staff, specifically in engineering, land use planning, finance, surveying, project management and so forth. Some also experience difficulty attracting contractors to tender for works, particularly in the more isolated locations.

All our councils operate on a tight budget and many have a declining rate base while also having to manage increasing costs and expectations.

We need smarter ways of working together to address these issues, reducing duplication and maximising synergies that then unlock and redirect resources to where they are needed.

With RAMJO being an incorporated organisation, there is an opportunity to optimise the benefits that can be gained through scale and capacity and redesign how services are delivered. For example, RAMJO could:

- provide a collective tendering service
- provide a business unit with brokerage services (such as internal auditing, planning and building services, back of house operational roles, library services, visitor information services, regional waste management) etc.
- provide support for a region wide workforce strategy

RAMJO could also facilitate the establishment of decentralised centres of expertise and the sharing of resources and skills. It could also facilitate improved planning and community engagement.

Opportunities for building capacity should be explored both within and outside the region particularly with metropolitan councils.

The focus of RAMJO will be to strengthen the capacity of RAMJO member Councils to act individually and collectively for the benefit of the region.

Key Stakeholders - Who will we work with?

- Member Councils
- Federal and State Governments both NSW and Victorian
- Office of Local Government (OLG)
- Registered Training Authorities (RTOs) including Universities and TAFE
- RDA Riverina and Murray
- Other Joint Organisations

State and Regional Document Links

- NSW Joint Organisation Guidelines

Outcomes – What difference will we make to strengthen our capacity to act?

RAMJO will achieve:

- Council workforce gaps addressed
- Advocacy for member council financial sustainability
- Improvements in project delivery
- Improved staff skills and retention



Actions – What we are going to do?	Core Function	Success Measures – how will we know we have succeeded?	
		Indicator - What will we measure?	Tool - How will we measure it?
1. Continue to work with member councils regarding Shared Services, especially in areas of skills shortages. Engineering, planning, surveying, certification etc a. Engineering, planning, surveying, building certification etc b. HR, financial management, payroll	Enhancing the capacity of Member Councils	Services identified, and benefits gained from implementation.	Member council satisfaction and cost saving report to RAMJO board.
2. Investigate a collective tendering / procurement process, using other JO experience and the BPAP project.	Service delivery to member councils	Increase in tendering, contractor engagement particularly for projects in more isolated locations.	Member council satisfaction report to RAMJO board.
3. Facilitate resources, systems and skills sharing across the Member Councils particularly to support delivery of the priority pillars, including potential for decentralised provision of services at more remote councils.	Sharing resources	Systemisation and standardisation of processes, cost savings and increase in skill development	Member council report to RAMJO board. Case studies
4. Advocacy function - financial sustainability of councils	Strategic planning and priority setting	Submissions made	Report to RAMJO Board
5. Investigate/activate expansion of Council membership base / associate members / key business partners (including associate memberships / non council entities / cross border)	Regional leadership and advocacy	Number of new members/ partners Additional member fees/ partnership projects/ growth in financial capacity	Report to RAMJO Board

Review and Reporting

The RAMJO Statement of Strategic Regional Priorities will be reviewed annually to ensure it continues to reflect the RAMJO direction, as well as progress on its priorities and strategies. A complete review will be carried out at the end of the four-year cycle.

Reporting on progress will include the following:

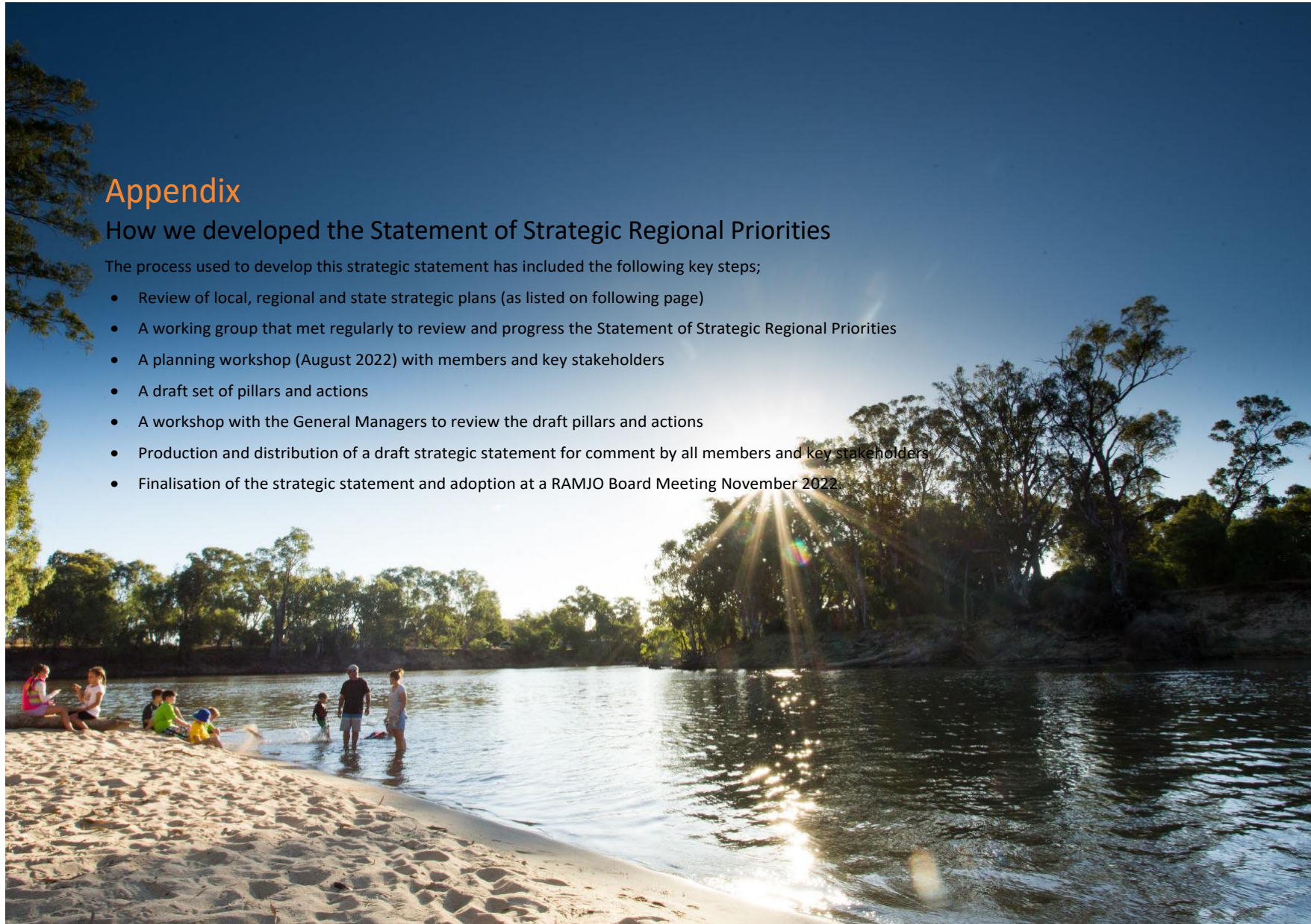
To Whom	Document / Format	Method	Timeframe
Member Councils	Progress Reports	Email	As required
	Annual Reports	Email	30 November (annually)
Regional NSW	Progress Reports	Email	As required
	Annual Report	Email	30 November (annually)
Office of Local Government	Progress Report	Email	As required
	Annual Report	Email	30 November (annually)
RAMJO Communities	Project Progress Updates	RAMJO and Council: website / Social Media / Media / Council newsletters	As projects reach notable milestones
	Annual Report	RAMJO and Council: website / Social Media / Media / Council newsletters	Annually
Key Stakeholders	Progress Report	Email	As required
	Annual Report	Email	30 November (annually)

Appendix

How we developed the Statement of Strategic Regional Priorities

The process used to develop this strategic statement has included the following key steps;

- Review of local, regional and state strategic plans (as listed on following page)
- A working group that met regularly to review and progress the Statement of Strategic Regional Priorities
- A planning workshop (August 2022) with members and key stakeholders
- A draft set of pillars and actions
- A workshop with the General Managers to review the draft pillars and actions
- Production and distribution of a draft strategic statement for comment by all members and key stakeholders
- Finalisation of the strategic statement and adoption at a RAMJO Board Meeting November 2022



Documents Reviewed

Table 1: Documents Reviewed

Author	Title	Source / Web Address
Local Plans		
11 RAMJO Councils	Community Strategic Plans; Economic Development Strategies / Plans and Housing Strategies?	11 x Council websites
Albury City Council and Wodonga City Council	"Two Cities One Community Strategic Plan 2017-2021" "2021-2022 Operational Action Plan"	http://alburywodonga.gov.au/plan
	"Albury Local Housing Strategy –Evidence Paper" February 2022	Albury Local Housing Strategy (amazonaws.com)
Berrigan Shire	"Housing & Homelessness Briefing to council October 2021 "	https://www.berriganshire.nsw.gov.au/files/council/october/2021/Appendix%207.12-B%20-%20Housing%20Paper%20Briefing%20-%202020.10.2021.docx.pdf
Regional Plans		
Regional NSW	"Riverina Murray"	https://www.nsw.gov.au/regional-nsw/our-regions/riverina-murray
NSW Department of Planning and Environment	Riverina Murray Regional Plan 2041	https://www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray/Riverina-Murray-regional-plan
Regional NSW	Regional NSW Investment Attraction Strategy 2022-2027	https://www.nsw.gov.au/regional-nsw/invest-regional-nsw
Murray Regional Tourism	"Murray Region Tourism Destination Management Plan"	www.murrayregionaltourism.com.au/research-resources/strategies-plans
Destination Riverina Murray NSW	"Riverina Murray Destination Management Plan 2018"	https://riverinamurray.com.au/wp-content/uploads/2022/05/Riverina_Murray_DMP_April_2018_DigitalLQ.2.pdf
NSW Department of Planning and Environment	"Draft Riverina Murray Regional Plan 2041" (2022)	www.planning.nsw.gov.au/Plans-for-your-area/Regional-Plans/Riverina-Murray
NSW Government	Regional Housing Taskforce Recommendations Report (October 2021)	Regional Housing Taskforce Planning Portal - Department of Planning and Environment (nsw.gov.au)

Regional NSW	Regional Economic Development Strategies 2018-2022 (REDS), refresh process and workshops: - Albury Wodonga - Murray - Western-Murray - Western Riverina	www.nsw.gov.au/regional-nsw/regional-economic-development-strategies
Regional Development Australia	Murray (2022) "Regional Plan 2022 – 2026" Riverina – "Riverina Plan and Strategic Priorities"	www.rdamurray.org.au www.rdariverina.org.au
NSW Government	Regional Housing Taskforce	https://www.planningportal.nsw.gov.au/regional-housing

Documents reviewed

Table 1: Documents Reviewed ... continued

Author	Title	Source / web address
State Plans		
NSW Government	NSW Premier's Priorities	https://www.nsw.gov.au/improving-nsw/premiers-priorities
NSW Government	"A 20-Year Economic Vision for Regional NSW" (February 2021)	https://www.nsw.gov.au/sites/default/files/2021-02/20%20Year%20Vision%20for%20RNSW_0.pdf#:~:text=20-Year%20Economic%20Vision%20for%20Regional%20NSW%20Our%20vision,further%20specialise%20in%20innovation%20and%20technology%20focussed%20industries.
NSW Government Department of industry	NSW Connectivity Strategy	https://www.digital.nsw.gov.au/policy/nsw-connectivity-strategy
NSW Government	"Health outcomes and access to health and hospital services in rural, regional and remote New South Wales" (May 2022)	https://www.parliament.nsw.gov.au/lcdocs/inquiries/2615/Report%20no%2057%20-%20PC%202%20-%20Health%20outcomes%20and%20access%20to%20services.pdf
NSW Government	NSW Water Strategy (August 2021)	https://water.nsw.gov.au/_data/assets/pdf_file/0007/409957/nsw-water-strategy.pdf
NSW Government	NSW Energy Strategy	Electricity Strategy Overview (nsw.gov.au)
NSW Government	NSW Net Zero Plan Stage 1 : 2020-2030	https://www.energy.nsw.gov.au/sites/default/files/2022-08/net-zero-plan-2020-2030-200057.pdf
Federal		
Department of Infrastructure, Transport, Regional Development, Communications and the Arts	2021 Regional Telecommunications Review - A step change in demand	2021 Regional Telecommunications Review - A step change in demand Department of Infrastructure, Transport, Regional Development, Communications and the Arts

Population Data

Table 2: LGA by Population Time Series: 2001 - 2021

Estimated Resident Population	2001	2006	2011	2016	2017	2021	Data Notes
Albury	45,265	47,655	49,451	52,171	52,949	56,036	There has been an increase in the estimated resident population of the RAMJO region of 11,478 people between 2001 – 2021.
Berrigan	8,075	8,160	8,297	8,609	8,664	8,612	
Carrathool	3,290	2,863	2,671	2,793	2,796	2,871	
Edward River	10,074	9,287	8,888	8,991	8,949	8,437	
Federation	12,121	12,479	12,509	12,445	12,444	12,821	Whilst Albury, Berrigan, Federation, Griffith and Murray River LGA's have experienced a steady increase in population others have experienced fluctuations over the 16-year period.
Griffith	24,412	24,583	25,395	26,356	26,586	27,182	
Hay	3,620	3,394	3,085	2,984	2,979	2,883	
Leeton	11,832	11,502	11,406	11,407	11,417	11,481	However, since 2011 these communities have shown signs of recovery, particularly Carrathool, and Leeton.
Murray River	10,997	11,082	11,257	11,872	11,956	12,780	
Murrumbidgee	4,548	4,109	3,888	3,929	3,952	3,564	It is noted that many agricultural workers in the region are itinerant and aren't generally captured by the Census.
Narrandera	6,686	6,103	6,115	5,949	5,931	5,731	
Total RAMJO ERP	140,920	141,217	142,962	147,506	148,623	152,398	

Source: ABS Stats <http://stat.data.abs.gov.au/>

Population Data

Table 3: LGA Population by Age 2017 and 2021

Estimated Resident Population by LGA by Age	2017					2021				
	0-14	15-44	45-64	65+	Total	0-14	15-44	45-64	65+	Total
Albury	10,289	20,451	9,931	12,318	52,989	10,712	20,966	10,029	13,962	55,669
Berrigan	1,475	2,503	2,229	2,460	8,667	1,408	2,464	2,217	2,680	8,769
Carrathool	572	1,046	779	401	2,798	596	964	760	450	2,770
Edward River	1,614	2,902	2,458	1,981	8,955	1,598	2,916	2,365	2,194	9,073
Federation	2,165	3,430	3,442	3,413	12,450	2,076	3,402	3,342	3,775	12,595
Griffith	5,614	10,388	6,398	4,208	26,608	5,485	10,562	6,415	4,602	27,064
Hay	551	927	895	608	2,981	508	919	821	613	2,861
Leeton	2,414	4,122	3,449	1,439	11,424	2,325	4,002	3,427	1,548	11,302
Murray River	2,143	3,479	3,261	3,080	11,963	2,230	3,399	3,293	3,503	12,425
Murrumbidgee	828	1,366	1,081	680	3,955	738	1,337	1,052	769	3,896
Narrandera	1,218	1,827	1,618	1,272	5,935	1,203	1,734	1,554	1,297	5,788
TOTAL	28,777	52,432	37,992	29,422	148,725	28,014	52,551	38,567	33,186	152,212

Source: ABS Stats 2021 Census <http://stat.data.abs.gov.au/>

Predicted Population Change 2021-2041

Data Limitations

At the time of writing, the only official available projection data for the 11 local government areas of RAMJO was that from the NSW Department of Planning and Environment (DPE). This data is based on the 2020 ABS base data. Updated data (based on the 2021 Census) is due for release in late 2022 / early 2023.

The DPE data has been included as a guide, however caution should be applied when referring to this data because it under estimates the growth that has been experienced as at 2021 by 186 people.

There are some notable differences between the DPE 2021 predicted population and the actual 2021 ABS Census data. A comparison of the two data sets is shown in table 4.

Table 4: 2021 estimated resident Population compared with Projected Population for 2021 by LGA

Local Government Area	ABS Estimate Resident Population 2021	Dept P&E Projected Population 2021	Difference	Data Notes
Albury City	56,036	55,670	-366	Comparing the ABS estimated Resident Population (2021) with the Projected Population for 2021 shows many discrepancies between the two data sets. In many cases, it demonstrates an under-estimation of population growth in the LGAs, the exceptions being of Federation, Leeton. The estimate for Narrandera and Hay were almost exact. Overall, the RAMJO population was underestimated by 186 people.
Berrigan	8,612	8,768	156	
Carrathool	2,871	2,771	-100	
Edward River	8,437	9,073	636	
Federation	12,821	12,594	-227	
Griffith City	27,182	27,063	-119	
Hay	2,883	2,862	-21	
Leeton	11,481	11,302	-179	
Murray River	12,780	12,426	-354	
Murrumbidgee	3,564	3,895	331	
Narrandera	5,731	5,789	58	
TOTAL	152,398	152,212	-186	

Table 5: Predicted Population Change 2016 - 2036 by LGA

Local Government Area	Total Population		% Under 15 years		% Over 65 years	
	2016	2036	2016	2036	2016	2036
Albury City	55,670	76,341	19.24%	16.62%	17.41%	23.97%
Berrigan	8,768	9,897	16.05%	14.66%	28.47%	33.37%
Carrathool	2,771	2,698	21.52%	23.39%	23.33%	21.85%
Edward River	9,073	9,012	17.62%	14.26%	25.19%	30.95%
Federation	12,594	13,299	16.48%	14.02%	31.55%	38.25%
Griffith City	27,063	31,641	20.27%	18.73%	14.91%	21.10%
Hay	2,862	2,594	17.76%	16.69%	26.79%	28.24%
Leeton	11,302	11,061	20.57%	18.64%	19.42%	26.90%
Murray River	12,426	15,456	17.95%	16.37%	26.50%	34.32%
Murrumbidgee	3,895	3,998	18.94%	16.15%	21.48%	26.87%
Narrandera	5,789	5,373	20.79%	19.70%	20.00%	24.63%
TOTAL	152,212	181,371	19.24%	16.62%	17.41%	23.97%

Source: NSW Department Planning and Environment 2022 (2016 Census) <https://www.planning.nsw.gov.au/Research-and-Demography/Population-Projections/Explore-the-data>

Table 6: Predicted Population Structure Change 2016 -2041

RAMJO	2016		2021		2026		2031		2036		2041	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
0-14 years	28,631	19.41	28,880	18.97	28,641	18.12	28,775	17.34	29,554	17.00	30,573	16.86
15-44 years	52,357	35.49	52,665	34.6	55,505	35.12	58,776	35.41	60,926	35.05	62,768	34.61
45-64 years	37,860	25.67	38,126	25.0	36,379	23.02	36,609	22.06	37,967	21.84	39,877	21.99
65+ years	28,658	19.43	32,541	21.4	37,534	23.72	41,814	25.19	45,370	26.10	48,153	26.55
TOTAL	147,506	100.00	152,212	100.00	158,059	100.00	165,974	100.00	173,817	100.00	181,371	100.00

Source: NSW Department Planning and Environment 2022 (2016 Census) <https://www.planning.nsw.gov.au/Research-and-Demography/Population-Projections/Explore-the-data>

Employment by Industry

Table 7: Industry by Employment Time Series 2006 - 2021

RAMJO - Industry by Employment	2006	2011	2016	2021
Health Care and Social Assistance	5,765	6,868	7,555	9,584
Agriculture, Forestry and Fishing	8,606	7,151	7,239	9,328
Manufacturing	8,461	8,111	7,079	8,934
Retail Trade	7,416	7,184	6,458	7,197
Education and Training	4,265	4,697	5,107	5,558
Construction	4,282	4,387	4,938	7,028
Accommodation and Food Services	4,387	4,494	4,636	5,787
Public Administration and Safety	3,401	3,748	3,619	4,636
Transport, Postal and Warehousing	2,540	2,579	2,672	2,933
Inadequately Described/Not stated	1,579	1,534	2,573	-
Other Services	2,107	2,258	2,361	2,954
Professional, Scientific and Technical Services	2,175	2,163	2,177	2,496
Administrative and Support Services	1,290	1,405	1,732	1,745
Wholesale Trade	2,281	1,990	1,472	1,718
Financial and Insurance Services	1,122	1,083	957	1,111
Electricity, Gas, Water and Waste Services	809	876	807	1,282
Rental, Hiring and Real Estate Services	660	609	601	673
Arts and Recreation Services	486	543	531	547
Information Media and telecommunications	591	491	454	505
Mining	81	151	175	273
TOTAL	62,304	62,322	63,143	74,289

2021 Source: <https://economy.id.com.au/ramjo/employment-by-industry>

Gross Regional Product

Data Limitations

Gross Regional Product data was not available at local government level from one source. It has therefore been collated from REMPLAN, Profile ID, LGA Community Strategic Plans and LGA Economic Strategies. All data used is 2021. The totals are therefore considered an estimate and should be viewed as indicative rather than absolute figures.

Table 8: Estimated Gross Regional Product 2021

Gross Regional Product	2021 \$ Millions	Data Source
Albury	3,343	https://economy.id.com.au
Griffith City	1,872	https://economy.id.com.au/ramjo/gross-product?WebID=150
Murray River	672	https://economy.id.com.au
Edward River	523	https://economy.id.com.au/ramjo/gross-product?WebID=130
Federation	708	https://economy.id.com.au/ramjo/gross-product?WebID=140
Leeton	588	https://economy.id.com.au/ramjo/gross-product?WebID=170
Berrigan	546	https://economy.id.com.au/ramjo/gross-product?WebID=110
Murrumbidgee	309	https://economy.id.com.au/ramjo/gross-product?WebID=190
Narrandera	371	https://economy.id.com.au
Carrathool	347	https://economy.id.com.au
Hay	189	https://economy.id.com.au/ramjo/gross-product?WebID=160
TOTAL	\$9.47 billion	

Snapshot Data for Strategic Priorities Pillars Unpacked

Table 9: Strategic Pillar Snapshot Data Unpacked

Water	Energy	Transport
<p>3 Major Rivers</p> <ul style="list-style-type: none"> • Murray • Murrumbidgee • Lachlan <p>6 Major Water Storage Servicing</p> <ul style="list-style-type: none"> • Dartmouth • Hume • Yarrawonga/Mulwala • Burrinjuck • Blowering • Wyangala <p>11 Waste Water Treatment Facilities</p> <ul style="list-style-type: none"> • 1 per LGA <p>3 Major Irrigation Systems</p> <ul style="list-style-type: none"> • Murrumbidgee Irrigation System • Coleambally Irrigation System • Murray Irrigation 	<p>3 Solar Farms</p> <ul style="list-style-type: none"> • Griffith x 2 • Carrathool x 1 • Various under construction and/or scheduled for construction <p>Hydro</p> <ul style="list-style-type: none"> • Hume <p>Energy</p> <ul style="list-style-type: none"> • Essential Energy (almost all RAMJO) • SP Ausnet (NSW/Vic Border) <p>35.97% dwellings with solar power</p> <ul style="list-style-type: none"> • Australian PV Institute (ABS PV data) • https://pv-map.apvi.org.au/historical#8/-36.157/146.446 	<p>9 Major Highways</p> <ul style="list-style-type: none"> • Hume • Riverina • Sturt • Cobb • Kidman Way • Olympic • Mid-Western • Newell • Burley Griffin Way <p>Railway Lines</p> <ul style="list-style-type: none"> • 1 x major line – Melbourne - Albury - Sydney • 5 x branch lines • https://en.wikipedia.org/wiki/Rail_transport_in_New_South_Wales#/media/File:NSWRailMap.png <p>Airports</p> <ul style="list-style-type: none"> • Albury • Griffith • Narrandera • Corowa • Hay • Deniliquin <p>Source: Regional Economic Development Strategies</p> <p>Intermodal Terminals</p> <ul style="list-style-type: none"> • Albury • Griffith • Tocumwal • Deniliquin • WR Connect – on boundary Griffith & Leeton • https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/intermodal%20terminals%20by%20local%20government%20area.pdf

Table 9: Strategic Pillar Snapshot Data Unpacked continued...

Digital	Health	Industry
<p>Progressive NBN Coverage</p> <ul style="list-style-type: none"> NBN Coverage as at Oct 2018 – map https://www.nbnco.com.au/residential/learn/rollout-map.html As at June 2018, the NBN was available at 87,588 premises in Farrer, of which 46.5% had been taken up. note: this overall figure includes LGA's of greater Hume, Balranald and Wentworth which are outside RAMJO. to break this down to LGA level – contact NBN. <p>Black Spots</p> <ul style="list-style-type: none"> Community Reported Black Spots – Australian government national map. https://nationalmap.gov.au/#share=s-qmYEiDx3gp6CmV9gfGZRxx4aqmV Round 1 - 5 Funded Base Stations - Australian government national map https://nationalmap.gov.au/#share=s-qmYEiDx3gp6CmV9gfGZRxx4aqmV <p>Mobile Phone Towers</p> <ul style="list-style-type: none"> Tower Search: https://www.rfnsa.com.au/?first=1 <p>Coverage Checker</p> <ul style="list-style-type: none"> https://www.telstra.com.au/coverage-networks/our-coverage https://www.optus.com.au/living-network https://www.vodafone.com.au/network/coverage-checker 	<p>Major Hospitals x2</p> <ul style="list-style-type: none"> Albury Wodonga Health Griffith Base <p>Health Services x7</p> <ul style="list-style-type: none"> Berrigan Corowa Deniliquin Finley Hay Leeton Narrandera <p>Multi-Purpose Services x 5</p> <ul style="list-style-type: none"> Hillston Jerilderie Lockhart Tocumwal Urana <p>https://www.mhhd.health.nsw.gov.au/our-facilities</p> <p>Residential Aged Care Places</p> <ul style="list-style-type: none"> PHIDU (June 2020) "Social Atlases of Australia: local government Areas – NSW / ACT" http://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlases-of-australia-local-government-areas 	<p>Employment by Industry</p> <ul style="list-style-type: none"> ABS 2016 Census – LGA Community Profiles – Time Series Profile table 34 industry by employment by Sex (collated LGAs) https://economy.id.com.au/ramjo/employment-by-industry <p>Gross Regional Product</p> <ul style="list-style-type: none"> REMPLAN – Albury, Carrathool, Murray River, Narrandera ID.Profile – Berrigan, Federation, Griffith, Murray Economic Development Strategic Plan – Edward River Community Strategic Plan - Leeton <p>Jobs, Unemployment, Median Weekly Household Income</p> <ul style="list-style-type: none"> https://economy.id.com.au/ramjo/income (2021 granular census data not yet available) <p>Higher Education</p> <ul style="list-style-type: none"> UNSW Medical School – Albury UNSW – Rural Clinical School – Griffith Campus Charles Sturt University - Albury TAFE x 6 – Albury, Griffith, Leeton, Narrandera, Deniliquin, Corowa Western Riverina Community College Deakin Uni – Centre for Regional and Rural Futures and Irrigation Research Centre Yanco Agricultural Institute – between Leeton and Narrandera <p>Source: Economic Development Strategies 2018- 2022 (x4)</p>

Housing

- Persons living in owned dwellings– 62.2% of population
<https://profile.id.com.au/ramjo/tenure?BMID=40>
- Low income households -48.46% of private dwellings
Housing Experiences and Suitability Atlas (2016 data)
<https://phidu.torrens.edu.au/social-health-atlases/topic-atlas/housing-atlas#housing-atlas-data-workbooks>
- Income stress “ : In Riverina and Murray Region, 9.5% of households with a mortgage were making high loan repayments of \$2,600 or more per month in 2021.”
[Housing loan repayments | Riverina and Murray Joint Organisation | Community profile \(id.com.au\)](#)



Acknowledgements

The Members of the RAMJO board would like to acknowledge and thank all those who have contributed to and assisted with the development of the Strategic Statement of Regional Priorities:

- Council Mayors – Matthew Hannan, Kylie King, Darryl Jardine, Peta Betts, Patrick Bourke, Doug Curran, Carol Oataway, Tony Reneker, Chris Bilkey, Ruth McRae, Neville Kschenka
- General Managers – Frank Zaknich, Karina Ewer, Rick Warren, Phil Stone, Adrian Butler, Brett Stonestreet, David Webb, Jackie Kruger, Terry Dodds, John Scarce, George Cowan
- Giles Butler, Director Riverina and Murray, Department of Regional NSW
- Cameron Templeton, Council Engagement Manager, Office of Local Government
- Edwina Hayes, Chief Executive, Regional Development Australia – Murray
- Rachel Whiting, Chief Executive, Regional Development Australia – Riverina
- Jane Barnes, Department of Regional NSW

Working Group members:

- Kylie King, Mayor, Albury City
- Brett Stonestreet, General Manager, Griffith City Council
- George Cowan, General Manager, Narrandera
- Giles Butler, Director Riverina and Murray, Department of Regional NSW
- Nicola Gleeson, Executive Officer RAMJO

Thank you also to Deanne Drage, author of the 2018 SSRP.



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ALBURY CITY | BERRIGAN SHIRE | CARRATHOOL SHIRE | EDWARD RIVER | FEDERATION | GRIFFITH CITY | HAY SHIRE | LEETON SHIRE | MURRAY RIVER | MURRUMBIDGEE | NARRANDERA SHIRE

Murray Darling Association Inc.

VISION 2025

Strategic Plan 2020-25



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FOREWORD

We are pleased to introduce to you the Murray Darling Association's five-year Strategic Plan: **Vision 2025**.

This Strategic Plan sets out our five-year goals and describes the strategies we will implement to achieve them. We commit to providing a regular report card to our members to provide updates on our performance in delivering these strategies, and our progress in achieving our goals.

Our Strategic Plan builds on the foundations established by the 2016-19 Strategic Plan, and confirms our place as the Basin's primary driver in local leadership and policy development.

The strategies we commit to delivering in this Plan address the unique and diverse regional interests of local government and communities across the Basin. The Plan addresses our members' top three priorities:

- ▶ **Murray Darling Basin Local Government & Community Centre of Excellence:** providing a space for local government and stakeholders across the Basin to collaborate and innovate.
- ▶ **Project development** – developing and delivering projects and initiatives that deliver value for Basin communities.
- ▶ **Tools for regions** – ensuring our members have the products and tools they need to lead with strength and authority.

This Strategic Plan sets our continuing course for the delivery of efficient and sustainable services and programs which support our members across the Murray-Darling Basin, providing value for our members, government and our partners.

Please join us on this journey in leading the way to achieving a healthy, vibrant and thriving Murray-Darling Basin.



David Thurley
National President



Emma Bradbury
Chief Executive Officer



LOCAL LEADERSHIP: A NATIONAL PRIORITY

The world is looking to the communities of the Murray-Darling Basin to lead the way in water management, agriculture, energy efficiency and innovation.

We are tireless in seeking the right balance between valuing, sharing and protecting our incredible natural assets, our infrastructure and our local economies.

Severe drought and bushfires, evolving water markets, climate change, emerging developments in energy, agriculture, water infrastructure and now COVID-19 all form the backdrop to these extraordinary times.

Now, more than ever before, local government has a critical role to play in the management of Basin resources if we are to ensure the sustainability, vibrancy and prosperity of our local communities for future generations.

With bold thinking and ambitious planning, we can transform some of the great challenges of our time into the opportunities of tomorrow.

Basin governments already have some extraordinary plans on the national agenda for 2020 and for a generation beyond.

- ▶ The **Murray-Darling Basin Plan** seeks to utilise, honour and protect one of the biggest and most diverse river systems in the world.
- ▶ The **National Water Infrastructure Development Fund** will identify and build the water infrastructure of the 21st century.
- ▶ The **2030 Agriculture Plan** will grow farm gate output to more than \$100 billion in the next decade.
- ▶ The **National Energy Plan**, including **Snowy 2.0**, will deliver a 40 pc boost in the production of cleaner, more reliable energy to power Australia.

- ▶ And our **National Climate Resilience and Adaptation Strategy** will enable our people, environment and economy to survive and thrive through climate extremes.

The success of these courageous initiatives, and the communities which rely on them, depends on these plans working together, operating in harmony and without conflict. And that will require that we, too, work hard and work together.

It's about local councils and communities working together with first nations, with governments and agencies across the Basin, showing leadership and localism to benefit the entire Murray-Darling Basin.

It's about local government providing effective leadership and representation at state and federal levels in the management of Basin resources.

You can help shape this vital dialogue.

Our members know the strengths. We know the opportunities. We know our local communities.

Our knowledge will shape our future. This is where leadership begins. There is only one way to secure the Murray-Darling Basin's place as a world leader in sustainability and prosperity – and that is to make *local leadership a national priority*.

OUR PURPOSE, VISION, MISSION AND VALUES

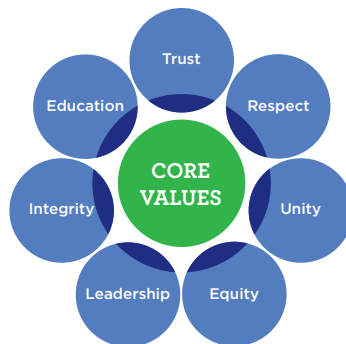
The Murray Darling Association is the peak body for local government in the Murray-Darling Basin. It has been informing policy and contributing local knowledge and regional solutions since 1944.

There are 167 councils over four states that sit within the Murray-Darling Basin and whose communities rely on water from within it.

The management of water and other Basin resources is a matter of significant interest to local government. Councils need certainty and reliability to support the communities they lead and serve.

The allocation, sustainability, availability and affordability of water resources is recognised as a critical factor in the environmental, social, cultural, and economic health and stability of our nation, as a whole.

This is particularly important across the rural and regional communities of the Murray Darling Basin.



OUR PURPOSE

Our purpose is to provide effective representation of local government and communities at state and federal level in the management of Basin resources by providing information, facilitating discussion and seeking to inform government policy.

OUR VISION

Our vision is for local government and communities to work together to achieve a healthy, vibrant and thriving Murray-Darling Basin.

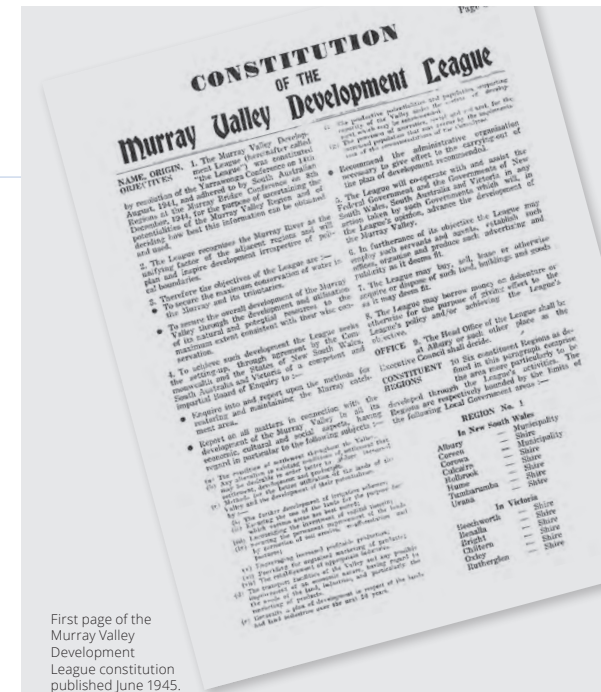
OUR MISSION

Our mission is to provide high value services to our local government members, and deliver quality projects and products, all of which provide enduring value to Basin communities and governments.

OUR VALUES

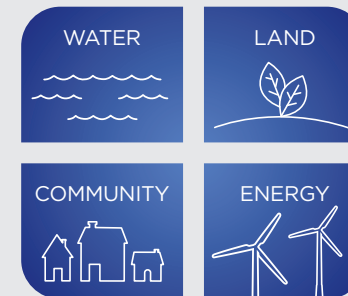
We value honesty, integrity and collaborative communication, based on mutual respect for our members, our environment and the communities we serve.

We also value evidence-based and informed decision-making and intelligent inquiry, in all that we do.



First page of the Murray Valley Development League constitution published June 1945.

BASIN RESOURCES





THE MDA STRUCTURE

Murray Darling Association is governed by a Board which meets monthly, and is comprised of the Chairs of our 12 regions.

Our regions meet four times per year, providing a platform for members to identify local and regional challenges and opportunities, and to develop content to inform better state and national policy.

We work with and for member councils, engaging with national and state-based local government associations, regional organisations of councils, community members and leaders, governments and agencies to understand local issue and identify regional solutions.

The MDA is parliamentary in nature, having the executive power vested in a board composed of members of the regions, individually and collectively responsible to the membership, and each of whom is democratically elected.

Our Board

●	Cr David Thurley	Albury City Council	Chair Region 1 - President
●	Cr Dennis Patterson	Shepparton City Council	Chair Region 2
●	Cr Jane MacAllister	Wentworth Shire Council	Chair Region 4
●	Cr Peter Raison	Mid Murray Council	Chair Region 5
●	Cr Melissa Rebeck	Alexandrina Shire Council	Chair Region 6
●	Cr Andrew Tilley	City of Mitcham	Chair Region 7
●	Cr Brian Lockyer	Burunga West Council	Chair Region 8
●	Cr Paul Maytom	Leeton Shire Council	Chair Region 9
●	Mayor Phyllis Miller	Forbes Shire Council	Chair Region 10
●	Cr John Campbell	Gunnedah Shire Council	Chair Region 11
●	Mayor Samantha O'Toole	Balonne Shire Council	Chair Region 12
	Pete George	M&S Group	Treasurer
	Emma Bradbury	Murray Darling Association	Chief Executive and Public Officer



Cr David Thurley



Cr Dennis Patterson



Cr Jane MacAllister



Cr Peter Raison



Cr Melissa Rebeck



Cr Andrew Tilley



Cr Brian Lockyer



Cr Paul Maytom



Mayor Phyllis Miller



Cr John Campbell



Mayor Samantha O'Toole



Pete George



Emma Bradbury

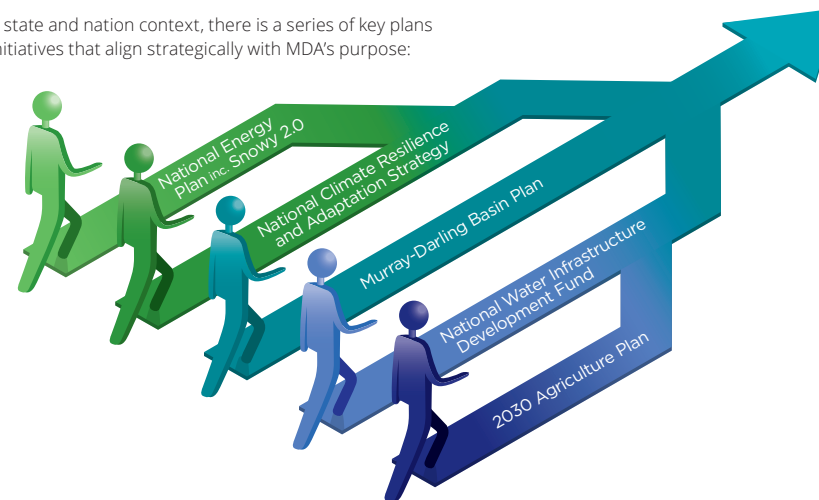
OUR STRATEGIC PLAN IN CONTEXT

This Strategic Plan exists to drive the delivery of services to our MDA members, and it sits within a broader planning context:

- ▶ At a local level, our member councils (through strategic community and land-use planning) champion the priorities and programs that resonate with those communities.
- ▶ Regionally, Joint Organisations and other regional local government organisations have identified their key environmental, economic and social focus through statements of strategic regional priorities.



In the state and nation context, there is a series of key plans and initiatives that align strategically with MDA's purpose:



This Strategic Plan seeks to distil and synthesise the priorities and drivers from that broad planning context into a strategic direction that guides and supports the MDA over the next five years. It will also serve to articulate our purpose and priorities for our members, our partners and other stakeholders across the Murray Darling Basin.

A key focus of this Strategic Plan will be to ensure local government's contribution to regional, state and federal planning to ensure better alignment of our national priorities. Our communities are at the forefront of change. In order for our communities to thrive in the face of this change we must

ensure the Murray-Darling Basin Plan, the 2030 Agriculture Plan, our National Water Infrastructure Investment Strategy and our national energy plans are operating consistently, and are not conflicting at the expense of our Basin communities.

Our annual operational planning and resource allocations will cascade from this plan, always ensuring that our projects, programs and activities work collectively to achieve the strategic objectives identified in this Plan.



OUR PARTNERSHIPS

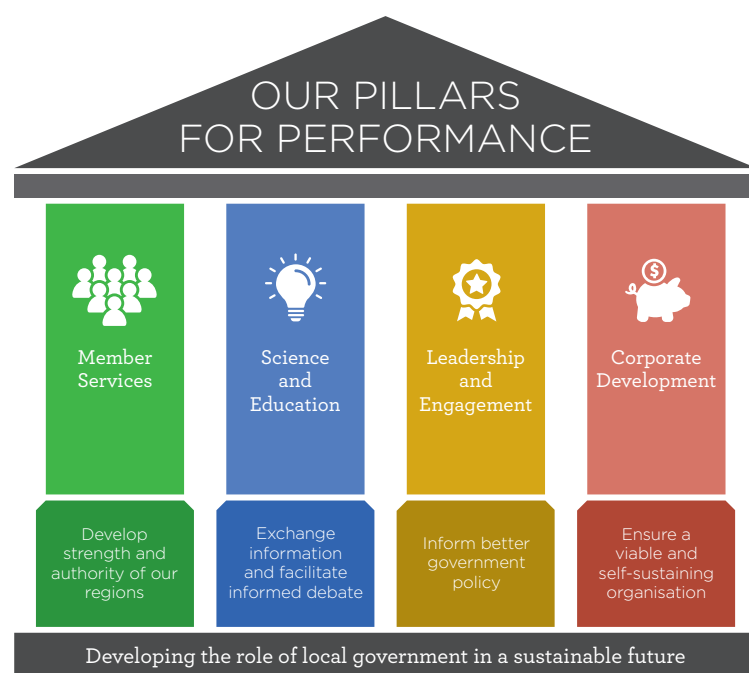
The MDA is uniquely positioned to act as a conduit between local communities and Murray-Darling Basin governments, to promote the responsible management of Murray-Darling Basin resources. We recognise that we have more things in common with our partners than divide us.

We value the partnerships we have established across the Basin that are essential to the effective performance of our organisation and the achievement of our goals:

OUR PARTNERS	OUR INTENT
▶ Basin LGAs including regional and state local government organisations	Collaborate effectively and respectfully to maximise efficiencies for local government and their peak agencies by avoiding duplication and providing multi-jurisdictional perspectives.
▶ Basin Governments ▶ Murray Darling Basin Authority ▶ National Water Grid Authority ▶ Climate Change Authority ▶ Australian Energy Market Authority ▶ Commonwealth Environmental Water Office	Fairly and frankly represent the interests and priorities of local government at the Basin scale on positions of common interest. Collaborate and exchange information and advice to improve knowledge and awareness of Basin issues, and of the impacts of policy and decisions to create better outcomes for local government and communities.
▶ State and national peak bodies and other agencies	Consult and work with State and national peak bodies and other agencies to foster a stronger relationship to local government of sector-specific perspectives and issues.
▶ First Nations organisations	That we learn from, respect and treasure the natural resource management practices of First Nations custodians.
▶ Regional Development Australia	Work together to maximise benefits and value for all, and progress the relationship ensuring that our roles are clear and our collaboration adds value to the work we do. Through our partnership we aim to avoid unnecessary duplication.
▶ Universities	Partner with universities to enhance water literacy, and provide practical application of academic research for the benefit of local government and community.
▶ CSIRO	Establish a framework under which we will collaborate on research projects to conduct research, development and related activities to overcome the key challenges of resource management in the Murray Darling Basin and turn them to the Basin community's unique advantage.
▶ Media	Promote the interests and achievements of our Basin communities through the media.

MDA Australia's peak body for local government across the Murray-Darling Basin 7

OUR PILLARS FOR PERFORMANCE



PILLAR 1: MEMBER SERVICES

The MDA is committed to providing high-value, high-quality services to members. Our services, products and programs seek to provide enduring value to Basin communities and governments. The strategic objectives relate to:

- ▶ Providing value to our members
- ▶ Delivering quality products, programs and services.



PILLAR 2: SCIENCE AND EDUCATION

The MDA is committed to contributing to the evidence that supports a healthy, vibrant and thriving Basin. By enabling and providing opportunities for our members and others to learn and share knowledge, we contribute to longer-term positive impacts for our Basin communities. The strategic objectives relate to:

- ▶ Making a trusted contribution
- ▶ Developing policy and position statements built on evidence
- ▶ Sharing knowledge and enabling enduring impacts.

PILLAR 3: LEADERSHIP AND ENGAGEMENT

The MDA is ideally positioned to be the go-to organisation for governments and others in relation to Basin policy. Our strong and effective leadership on Basin matters enables us to effectively engage with internal and external stakeholders. The strategic objectives relate to:

- ▶ Being engaged in the policy process
- ▶ Building stronger regions and supporting local action
- ▶ Creating opportunities for valued collaboration
- ▶ Strong stakeholder relationships.

PILLAR 4: CORPORATE DEVELOPMENT

The MDA seeks to continue to develop its legitimate, effective and respected leadership, and ensure its leadership reflects the diversity and expertise of our communities. We are committed to ensuring our organisation is financially sustainable and corporately robust. The strategic objectives relate to:

- ▶ Good governance and financial sustainability
- ▶ Effective communications
- ▶ Being an employer of choice.

VISION 2025: OUR STRATEGIC PLAN

This Strategic Plan has been prepared under our four pillars for performance:

Pillar 1: Member Services

Pillar 2: Science and Education

Pillar 3: Leadership and Engagement

Pillar 4: Corporate Development

The Strategic Plan sets the organisation's direction for the next five years, and provides guidance to our members and stakeholders about our priorities and what we intend to deliver during this time.

To promote accountability, and enable us to track our progress and performance over time, the Plan has established targets and includes measures to enable ongoing monitoring and review.

This Plan will be supported by annual Operational Plans which will operationalise the higher order strategies in this Plan, assigning responsibilities and resources for the achievement of our objectives. This Strategic Plan provides an indication of the timing for the delivery of our strategies over the life of the Plan.

The Board will receive regular reports of our progress and performance in relation to the objectives of this Plan, and an Annual Report will be published for our members and other stakeholders to keep us accountable for our performance and to share our achievements in delivering on the priorities for the Basin.



MDA Australia's peak body in natural government sits across the Murray-Darling Basin 9

PILLAR 1: MEMBER SERVICES

GOALS & ACTIONS:



Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
1.1 MEMBER VALUE							
1.1.1	Our members value their membership of MDA and the support it provides them.	► Explore new and innovative ways to support our membership including project development (concept design, application support, budget development, letters of support, research and collaboration).	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
1.1.2	Our members have access to up-to-date information that provides value for their membership.	► Implement a relationship management platform (CRM) and a member-only portal.					
1.1.3	MDA provides products and services tailored to its members.	► Launch a detailed products and services online page (accessed via the member-only portal).					
1.1.4	Projects are successfully delivered by the MDA.	► Deliver tailored projects and initiatives which meet the current and emerging needs of the Basin.					
1.1.5	We are responsive to members’ needs and demands.	► Enhance and expand the resources, materials and products available for our members ► Design and develop content such as videos, web pages, Delegates’ Report template.					
1.2 PRODUCTS, PROGRAMS AND SERVICES							
1.2.1	The MDA provides an attractive range of free and costed services.	► Conduct member survey to prioritise service types most sought by members. ► Maintain, enhance or develop member services in response to survey outcomes.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
1.2.2	MDA templates and reports provide efficiencies for members.	► Develop products, templates and reports as current issues and processes evolve.					
1.2.3	The MDA has an accessible register of adopted policies and position statements that reflect the diverse interests and the shared objectives of Basin communities.	► Rely on legitimate stakeholder contributions and perspectives in the development of position statements. ► Create and utilise a standard format for position statements that captures research and Board resolutions, and articulates clearly the MDA's position.					
1.2.4	All Basin communities have participated in our leadership program.	► Deliver the Basin Communities Leadership Program. ► Secure further funding for subsidised placements. ► Develop a fee-for-service program.					
1.2.5	Our regional economic diversification program delivers regional plans.	► Secure funding for the continued roll-out of the regional economic diversification program. ► Provide resources and a template to support our regions to develop economic diversification plans.					

PILLAR 1: MEMBER SERVICES MEASURES & INDICATORS:



We will use the measures and indicators below to monitor and report on our progress and performance.

Ref	Measure/Indicator of progress or performance
	Number of members, and proportion compared to all councils in our membership catchment.
	Status of member-only portal.
	Proportion of members who report satisfaction with information provided via member portal.
	Proportion of our member resources that have been updated within the last three years.
	Utilisation of our free services.
	Utilisation of our costed services.
	Number of annual downloads of our templates and other reports.
	Proportion of our policies and positions statements developed with our members.
	Status of our Basin Communities Leadership Program.
	Proportion of our Regions with an adopted and current economic diversification plan in place.
	Proportion of our members who agree our projects meet current and emerging needs.
	Proportion of our members who agree we are innovative in our support for addressing current and emerging needs.



OUR MEMBERS ARE OUR PRIORITY – THEY ARE THE REASON WE ARE HERE.

Membership is voluntary and we work to ensure every Basin council and community can rely on effective representation and leadership of local issues by the MDA within a united Murray-Darling Basin.

Effective leadership and representation of local government and the communities of the Murray-Darling Basin, and the

development of good policy can only occur with strong and disciplined alignment of our values, processes and our governance framework.

Our focus is on developing policy positions and solutions to address complex issues across diverse and discrete communities that share an interest in a healthy working Basin.

The MDA is committed to sound and consistent process delivering effective policy.

We value policy over politics.

PILLAR 2: SCIENCE AND EDUCATION

GOALS & ACTIONS:



Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
2.1 TRUSTED CONTRIBUTION							
2.1.1	State and federal governments rely on MDA's policy, advice and contributions.	▶ Prepare high quality evidence-based, stakeholder- driven position statements and promote their use in decision-making forums.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
2.1.2	MDA policies contribute to Australian agriculture's plan for a viable and regenerative agricultural sector.	▶ Work with regions to identify strategies and targets for submission to national agricultural planning.					
2.1.3	MDA is an active contributor in reviews and forums relating to the Basin.	▶ Participate and contribute toward Basin committees, reviews, commissions, inquiries and other interrogative forums.					
2.1.4	MDA submissions to Murray-Darling Basin-related inquiries are considered, balanced and synthesised across the regions.	▶ Utilise the time available when drafting submissions to seek regional input and direction into the process.					
2.2 BUILT ON EVIDENCE							
2.2.1	Regional profiles and priorities are documented and well understood (see also 3.7).	▶ Support each region to develop a regional profile and priorities.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
2.2.2	Programs and initiatives delivered by MDA are built upon evidence and science.	▶ Work with universities and the academic community to apply science and deliver practical solutions to local and regional problems.					
2.2.3	Our Regions' diverse needs and experience is reflected in the development of our policies and position statements.	▶ Utilise our member and Region engagement tools to identify and prioritise our annual activities.					
2.2.4	The diverse needs and experience of our Regions is reflected in our Climate-Ready Communities Strategy.	▶ Undertake a project to capture our members' diverse views and concerns in relation to climate change, and identify agreed role for MDA.					
2.3 SHARING KNOWLEDGE							
2.3.1	The MDA's Local Government Centre for Excellence is established and well-utilised.	▶ Pursue and secure state and federal support to establish the Centre. ▶ Engage key partners (agencies, universities and other key stakeholders) to collaborate and build on existing initiatives. ▶ Bring relevant parties together to occupy the Centre.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				

PILLAR 2: SCIENCE AND EDUCATION

GOALS & ACTIONS CONTINUED:



Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
2.3.2	We will have evidence-based, researched knowledge to share with our members on issues that are important to them.	<ul style="list-style-type: none"> ▶ Continue to build our partnerships with agencies and organisations that contribute to the evidence on matters that are important to our members: <ul style="list-style-type: none"> - Climate change - Floodplain harvesting - Legislative change - ACCC/market impacts - National Agricultural Plan - National Water infrastructure investment. 					
2.3.3	MDA events educate, inform, build trust and shared understanding. Our events are well attended providing opportunities to bring our members and their communities together to develop a shared understanding of the issues that are important to all.	<ul style="list-style-type: none"> ▶ Develop and implement the Connecting Catchments & Communities education and engagement program. ▶ Host a calendar of events which focus on providing opportunities for learning about and sharing contemporary and emerging issues. ▶ Design and develop resources in collaboration with authorities and other agencies. 					
2.3.4	Water literacy and natural resource management is a recognised part of the primary and secondary school curriculum.	<ul style="list-style-type: none"> ▶ Engage with schools to encourage water literacy and natural resource management content within the curriculum. 					
2.3.5	MDA has fostered active relationships and learns from First Nations peaks and individuals.	<ul style="list-style-type: none"> ▶ Establish a First Nations Advisory Committee. ▶ Support our Regional Chairs to foster relationships with their First Nations peak body (NBAN, MLDRIN, Yorta-Yorta, Barka). 					
2.3.6	Our annual Conference programs showcase and hear from others with an interest in the Basin.	<ul style="list-style-type: none"> ▶ Sponsor identified delegation registrations for First Nations representatives. ▶ Ensure presentations or sessions from First Nations organisations are included in each annual Conference program. 					
2.3.7	Our annual bursary program encourages innovation and evidence-gathering to support policy and processes.	<ul style="list-style-type: none"> ▶ Actively seek out and attract bursary sponsors. ▶ Award bursaries annually. 					
2.4 ENDURING IMPACTS							
2.4.1	MDA's facilitation and provision of projects and initiatives has real and enduring impacts in the Basin.	<ul style="list-style-type: none"> ▶ Through planning and stakeholder engagement, identify the short- and long-term outcomes being sought, and consider social, economic and environmental issues equitably. 					
2.4.2	MDA's work in collaboration with CSIRO creates positive outcomes for the Basin.	<ul style="list-style-type: none"> ▶ Partner with CSIRO on appropriate projects and opportunities including 'Basin Outlook 2050'. 					

PILLAR 2: SCIENCE AND EDUCATION MEASURES & INDICATORS:



We will use the measures and indicators below to monitor and report on our progress and performance.

Ref	Measure/Indicator of progress or performance
	Proportion of MDA submissions made (to Government and other stakeholders' policies and plans) that were reflected in the final outcome.
	Number of Basin-related forums that MDA participates in (see also Pillar 3).
	Average number of members who provide feedback on draft submissions.
	Proportion of our members who agree our initiatives are creating long-term positive outcomes.
	Number of our Regions with a current, documented Regional Profile.
	Number of our Regions with a current adopted Statement of Priorities.
	Number of projects undertaken in partnership with the CSIRO over the last five years.
	Number of policies, position statements and submissions prepared in collaboration with tertiary institutions over the last five years.
	The number of educational events the MDA held each year.
	Proportion of participants who agreed that MDA educational events achieve a shared understanding of the issues being discussed.
	Number of activities undertaken within the school system each year.
	Number of Regions with First Nations members and guests attending meetings.
	Number of sponsored First Nations delegates to the annual conference.
	Number of First Nations presentations on the annual conference program.
	Proportion of State and national Basin-related policies adopted in the last 12 months that reflect the MDA's policy position.



MDA Australia's peak body for local government across the Murray-Darling Basin 14

PILLAR 3: LEADERSHIP AND ENGAGEMENT

GOALS & ACTIONS:



Ref	Where do we want to be by 2025?	How will we get there?	How will we get there?				
			20-21	21-22	22-23	23-24	24-25
3.1 ENGAGED IN THE POLICY PROCESS							
3.1.1	The MDA is the ‘go-to’ for government when considering Basin policy issues.	<ul style="list-style-type: none">▶ Provide support to key stakeholders in the development of positive and effective Basin policy (eg National Carp Control Plan, Productivity Commission Stakeholder Advisory Group, NSW Aquatic Sub-Committee, Murray-Darling Basin Authority Peak Bodies Group).▶ Prepare and submit high quality documents to key Basin stakeholders.▶ Participate effectively in Basin forums.▶ Initiate member-driven discussion with MPs as emerging issues arise.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
3.1.2	The management of shared resources of the Murray-Darling Basin is a joint responsibility of all Basin governments: local, State and Federal.	<ul style="list-style-type: none">▶ Continue to push for local government’s seat at the table when Basin resource management is discussed.					
3.1.3	MDA provides an effective and authoritative platform for our members to raise and address Basin issues.	<ul style="list-style-type: none">▶ Undertake a membership promotion to ensure that our members reflect the breadth and diversity of our constituency.▶ Utilise annual conference motions as the basis for our policy and position development.▶ Meet regularly with State and Federal parliamentarians to promote Basin issues identified by our members.					
3.1.4	The MDA National Conference delivers motions that inform our annual priorities and the development of position statements.	<ul style="list-style-type: none">▶ Provide issues/discussion papers and templates for members’ conference motion development.▶ Balance competing needs and perspectives by allowing time, research, content development, fact checking and distribution of information.					
3.2 STRONGER REGIONS							
3.2.1	All our Region Chairs are appropriately skilled, actively engaged, progressive and innovative, providing active leadership for their region.	<ul style="list-style-type: none">▶ Work with our member councils to ensure their delegates are confident in their roles.▶ Provide training to our Chairs to support them in their roles.▶ Facilitate effective reporting from Regional Chairs about their participation in Basin-related events and activities.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				

PILLAR 3: LEADERSHIP AND ENGAGEMENT

GOALS & ACTIONS CONTINUED:



Ref	Where do we want to be by 2025?	How will we get there?	How will we get there?				
			20-21	21-22	22-23	23-24	24-25
3.2.2	The MDA's regional boundaries reflect communities of interest and maximise efficiencies of strategic alignments (MDA/LGA/RDA/JO).	<ul style="list-style-type: none">▶ Undertake an analysis of strategic regional alliances and prepare regional boundaries update discussion paper for member consideration in response.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
3.2.3	Every region has a Region Profile and a Region Statement of Priorities (see also 2.6).	<ul style="list-style-type: none">▶ Prepare templates and work with Regional Chairs to support the development of a consistent suite of Profiles and Plans.▶ Ensure our support strikes the right balance between active information and engagement, without over-loading with content and workload.					
3.2.4	Region meetings deliver resolutions that contribute to policy and position statements.	<ul style="list-style-type: none">▶ Rely on resolved regional positions in the MDA's work.					
3.2.5	Regional diversity of local issues, knowledge and expertise is reflected in policy positions.	<ul style="list-style-type: none">▶ Utilise regional forums to collate member feedback into policy development.					
3.2.6	Our regions prepare quality motions for the National Conference, informed by the issues and positions of their member councils.	<ul style="list-style-type: none">▶ Prepare templates to support conference motion drafting.▶ Meet regularly with each Region▶ Attend each Region's Annual General Meeting.					
3.3 LOCAL ACTION							
3.3.1	MDA briefings and reports are standing agenda items for tabling at Council meetings.	<ul style="list-style-type: none">▶ Provide pro-forma Business Paper reports and attachments to our members to promote their inclusion at council meetings.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
3.3.2	Councils regularly submit motions, issues and agenda items for region meetings for consideration.	<ul style="list-style-type: none">▶ Provide timely advice of the focus for each meeting's agenda, and invite submissions.▶ Provide reference material (discussion papers, media articles) to support council submission preparation.					
3.4 VALUED COLLABORATION							

PILLAR 3: LEADERSHIP AND ENGAGEMENT

GOALS & ACTIONS CONTINUED:



Ref	Where do we want to be by 2025?	How will we get there?	How will we get there?				
			20-21	21-22	22-23	23-24	24-25
3.4.1	The MDA is a valued development and delivery partner in local and regional projects and initiatives.	▶ Work with Regional Chairs to identify opportunities for MDA contributions to projects and initiatives.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
3.4.2	MDA has a strong working relationship with the Murray-Darling Basin Authority based on agreed principles.	▶ Maintain a Memorandum of Understanding with the Murray Darling Basin Authority (MDBA). ▶ Annually develop, implement and report on the MDBA/MDA Collaborative Activities Plan.					
3.4.3	MDA is a valued partner and sponsor to others delivering projects in support of Basin outcomes.	▶ Support key external stakeholders in the delivery of commonly-aligned projects and initiatives throughout the Murray-Darling Basin.					
3.5	STRONG STAKEHOLDER RELATIONSHIPS						
3.5.1	MDA has external partnerships across local government and with community stakeholders.	▶ Identify all existing and proposed partnership arrangements and formalise these with a Memorandum of Understanding or similar.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
3.5.2	Continued engagement with Basin, State and Federal governments demonstrates value and efficiencies in local and peak local government participation.	▶ Partner with Government agencies in the design and delivery of projects. ▶ Exhibit annually at the Australian Local Government Association conference. ▶ Exhibit and present at State Local Government Associations' conferences. ▶ Identify partnerships for exhibition, presentation and engagement at other community, government and industry events.					
3.5.3	First Nations culture is reflected in and supported by MDA policy and position statements.	▶ Develop relationships with First Nations organisations. ▶ Grow MDA membership of First Nations organisations to ensure their representation in the decision-making process. ▶ Foster strong and active relationships with First Nations peak agencies across the Basin.					
3.5.4	Opportunities exist for inter-regional discussion and collaboration.	▶ Hold regular inter-regional meetings. ▶ Deliver the Connecting Catchments and Communities program.					

PILLAR 3: LEADERSHIP AND ENGAGEMENT MEASURES & INDICATORS:



We will use the measures and indicators below to monitor and report on our progress and performance.

Ref	Measure/Indicator of progress or performance
	Number of MDA regional boundaries that align with other geographic or issues- based regional configurations.
	Proportion of our members who participated in at least 75% of their regional meetings.
	Proportion of our Regional Chairs who participate in MDA National Board Meetings.
	Number of external events that Regional Chairs participate as representatives of MDA in per annum.
	Proportion of our members who were represented at our annual conference each year.
	Proportion of our member councils with MDA as a standing agenda item in their Council business papers.
	The average proportion of member councils attending each Region meeting.
	Proportion of Region Meetings and AGMs attended by MDA CEO.
	Number of our Regions with a current adopted Regional Profile and Statement of Priorities, received by the National MDA Board.
	Total annual number of regional projects and initiatives that MDA is a partner.
	Number of regions where partnership initiatives occurred.
	Proportion of MDA members who are satisfied with MDA's contribution to regional initiatives.
	Proportion of published state and national Basin policies that MDA contributes.
	Proportion of annual conference motions that progress to be the basis of MDA priorities, policies or position statements.
	Proportion of our policies/position statements that have their genesis in Region meeting resolutions.
	Proportion of our members who agree that issues important to them are reflected in MDA policy.
	Average number of our members who provide feedback on draft policies and position statements.
	Number of Basin-related forums to MDA contributes to (see also Pillar 2).
	Number of external partnerships in place (formalised with a written agreement or MoU).
	Proportion of members who are satisfied that MDA's work with all levels of government achieves value and efficiencies.
	Number of First Nations organisations or representatives who are MDA members.
	Status of Memorandum of Understanding with the Murray-Darling Basin Authority.
	Number of annual conference program presentations from First Nations organisations.
	Number of inter-regional meetings held per annum.
	Average number of participants represented at inter-regional meetings.



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PILLAR 4: CORPORATE DEVELOPMENT

GOALS & ACTIONS:



Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
4.1 GOOD GOVERNANCE							
4.1.1	Our Board is a board of choice, where a diversity of views and perspectives is valued, and the right mix of skills and experience is attracted.	<ul style="list-style-type: none">Develop a Board information and induction kit.Promote leadership development opportunities to Board members.Provide and promote leadership development opportunities for our members.Establish a Regional Executive Committee framework.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
4.1.2	All our Board members are members of the Australian Institute of Company Directors.	<ul style="list-style-type: none">Work with councils to identify councillors for nomination to the Australian Institute of Company Directors (AICD).Sponsor one Board member per year to complete the AICD course.					
4.1.3	Our Board is well supported by a number of technical and skills-based sub-Committees that provide guidance and advice.	<ul style="list-style-type: none">Establish Science & Education, Audit & Risk, and Finance sub-Committees.Maintain the Strategic Advisory Committee.					
4.1.4	Our planning and reporting provides us with clear direction and makes us accountable to our members.	<ul style="list-style-type: none">Maintain a strong Strategic Advisory Committee to support our planning and reporting functions.Proactively engage our members and other stakeholders in setting our strategic direction and prioritising our annual programs and activities.Ensure our annual planning cascades directly from our adopted Strategic Plan.Provide regular reports on our progress and performance to our Board and our members.					
4.1.5	Our technology supports us to achieve effective outcomes and be flexible in our mode of delivery.	<ul style="list-style-type: none">Acquire assets and implement software platforms, including Salesforce CRM.					
4.1.6	Our Governance Framework is robust, and reflects and supports our organisation's processes and accountabilities.	<ul style="list-style-type: none">Complete and adopt our Governance Framework					

PILLAR 4: CORPORATE DEVELOPMENT

GOALS & ACTIONS CONTINUED



Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
4.2 FINANCIAL SUSTAINABILITY							
4.2.1	Membership revenues are sufficient to fund recurrent business.	<ul style="list-style-type: none">▶ Develop and implement a membership strategy, supported by robust internal communications.▶ Implement a continuous business improvement program to identify efficiencies.▶ Prepare an annual budget.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
4.2.2	Our membership and business enterprises generate sufficient income to meet our operational expenditure, while grant funding supports projects and initiatives.	<ul style="list-style-type: none">▶ Adopt a modular and sustainable business model▶ MDA maintains submission-ready project proposals that reflect the needs of our member councils and communities▶ Consult with our members and stakeholders to identify key community needs and project opportunities▶ Actively seek funding for the submission-ready proposals.▶ Prepare quality projects proposals that are well-developed and meet funding opportunities.					
4.2.3	Our membership revenue increases by 10% per annum (with ultimate goal of \$570,000 in membership revenue).	<ul style="list-style-type: none">▶ Review membership fees and charges annually. Grow our membership to enhance our revenue base.					
4.2.4	MDA has sufficient resources to respond to all opportunities that fall within its remit.	<ul style="list-style-type: none">▶ Utilise financial resources to source additional expertise and capacity as required.					
4.2.5	We will have 167 member councils.	<ul style="list-style-type: none">▶ Develop, promote and distribute a new member information kit to all eligible councils.▶ Encourage membership renewal through robust internal communications. Follow up with non-renewing councils to identify reasons for non-renewal.					
4.2.6	Project revenues are modular and contribute to scalable projects and initiatives.	<ul style="list-style-type: none">▶ Utilise our library of scalable, submission-ready projects to rapidly and effectively tap into grants programs.					
4.2.7	Remain at the forefront of the local government and community sector as a competitive business.	<ul style="list-style-type: none">▶ Apply a robust and effective system for successful grant and funding applications.					

PILLAR 4: CORPORATE DEVELOPMENT

GOALS & ACTIONS CONTINUED



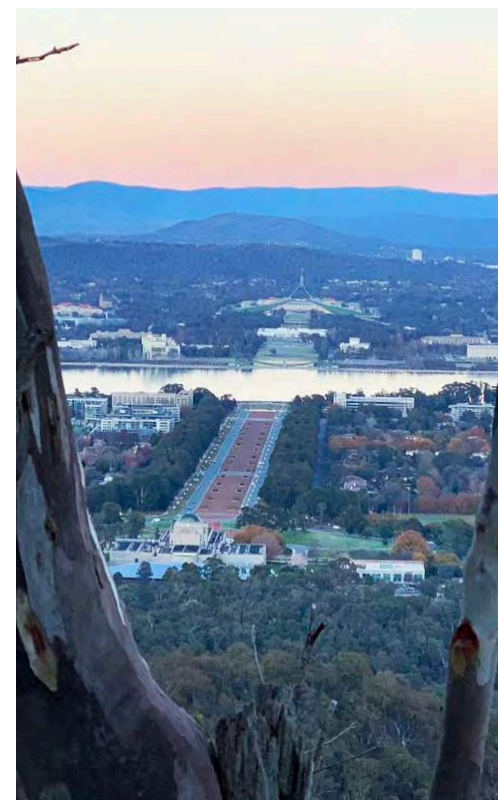
Ref	Where do we want to be by 2025?	How will we get there?	When will we get there?				
			20-21	21-22	22-23	23-24	24-25
4.3 EFFECTIVE COMMUNICATIONS							
4.3.1	We have a comprehensive Communications Plan that enables our communications to be strategic, targeted, effective and contemporary.	<ul style="list-style-type: none">▶ Conduct a stakeholder mapping activity.▶ Develop a social media strategy.▶ Create key messages to support our corporate communications.▶ Maintain a relationship with media outlets across the regional footprint.▶ Institute an annual member survey to ensure our work continues to reflect our members' needs and expectations.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
4.3.2	MDA's brand reflects our vision.	<ul style="list-style-type: none">▶ Undertake an identity and branding review to determine if the MDA's current identity and brand meets our current and emerging vision/requirements.					
4.4 EMPLOYER OF CHOICE							
4.4.1	We remain an employer of choice, fostering a positive and progressive culture in the workplace.	<ul style="list-style-type: none">▶ Employ the right people to design and deliver projects.▶ Develop and implement succession planning for the organisation.	Progress toward the achievement of these goals and actions is set out in the Murray Darling Association Annual Operating Plan and will be reported on yearly in the Annual Report.				
4.4.2	MDA achieves the highest standards of corporate and operational compliance.	<ul style="list-style-type: none">▶ Develop and implement an organisational business operational and policy framework, including a Code of Conduct, governance standards, and quality control mechanisms.▶ Comply with all legislative requirements in a timely way.					

PILLAR 4: CORPORATE DEVELOPMENT MEASURES & INDICATORS:



We will use the measures and indicators below to monitor and report on our progress and performance.

Ref	Measure/Indicator of progress or performance
	Proportion of Board members who are members of the Australian Institute of Company Directors.
	Proportion of Board members who report satisfaction in their role.
	Proportion of Board members who report the Board is effective and cohesive.
	Proportion of our members who agree that the Board reflects the diversity of its constituency.
	Proportion of our members who are satisfied with performance and composition of our Board.
	Number of Regions with an Executive Committee in place.
	Membership revenue.
	Proportion of recurrent business costs funded by membership revenue.
	Number of member councils.
	Number of Local Land Council members.
	Number of other organisations and individuals who are members.
	Proportion of all possible members who are financial members of MDA.
	MDA communications reflect and are supported by the adopted Communications Plan.
	Number of projects or programs of work ideally suited to MDA's remit, but passed over due to lack of resources.
	Number of submission-ready proposals on hand.
	Proportion of submission-ready proposals that respond to member-identified needs.
	Proportion of revenue generated as own-source (memberships, business enterprises, fees for service).
	Annual amount of revenue generated from external sources (grants, bequests).
	Proportion of funding applications made that were successful, and the value of funding received.
	Proportion of project funding generated from project-specific grants programs.
	Annual staff turnover.
	Staff rating of satisfaction at work.
	Proportion of our members who agree that our brand reflects our vision.
	The status of our software and technology.



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MONITORING OUR PROGRESS AND PERFORMANCE

Utilising the measures and indicators of progress and performance described for the four Pillars within this document, MDA will monitor and report on the success of its strategies in achieving our strategic objectives on behalf of our members.

We intend to prepare an annual report card which describes how much we have done, how well we have done it, and the outcomes achieved for our members and communities.



GET IN TOUCH

MDA is committed to innovation and responsiveness.

If you or your organisation identifies issues for MDA action that should be considered in future reviews of this Strategic Plan, please get in touch:

Email: admin@mda.asn.au

Telephone: 03 5480 3805

Website: www.mda.asn.au

Post: Level 1, 250 Anstruther St
Echuca Vic 3564





Corporate Plan

2025-2030

WHY ARE WE HERE?



Growing together



Customers



Community



Company

WHAT DO WE DO?

We enable customers to generate regional productivity through irrigation.

HOW DO WE DO IT?

We deliver water in the best way possible.

WHO WE ARE?



Safety
First



Customer
Centric



Environmentally
Responsible



One
Team

SUCCESS STATEMENTS

- Our customers get the water they need when they want it, through smart, autonomous, and integrated systems
- We work together with customers to ensure their needs are understood and valued.
- We respond to our customers promptly, providing clear next steps and timely follow ups.
- We make our services, processes, and interactions easier for our customers.
- Our identity within the industry positions us as a respected voice, thought leader, and valued employer.
- Our forward-thinking mindset enables us to create and capture new business through strategic partnerships.
- Our business is efficient, future focused, adaptable, and resilient.
- We adopt economically sustainable opportunities to improve environmental outcomes.
- We foster a culture of continuous improvement and benefits realisation.
- Our people are supported and developed to be ready for the future.

VALUES



CLARITY



CONNECTION



VULNERABILITY



IMPROVEMENT

murrirrigation.com.au



Griffith Flood Liable Lands CS-CP-403 (LOCAL POLICY)

Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	11 Oct 2011	0353	11 Oct 2011
2	13 Aug 2013	0255	13 Aug 2013
3	22 Aug 2017	17/205	22 Aug 2017
4	8 Nov 2022	22/291	8 Nov 2022

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Glossary

AEP	Annual Exceedance Probability. Refers to the probability of a flood event of a certain magnitude occurring in a year. E.g. a 1% AEP flood event is the 100 year ARI flood event.
AHD	Australian Height Datum
ARI	Average Recurrence Interval
Council	Refers to Griffith City Council, who is the consent authority for the approval of developments
DCP	Development Control Plan
DECC	former Department of Environment and Climate Change (<i>now OEH</i>)
DECCW	Department of Environment, Climate Change and Water (<i>now OEH</i>)
EP&A Act	Environmental Planning and Assessment Act, 1979
EPAR	Environmental Planning and Assessment Regulation, 2000
FPA	Flood Planning Area
FPL	Flood Planning Level
LEP	Local Environment Plan
LG Act	Local Government Act, 1993
LGA	Local Government Area
Management Plan	Floodplain Risk Management Plan
Management Study	Floodplain Risk Management Study



Manual	Floodplain Development Manual (2005)
OEH	Office of Environment & Heritage (<i>formerly DECCW</i>)
PMF	Probable Maximum Flood
SEPP	State Environmental Planning Policy
SES	State Emergency Service

1 About This Policy

1.1 Background

This policy seeks to guide proposed development in the management of flood risks for the Griffith City Council Local Government Area. It shall be applied in conjunction with other development control plans adopted by Griffith City Council.

The policy presents a set of flood related assessment criteria which are to be met by all new development. For example, the minimum floor level for new residential development has been based on the 100 year ARI flood event with a 500 millimetre freeboard.

The policy also requires that new development address potential life threatening situations arising from flooding, up to the probable maximum flood. The aim is to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods, wherever possible.

The policy also identifies areas where development may be restricted as a result of flood related risks. The restriction of incompatible development in these areas is essential to achieving the objectives of floodplain risk management set out in the Floodplain Development Manual.

This policy has been developed in the context of specific information available on flooding for the area of the Griffith LGA covered by the '*Griffith Floodplain Risk Management Study & draft Floodplain Risk Management Plan*' (September 2011). In addition, it is intended to be used as an interim set of guidelines for all flood prone land within the LGA until incorporated into a comprehensive development control plan (DCP).

1.2 Purpose

The purpose of this policy is to provide matters to be taken into consideration by Griffith City Council when exercising its environmental assessment and planning functions in relation to development in the City of Griffith. The policy addresses the new directions in flood risk management that are embodied in the NSW Government's Flood Prone Land Policy and which are emphasised in the government's Floodplain Development Manual.

1.3 Where Does This Policy Apply?

The policy applies to flood prone land within the whole of the Griffith City Council LGA. There are a number of floodplains within the LGA. The policy includes general



provisions relating to all flood prone land. However, it has been developed in the context of work undertaken as part of the Griffith Floodplain Risk Management Study.

1.4 How Does the Policy Relate To Other Legislation and Regulations

This policy should be read in conjunction with the relevant provisions of the following:

- NSW Government's *Flood Prone Lands Policy* and *Floodplain Development Manual* (2005);
- The *Environmental Planning & Assessment Act 1979*, and regulations thereto,
- Applicable environmental planning instruments, including but not limited to *Griffith Local Environmental Plan 2014*; and,
- other relevant Development Control Plans (DCPs) and Policies adopted by Council including 'Floor Heights - Policy No. 105' (CS-CP-318).

1.5 Objectives

The objectives of this policy are:

- to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property;
- to reduce private & public losses resulting from floods, utilizing ecologically positive methods wherever possible;
- to alert the community to the hazard and extent of land affected by potential floods;
- to inform the community of Council's policy in relation to the use and development of land affected by potential floods;
- to deal equitably and consistently with all matters requiring Council's approval on land affected by potential floods, in accordance with the principles contained in the Floodplain Development Manual issued by the NSW Government;
- to increase public awareness of the potential for flooding across the range of flood events up to the probable maximum flood level; and,
- to ensure that planning and development of essential services and land use generally makes appropriate provision for flood related risk.

2 Definitions

For the purposes of this policy, the definitions as prescribed in the NSW Government's *Floodplain Development Manual* (2005); the Griffith Local Environmental Plan (2014) and the Standard Instrument (2006) shall be adopted¹.

Concessional Allotment Concessional allotments are as defined in Clause 21A and 22 of the Griffith Local Environmental Plan (2014).

¹ Where a development or land use category is not set out in the definitions of the Flood Liable Lands Policy, the definitions set down in Griffith Local Environmental Plan 2002 or the Standard Instrument shall be used.



Commercial Development	Has the same meaning ascribed to <i>commercial premises</i> set down in the Standard Instrument, and also includes <i>pubs</i> and <i>registered clubs</i> also defined in the Standard Instrument.
Critical Infrastructure	Critical infrastructure refers to essential services and other infrastructure where loss of these services during flooding represents an unacceptable risk. This includes services such as <i>water supply system</i> , <i>sewerage system</i> , <i>telecommunication facilities</i> , <i>electricity generating works</i> . It includes structures associated with an <i>emergency services facilities</i> , and <i>hospitals</i> , and designated flood evacuation centres.
Development	<p>is defined in Part 4 of the EP and A Act. In addition, the Manual adopts the following definitions for particular development types.</p> <p>Infill Development refers to the development of vacant blocks of land that are generally surrounded by developed properties and is permissible under the current zoning of the land. Conditions such as minimum floor levels may be imposed on infill development.</p> <p>New Development refers to development of a different nature to that associated with the former land use. Eg, the urban subdivision of land previously used for rural purposes.</p> <p>Redevelopment refers to rebuilding a similar type of development to that housed previously. Eg, as urban areas age, it may become necessary to demolish and reconstruct buildings on a relatively large scale. In general, redevelopment does not require re-zoning.</p>
Extension	Refers to a modification to an existing structure where a secure enclosure is provided.
Floodway	A <u>floodway</u> is defined as an area of the floodplain where significant discharge of water occurs during floods. Floodways are areas that, even if partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.
Flood Immunity Level	The level at which a road is cut by floodwaters. For example, a road which first becomes inundated by the 20 year ARI flood event has a 20 year flood immunity level.
Flood Planning Area	The area of land below the FPL and thus subject to flood related development controls.
Flood Planning Levels (FPL)	Is the combination of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management



	purposes, as determined in management studies and incorporated in management plans.
Flood Prone Land	Land susceptible to flooding by the PMF event. Flood prone land is synonymous with flood liable land.
Flood Storage	A <u>flood storage</u> is an area of the floodplain that is important for the temporary storage of floodwaters during the passage of a flood. A substantial reduction in the capacity of flood storage areas may cause flood levels to rise and the peak discharge downstream may increase.
Freeboard	refers to a designated height above the design flood which is stipulated to incorporate a suitable factor of safety into development. Freeboard may vary depending upon the proposed type of development.
Industrial Development	Has the same meaning ascribed to <i>industry</i> as set down in the Standard Instrument.
Residential Development	Has the same meaning ascribed to <i>residential accommodation</i> as set down in the Standard Instrument.
Tourist Accommodation	Has the same meaning ascribed to <i>tourist and visitor accommodation</i> as set down in the Standard Instrument.

3 Statutory Context

3.1 Title

This document is called *Griffith Flood Liable Lands Policy* ('the policy').

3.2 Status

The policy is:

- a policy that is required to be listed in the Council's *Summary of Affairs* published under the *Freedom of Information Act 1989*.
- a policy that is a matter for consideration under Section 79C of the *Environmental Planning and Assessment Act, 1979* as it is relevant to provisions contained in *Griffith Local Environmental Plan 2014* in respect to flood liable land.

3.3 Commencement

The policy commences operation on 11/10/2011.

3.4 Where the Policy Applies

The policy applies to all flood prone land within the Griffith LGA.



3.5 Development to Which the Policy Applies

The policy applies to all development except minor alterations to existing buildings listed as exempt development in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

3.6 Council Functions to Which the Policy Applies

The contents of the policy are to be considered by the Council when determining development applications under Part 4 of the *Environmental Planning & Assessment Act 1979*.

3.7 Relevant LEPS/DCPS

The policy supplements the provisions of the *Griffith Local Environmental Plan, 2014* and relevant development control plans for particular land uses or zones.

3.8 Related Documents

The policy has been developed considering the following Council flood related policies that were current as at May 2013:

- Buildings –Floor Heights, Policy CS-CP-318;
- Onsite Stormwater Detention Policy, CS-CP-404

It also considers the findings of a range of flood and floodplain management studies that have been prepared for specific creek and river systems within the LGA. These include:

- Aerodrome Overland Flow Flood Study (2010)
- Aerodrome Overland Flow Floodplain Risk Management Study and Plan (2011)
- CBD Overland Flow Flood Study (2012)
- CDB Overland Flow Floodplain Risk Management Study and Plan (2013)
- Lake Wyangan Flood Study (2012)
- Lake Wyangan Floodplain Risk Management Study and Plan (2013)
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 2
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 3
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 4
- Griffith Main Drain J and Mirrool Creek Floodplain Risk Management Study and Plan (2015)
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 2



4 Flood Risk Management Policy

4.1 Objectives

The primary objectives of this policy in terms of achieving sound floodplain management are to:

- guide the development of flood prone land, applying balanced strategies to economically, socially and environmentally manage the potential risk to life and property;
- set aside appropriate areas to convey and/or store floodwaters and to protect and restore the riparian zone; and
- ensure development, when considered both individually and in the context of cumulative development trends, will not cause unreasonable adverse flooding impacts in other locations.

4.2 Applicability

This policy applies to all Flood Prone Land within the Griffith LGA. As defined by the Floodplain Development Manual, this includes all land inundated by flooding up to the PMF. However, different types of control will apply subject to the severity, frequency and magnitude of flooding at any one location. In this regard, development controls typically apply to the area of land that falls within the flood planning area.

4.3 How to Use the Policy

The following is a summary of the steps that should be followed in the assessment of development proposals on or adjacent to flood prone land.

Step 1 - Check that the proposal is permissible relative to the zoning of the land by reference to the *Griffith City Council Local Environmental Plan 2002* or any other applicable environmental planning instrument.

Step 2 - Consider any other relevant planning controls of Council (*e.g. controls in any other applicable development control plans which govern for instance the size and setback of development*).

Step 3 - Where available, determine the relevant floodplain and obtain flood data (*e.g. flood levels and velocities*) from Council's existing flood studies (*refer Section 3.8*). This information can be obtained from Council. Where no flood study has been undertaken, the applicant will need to liaise with Council to determine whether flood restrictions may apply.



Step 4 - Determine the “provisional” hydraulic and hazard categorisation of the site. This may be determined from existing Flood Studies and Floodplain Risk Management Studies. Otherwise, this may be determined in accordance with the procedures outlined in Appendix L of the *Floodplain Development Manual 2005* and the DECC Floodplain Risk Management Guideline titled ‘*Floodway Definition*’.

At this stage applicants are encouraged to consider whether or not the advice of a Consultant and/or Engineer specialising in flood hydrology is required.

Step 5 - In consideration of the provisional hydraulic and hazard categorisation at the site, demonstrate that the development will adhere to the relevant matters for consideration discussed in **Chapter 5**.

Step 6 - Check with Council planning staff to establish any other requirements for a development application. Submit flood assessment with development application once satisfied all requirements have been met.

4.4 Provisional Site Classification

Definition of the provisional hydraulic and hazard categories which exist at the site of a development proposal is required to assess developments within flood prone land. This Policy has adopted the combination of hydraulic and hazard categories defined in the Manual. These are as follows:

- Low Hazard - Flood Fringe
- Low Hazard - Flood Storage
- Low Hazard - Floodway
- High Hazard - Flood Fringe
- High Hazard - Flood Storage
- High Hazard – Floodway

These categories are to be employed when considering development in flood prone land during the term of this policy. Pre-existing information pertaining to areas where classifications have already been developed for particular creeks, rivers or drainage channels can be obtained from the documentation listed in **Section 3.8**.

Where unavailable, the hydraulic and hazard categorisation is to be based on the judgment of an experienced flood hydraulics engineer. Council will not provide provisional site classifications, other than for areas classified as part of a flood study or floodplain risk management plan. Notwithstanding, Council may elect to nominate a provisional site classification in instances where an applicant is not prepared to provide this assessment on request and also reserves the right to review site classifications provided by an applicant.

The following provides additional details for the three hydraulic categories and two hazard categories identified above.



4.4.1 Description of Hydraulic Categories

Floodways

Floodways are shown on mapping that accompanies flood studies and floodplain risk management studies prepared by Council and are generally obtainable on application from Council.

Floodways are required for the conveyance of essential flood flow and are to be retained in a condition capable of doing so. Development in floodway areas is subject to a range of additional controls. It needs to be recognised that floodways are not necessarily indicative of high hazard areas. It is necessary to separately consider the range of factors that contribute to hazard categorisation.

For the purposes of this policy, floodways are defined as those sections of the floodplain:

Where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels.

Which even if partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.

Where most conveyance of floodwater along a particular flowpath occurs.

Where flow velocities may be relatively high compared to other areas of the floodplain.

Where blockage will either raise flood levels or redirect flood flows. In all cases blockage is to be considered at an “overall” scale in order to identify both broad scale and local impacts and is to consider the cumulative impacts of any other future development.

Flood Storage Areas

Flood storage areas are defined in the Manual as *“those parts of the floodplain that are important for the temporary storage of floodwater during the passage of a flood.”* The manual goes on to indicate that that filling or obstruction of these areas may cause an increase in flood levels and the peak discharge downstream of these areas.

The Development restrictions which apply to “HIGH” hazard flood storage areas and “LOW” hazard flood storage areas are discussed following in **Section 5.1**.



Flood Fringe Areas

Flood Fringe refers to those areas not classified as Floodway or Flood Storage that are located within the extent of the 100 year flood event.

4.4.2 Description of Hazard Categories

Appendix L of the Floodplain Development Manual details the process by which hazard categories are defined. In general, it involves firstly consideration of the peak depths and velocities present at a site and relates this to low and high hazard categories. It then outlines a range of additional factors, such as available warning times, flood risk along evacuation routes and vulnerable populations which also contribute to hazard. Consideration of these combined factors will result in definition of the final hazard categorization.

4.4.3 Existing Provisional Hydraulic and Hazard Category Mapping

At the time of the current revision, provisional hydraulic and hazard categories had been documented in the following reports for parts of the Griffith Local Government Area:

Griffith Floodplain Risk Management Study

The Griffith Floodplain Risk Management Study documented provisional hydraulic and hazard classifications for the area throughout the Main Drain 'J' floodplain. Specifically, this covers the area of the Griffith Local Government Area bounded by the Main Branch Canal to the north/east and the Mirrool Branch Canal to the south. The Study also provides hydraulic and hazard categories at Yenda and within the Griffith CBD area.

Other Studies

A range of other studies have been undertaken, or are in the process of being completed where hydraulic and hazard categorisation may be available or may become available in the future. These include:

- Aerodrome Overland Flow Flood Study (2010)
- Aerodrome Overland Flow Floodplain Risk Management Study and Plan (2011)
- CBD Overland Flow Flood Study (2012)
- CDB Overland Flow Floodplain Risk Management Study and Plan (2013)
- Lake Wyangan Flood Study (2012)
- Lake Wyangan Floodplain Risk Management Study and Plan (2013)
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 2
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 3
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 4



- Griffith Main Drain J and Mirrool Creek Floodplain Risk Management Study and Plan (2015)
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 2

4.5 Flood Planning Level

For the Griffith LGA, the 100 year ARI flood level plus a freeboard of 500 mm has been adopted as the Flood Planning Level (*FPL*). Mapping has been prepared which shows the Flood Planning Area's extent across the Main Drain 'J' floodplain and Lake Wyangan. Council is able to supply the FPL for properties located within the Main Drain 'J' floodplain.

Alternate flood planning levels may apply to particular land uses. A summary of the FPL's adopted for this policy is identified below.

- The finished floor levels of habitable rooms shall be at least equal to the FPL where known, or where not known, 500mm above the 100 year ARI flood level as advised at the time by Council.
- Flood Planning Levels shall be as follows for the following land uses:

Commercial & Industrial = 100 year flood level with 25% of the floor area to be 500 mm above the 100 year flood level. Council will give consideration to a lower floor level (*absolute minimum 1:20 year flood level*) only in circumstances to achieve mobility access standards and compatibility with existing street frontages.

Critical Utilities = If at all avoidable, critical utilities should be constructed outside of flood prone land. Where construction of critical facilities within flood prone land is unavoidable, they shall be flood free during the PMF event.

Subdivision = 100 year + 500 mm freeboard

Garages and Storage sheds = 20 year ARI flood level

4.6 Land Use Categories

The following land use categories have been identified for the purpose of considering flood related controls on potential development.

- Residential accommodation (as defined in the Standard Instrument)
- Commercial premises and industry (as defined in the Standard Instrument)
- Critical infrastructure (including *water supply system, sewerage system, telecommunication facilities, electricity generating works, emergency services facilities, and hospitals as defined in the Standard Instrument* and designated flood evacuation centres)



- Subdivisions (as defined in the Environmental Planning and Assessment Act, 1979) and boundary adjustments (as defined in Griffith Local Environmental Plan 2014).
- Caravan parks, tourist and visitor accommodation (as defined in the Standard Instrument)
- Fencing
- Car parks

4.7 Matters for Consideration

Development of any of the above land use categories may proceed subject to determination of a site's provisional hydraulic and hazard categories. The matters for consideration which apply to each land use type for hydraulic and hazard categories has been addressed in **Section 5**.

5 Matters for Consideration

The following section identifies the matters for consideration which are relevant to specific land uses that fall within flood prone land. The matters for consideration have been developed in the context of the hydraulic categories adopted by the Manual.

5.1 Flood Storage and Flood Fringe

The following section outlines the matters for consideration which apply to flood prone land categorised as flood storage or flood fringe. In general:

- Development in flood storage areas has the potential to adversely impact on flooding at adjacent properties. Accordingly, development in these areas is subject to certain controls on filling, and blockage of this land.
- Flood Fringe areas are generally locations which will have little effect on the downstream conveyance of floodwaters.

In addition, consideration is given to the flood hazard posed to users of the proposed development.

5.1.1 Residential Development

New Development, Infill Development and Redevelopment

(a) Floor Levels

The elevation of all habitable floor levels shall be equal to or above the FPL. The minimum elevation for garages, sheds and other structures ancillary to residential development is the peak 100 year ARI flood level.



(b) Flood Proofing

Flood proofing shall be provided to all aspects of the proposed development up to the FPL. Flood proofing for the building are required and flood proofing measures may be considered on a case by case basis.

(c) Flood Impact on Other Properties

Where development will take place in a designated flood storage area, the applicant is required to demonstrate that the net loss in flood storage is negligible. Where practical, excavation and other works may be proposed to address this requirement

Any development must also ensure that existing overland flow paths are not impeded. Additional drainage infrastructure may be required to achieve this objective.

Council will review each development on a case by case basis to establish the level of investigation required to assess the impact of flooding on other properties. It is recommended that the applicant liaise with Council to establish whether a Flood Impact Assessment Report is required for the proposed development.

(d) Site Access and Flood Evacuation Requirements

The internal access road shall be equivalent to the flood immunity level of the adjoining public road. However, Council may also consider access roads as low as the 20 year ARI flood event in certain circumstances.

Where there is greater than dual occupancy proposed, a flood risk assessment will be undertaken to demonstrate that evacuation of the residents during flooding can proceed safely without increasing demand on emergency service resources. Consideration should be given to the site's emergency response requirements.

Developments reliant upon evacuation through high hazard floodway or high hazard flood storage conditions will not be supported by Council.

The applicant is encouraged to liaise with Council to establish the level of investigation required to assess the flood risk at a particular property.

Extensions

In general, extensions shall proceed in accordance with the guidelines outlined above. Notwithstanding, extensions undertaken on single dwelling and dual occupancy may be exempt from item (d) above.

In addition, consideration will be given to floor levels for minor extension or modifications below the FPL provided:



- the area of the extension's floor level covers no more than 20% of the existing floor level, or 40 m², whichever is greater,
- the extension is above the level of the 20 year ARI flood event.
- the extension is as high as practical without modification to the existing roofline.

5.1.2 Commercial and Industrial Development

New Development & Redevelopment

(a) Floor Levels

At least 25 % of the floor level provided for this type of development shall be at an elevation equal to the 100 year ARI flood level plus a minimum of 500 mm. The remaining 75% of the floor level shall be sited at a level equivalent to the peak 100 year ARI flood level.

Where multiple units will be provided at an industrial or commercial subdivision, at least 25 % of the floor level of each unit must be at an elevation equivalent to or above the FPL.

The application shall demonstrate the feasibility of moving bulky or heavy items to the raised area.

Consideration may be given to floor levels below this for non-habitable parts of the development (including garages, sheds). However, all floor levels will be required to be a minimum of the 20 year ARI flood level.

(b) Flood Proofing

Flood proofing shall be undertaken in accordance with that described for residential properties in **Section 5.1.1**.

(c) Flood Impact on Other Properties

The flood impact on other properties shall be assessed in accordance with that described in **Section 5.1.1**.

(d) Site Access and Flood Evacuation Requirements

For all industrial and commercial developments, the internal access road shall be equivalent to the flood immunity level of the adjoining public road.

Furthermore, where flood free access up to and including the 100 year ARI flood event is not available, a flood risk assessment shall be undertaken to demonstrate that evacuation can proceed safely without increasing demand on emergency services.



Extensions

In general, extensions shall proceed in accordance with the guidelines outlined above.

In addition, consideration will be given to floor levels for minor extension or modifications below the FPL provided:

- the area of the extension's floor level covers no more than 20% of the existing floor level, or 60 m², whichever is greater,
- the extension is above the level of the 20 year ARI flood event.
- the extension is as high as practical without modification to the existing roofline.

5.1.3 Critical Infrastructure

Where possible, critical infrastructure should be located outside the Flood Planning Level. However, the policy recognises that this is not possible in all circumstances, in which merit assessment will apply.

New Development & Redevelopment

Critical infrastructure is defined in accordance with the definition provided in **Section 2**. However, this is not intended to be an exhaustive list of critical infrastructure and Council may elect to define additional development types as critical.

(a) Floor Levels

The floor level of all critical infrastructures shall be at or above the level of the Probable Maximum Flood (PMF).

(b) Flood Proofing

Flood proofing shall be provided for all parts of the building up to and including the level of the PMF. Preferably, this is to be achieved by filling the portion of the site containing the critical infrastructure, however alternative methods may also be considered.

A certified structural engineer's report will be required to verify that the structure can withstand forces generated by flooding for all floods up to and including the PMF event.

(c) Flood Impact on Other Properties

The flood impact on other properties shall be assessed in accordance with the procedures described in **Section 5.1.1**.



(d) Site Access and Flood Evacuation Requirements

Appropriate access shall be provided to the site up to and including the PMF.

Extensions

Extensions to critical infrastructure shall be undertaken in accordance with the guidelines described above.

5.1.4 Subdivisions

The sub-division of land will be subject to the matters for consideration identified above for the relevant land use type (i.e. residential or commercial/industrial). In addition, the following flood related controls will apply to the sub-division of flood liable land.

(a) Floor Levels

The minimum floor level shall be in accordance with the guidelines adopted for residential and industrial/commercial development in **Sections 5.1.1 and 5.1.2.**

(b) Flood Proofing

Flood proofing shall be provided for all the proposed lots up to FPL.

(c) Flood Impact on Other Properties

A flood impact assessment is required to verify that the subdivision does not result in adverse flood impacts to properties located off-site.

Council will only support subdivisions in flood prone land, provided the applicant can demonstrate to Council's satisfaction the requirements of Appendix L of the Manual 2005 have been met. Such applications are to be prepared by a suitably qualified civil engineer/surveyor/hydrologist with a demonstrated experience in flood assessment of land development proposals.

Furthermore, assessment of several different ARI flood events may be required to verify that the impact of flooding is not increased for floods other than the 100 year ARI flood event.

Where required, appropriate compensatory works shall be incorporated into the sub-division.



(d) Site Access and Flood Evacuation Requirements

Safe vehicular access shall be provided at the level of the 100 year ARI flood event to each individual allotment within a residential sub-division. Modification of this criteria may be considered where the adjoining public road is below the 100 year ARI flood and it is demonstrated through a flood risk assessment that residents of the sub-division can be evacuated to ground situated above the PMF without increasing the demand on emergency services.

For a commercial and industrial sub-division, the access road shall be sited at flood immunity level of the adjacent public road.

5.1.5 Existing Entitlements

- Council may support the replacement of an existing dwelling within flood prone areas provided the new dwelling is permissible according to the zoning and evidence is submitted with applications to demonstrate the existence of the dwelling. The applicants must demonstrate the existence of the former dwelling by photographs and/or records of building approvals.
- Approvals should be submitted for any dwelling erected after 1 January 1996 (*being the gazettal date of Interim Development Order No. 1*)
- Levels of habitable floors of the former dwelling based on AHD and certified by a Registered Surveyor must be submitted with the application.
- Council will not support replacement of an existing dwelling to be located within a High Hazard – Floodway.

5.1.6 Caravan Parks & Manufactured Housing

- Caravan Parks & Manufactured Housing permissible under Council's zoning shall be restricted to Low Hazard flood areas.
- Applicants are to assess proposals for Caravan Parks and Manufactured Housing in accordance with the building development controls outlined above.
- Evacuation plans shall be prepared as part of the on-site management plans required for the site.

5.1.7 Carparks

- Carparks are permitted within flood prone areas provided the applicant can demonstrate the potential damage to motor vehicles from flooding is minimised.
- Proposals for carparks shall also ensure that motor vehicles do not become moving debris during floods, which threaten the integrity of structures, safety of people or damage other property.
- Proposals for basement carparks shall ensure risk to human life from the inundation of basement and other car park or driveway areas is minimised.



5.1.8 Fences

- Fences of a continuous design, such as paling fences, and continuous brick fences, shall be permissible in flood fringe areas, subject to Council approval. In some cases, Council may require the applicant to demonstrate that fencing will not result in any significant increase in flood levels and flow velocities off site. In this regard, each case will be assessed on its merits.
- Some limitations may apply to fences which create a continuous impermeable design within flood storage areas.
- Post and rail fences may be permitted and shall be designed so as to permit the unimpeded flow of flood waters.
- Fencing of a continuous design may be permitted in flood prone areas (other than floodways) provided that the applicants can demonstrate that the proposed fencing does not generate an adverse impacts on flooding.

5.1.9 Rezoning of Land

The following will apply to rezoning applications of flood prone land:

- Any ministerial direction given pursuant to Section 117(2) of the Environmental Planning and Assessment Act, 1979 in respect to flood prone land.
- Rezoning applications in flood prone land will not be considered unless a Floodplain Risk Management Study has been undertaken or investigations are completed to confirm potential impacts of the full range of floods (including the PMF) on the future development of the rezoned land are minimal (ie development is of minor significance).
- The applicant will also be required to prepare hydraulic and hazard category mapping for the proposed rezoning site, where this is not available from existing studies.
- Council will not support the rezoning of flood prone land for all sites provisionally classified as High Hazard and/or floodway in accordance with the Floodplain Development Manual (2005), unless it can be shown that works proposed as part of the rezoning will reduce the hazard categorization of the land, while at the same time not adversely impacting flood characteristics for adjacent or nearby properties. Such applications are to be prepared by a suitably qualified civil engineer / surveyor / hydrologist with a demonstrated experience in flood assessment of land development proposals.

5.2 Floodways

A definition of floodway areas is provided in **Section 4.4.1**. In general, development within a floodway is discouraged for the following reasons:

- the potential to redirect flows;
- the level of potential danger to personal safety; and,
- significant financial losses due to the damage potential.



Notwithstanding, there may be circumstances in which certain types of development could proceed, subject to a range of considerations. These considerations are in addition to the relevant requirements outlined in **Section 5.1**.

The types of development that may be appropriate within low hazard floodways include:

- infill development;
- existing entitlements/ concessional allotments, where provision is made in accordance with the guidelines of the Griffith LEP; and
- replacement and extensions to existing structures.

In general, the following types of activities in area provisionally categorised as “floodway” will not be permitted:

- sub-division;
- rezoning; and,
- new development.

For development in the floodway, landowners / developers will be given opportunity to further refine the floodway, but at their own cost. Applications are to be prepared by a suitably qualified civil engineer/surveyor/hydrologist with a demonstrated experience in flood assessment of land development proposals. It is expected that any changes to the floodway development would be difficult to justify.

The relevant controls that apply to development within floodway areas are identified in the following.

5.2.1 Low Hazard Floodways

General

The following provides a summary of development which is permissible in low hazard floodways. Each proposal to develop in low hazard floodways will be considered on the basis of its merits. In general, development of floodways may proceed where either one of two conditions can be met:

- The proposal is located in an area of the floodway where a substantial amount of development already exists and existing development can be utilised to construct new buildings and structures without measurably increasing the lateral blockage of a floodway (*e.g. infill development*); or,
- The proposal is located on a large enough lot such that the proposal and associated filling is minor relative to the overall conveyance of floodwater and any localised impacts can be maintained wholly on site (*e.g. concessional allotments on rural land*).



Where permissible, development shall proceed in accordance with the following principles:

Infill Development

Infill development generally occurs where undeveloped lots exist within urbanised areas or subdivisions. A definition of infill development is provided in **Section 2**.

The following controls shall apply to infill development in floodway areas.

- The building is located to avoid any additional blockage of the lateral extent of the floodway. In this regard, the “shadow” of upstream development must be utilised when siting the proposed dwelling (refer Figure 1).
- The maximum permissible floor area shall be in accordance with the provisions of other DCP’s. However, the footprint development will need to consider the shadow requirements outlined immediately above.
- Any other structures (e.g. garages) must be sited to also observe shadow requirements.
- Habitable rooms will be sited above the flood planning level.

An example of infill development that incorporates the principles of shadow development is shown in **Figure 1**. Please note, **Figure 1** is solely intended as an example of what might constitute development within the shadow of a pre-existing building.



Figure 1 Example of a “Shadow” created by an existing development

Concessional Allotments / Existing Entitlements

Concessional allotments are recognised in the Griffith LEP 2002. The following outlines the assessment criteria for construction of an additional dwelling on an area where concessional allotments are permitted. In general, the following will also apply to existing entitlements.

- Where a property is only partially affected by the floodway extent, the proposed dwelling shall be located outside the floodway, unless reasons can be given why locating the building within the floodway generates more optimal flood risk management outcomes (for example, the combined consideration of hazard and blockage suggests the property is best located in a floodway where it can also utilise an existing road and avoid any requirement for fill).



- Where the property boundary falls wholly within the floodway extent the property should be sited to minimise the impact on flooding. This should include consideration of the following aims:
 - Develop in the shadow of an existing structure, where applicable;
 - Minimise the volume of fill required to develop the property. This may be achieved by positioning the house on locally raised terrain. Notwithstanding, hazard categorisation and evacuation requirements will still need to be considered.
 - Locate the property to avoid any off-site flood impacts. In this regard, Council may require the proponent engage a suitably qualified flood engineer to assess the proposal.
- Adequate evacuation from the site must be provided in accordance with the principles outlined in Section 5.1.

Redevelopment

Re-development is defined in **Section 2**. Re-development of a lot located within the floodway on land zoned 1 (a) rural or 1(c) rural residential by the Griffith LEP 2002 should observe the principles outlined above for concessional allotments.

Where redevelopment in the floodway occurs on existing land under the Griffith LEP, redevelopment should generally occur in accordance with the principals outlined above for infill development.

Extensions

Extensions to existing dwellings are permissible. However, where they are located within a floodway zone, they must observe the following:

- No greater than 60 m² in area for residential developments. Variations to this for industrial, commercial and rural residential will be considered on a case by case basis.
- They are to observe the principles of shadow development outlined for infill development. That is, any extensions must avoid increasing the blocked area of the floodway.
- Habitable rooms must be constructed with a minimum floor level not less than the Flood Planning Level.

Fences

Where dividing fences across floodways are unavoidable, they are to be constructed only of open type fencing that will not restrict the flow of flood waters and be resistant to blockage.



5.2.2 High Hazard Floodways

Development within highway hazard floodways is generally discouraged. Council may consider granting permission to minor developments including extensions provided the requirements outlined in **Section 5.2.1** can be met. It is noted that only very minor sections of the Main Drain 'J' floodplain have been categorised as "High" hazard.

5.3 Additional Flood Proofing Matters for Consideration

The following provides additional guidance in relation to flood proofing measures which have been described above. These flood proofing measures shall apply to all development which will have the potential to be flood affected.

Electrical installations

Electrical fixtures such as power points, light fittings and switches are to be sited above the FPL unless they are on a separate circuit (with earth leakage protection) to the rest of the building.

Building Materials

Where parts of the building are proposed to be below the FPL, they are to be constructed of water-resistant materials.

Large buoyant objects

Areas where cars, vans and trailers etc are parked, displayed or stored are not to be located in areas subject to property hazard. Containers, bins, hoppers and other large floatable objects also are not to be stored in these areas. Heavy vehicle parking areas are not to be located in areas subject to property hazard.

Method of construction

Timber framed, light steel construction, cavity brickwork and other conventional domestic building materials are generally not suitable forms of construction where the property hazard is high. Where property hazard is high, the structure shall be certified by a practicing structural engineer to withstand the hydraulic loads (*including debris*) induced by the flood waters.

Structural Design

All buildings shall prior to occupation be certified by a civil or structural engineer that the structures can withstand the forces of floodwaters, buoyancy and debris loadings up to the 100 year ARI flood event plus freeboard.



Car Parks

- Where possible basement car parks are to be protected from inundation from the 100 year ARI flood event.
- The minimum surface level of open space car parking subject to inundation within high hazard areas shall be designed giving regard to vehicle stability in terms of depths and velocity during inundation by flood waters.

6 Supporting Documentation to be Submitted with an Application

6.1 Survey Plans

Development applications affected by this policy shall be accompanied by a survey plan showing:

- the position of the existing building/s or proposed building/s;
- the existing ground levels to Australian Height Datum around the perimeter of the building and contours of the site, and,
- the existing and proposed floor levels relative to Australian Height Datum.

Applications for earthworks, filling of land and subdivision shall be accompanied by a survey plan (with a contour interval of 0.1m) showing relative levels to Australian Height Datum.

6.2 Flood Impact Assessment and Flood Risk Assessment

Where required by the matters for consideration outlined in **Section 5**, a Flood Impact Assessment is to be supplied addressing the issues outlined in Appendix L of the New South Wales Government (2005) Floodplain Development Manual.

For large scale developments, or developments in critical locations, particularly where an existing catchment based flood study is not available, it may be necessary to prepare a flood study based on the results of a fully dynamic one or two dimensional computer model. Alternatively, where a flood study already exists, it will be necessary to use the hydraulic model developed for that flood study to assess the development proposal. In either case, the assessment should:

- quantify the potential impact of the development proposal on flood behaviour elsewhere in the floodplain and particularly across adjoining land/properties; and,
- determine the potential impact of flooding on the development proposal and the future users of the development plus the cumulative impacts resulting from the development.

The following information shall be submitted in plan form for the pre-developed and post-developed scenarios:



- flood profiles for the full range of events for total development including all structures and works;
- water surface contours;
- velocity vectors;
- velocity depth product contours; and,
- delineation of flood risk precincts relevant to individual floodplains.

Alternatively, the flood impact assessment can include flood level, velocity and hazard difference mapping that shows the increase in each of these flood characteristics due to the proposed development. These increases are to be considered and commented on in the context of the NSW Government's Flood Prone Land Policy.

Applicants should check with Council Officers to confirm the need for a specialist flood study. For smaller developments consideration may be given to the use of an existing flood study if available and suitable (*e.g. it contains sufficient local detail*), or otherwise a flood study is to be prepared. Where the controls for a particular development proposal require an assessment of structural soundness during potential floods, the following impacts must be addressed:

- hydrostatic pressure,
- hydrodynamic pressure,
- impact of debris, and
- buoyancy forces.

Alternatively, or together with a flood impact assessment, the applicant may be required to prepare a flood risk assessment for the proposed development. The assessment will be required to demonstrate that the full range of risks associated with flooding at the site have been considered and suitable measures proposed to adequately mitigate the risk.

7 References

1. Department of Environment and Climate Change (2007), 'Floodway definition – Floodplain Risk Management Guideline'.
2. Griffith City Council (2010), 'Griffith Aerodrome Overland Flow Flood Study' prepared by WMAwater.
3. Griffith City Council (2011), 'Griffith Aerodrome Overland Flow Floodplain Risk Management Study' prepared by WMAwater.
4. Griffith City Council (2006), 'Griffith Flood Study (Issue No. 3)', prepared by Patterson Britton & Partners.
5. Griffith Floodplain Risk Management Study and Draft Floodplain Risk Management Plan 2011, prepared by WorleyParsons Pty Ltd.
6. Griffith City Council (2002), 'Griffith Local Environmental Plan 2002'.
7. Griffith City Council (1996), 'Interim Development Order No. 1'.
8. Griffith City Council, Floor Levels Policy, CS-CP-318.



9. New South Wales Government (2005), *Floodplain Development Manual: the management of flood liable land*; ISBN 0 7347 5476 0.
10. Griffith CBD Catchment Overland Flow Flood Study (2012), prepared by WMAwater
11. Griffith Major Overland Flow Floodplain Risk Management Study and Plan for CBD Catchments (2013), prepared by WMA
12. Lake Wyangan Flood Study (2012), prepared by BMT WBM.
13. Land Wyangan (Draft) Floodplain Risk Management Study & Plan (2013), prepared by BMT WBM

Policy Number	Policy Title	Policy owner	Amended, No Change or Deleted
CS-CP-302	Advertising - Handbill Distribution - Local Policy	Sustainable Development	No change
CS-CP-303	Advertising - Sandwich Board Signs - Local Policy	Sustainable Development	No change
CS-CP-304	Roadside Stalls - Local Policy	Sustainable Development	No change
CS-CP-305	Advertising - Signs - Local Policy	Sustainable Development	No change
CS-CP-306	Vending Vehicles - Local Policy	Sustainable Development	No change
CS-CP-307	Conduct of Councillors & Staff in Assessing & Determining Development Applications - Local Policy	Sustainable Development	Amended – Move to Public Policies
CS-CP-308	Restricted Premises and Sex Services Premises - Local Policy	Sustainable Development	No change Changes made in the Council Meeting, see attachment
CS-CP-309	Frost Control Fan Policy - Local Policy	Sustainable Development	No change
CS-CP-310	Stormwater Drainage and Disposal - Local Policy	Sustainable Development	No change
CS-CP-311	Approvals - Fencing Adjoining Public Land - Local Policy	Sustainable Development	No change
CS-CP-312	Approvals - Noise Pollution - Loud Speakers - Local Policy	Sustainable Development	No change
CS-CP-313	Approvals - Noise Pollution - Open Air Concerts - Local Policy	Sustainable Development	To be deleted
CS-CP-315	Buildings - Awnings on Commercial Properties - Local Policy	Sustainable Development	No change
CS-CP-316	Buildings - Construction Near Water & Sewerage Assets - Local Policy	Utilities	No changes

CS-CP-317	Buildings - Distance from the Boundary - Local Policy	Sustainable Development	No change
CS-CP-318	Buildings - Floor Heights - Local Policy	Sustainable Development	No change
CS-CP-319	Buildings - Relocation - Local Policy	Sustainable Development	No change
CS-CP-321	Submissions Made Regarding Development & Activity Applications - Local Policy	Sustainable Development	No change – Move to Public Policies
CS-CP-401	Buildings - Engineer's Certificate - Local Policy	Sustainable Development	No change
CS-CP-402	Driveways - Maintenance and Width - Local Policy	Sustainable Development	No change
CS-CP-403	Flood Liable Lands Policy - Local Policy	Sustainable Development	Amended
CS-CP-406	Risk Profile and Assessment Criteria for Earth Dams used for Commercial Aquaculture Production in Griffith LGA - Local Policy	Sustainable Development	No change
EH-CP-202	Smoke Free Outdoor Areas - Local Policy	Sustainable Development	No change
EH-CP-801	Waste - Septic Tanks - Local Policy	Sustainable Development	No change
WO-CP-501	Footpaths - Construction of - Local Policy	Sustainable Development	No change
SD-CP-202	Solar Energy Farms and Battery Energy Storage Systems (BESS) Policy	Sustainable Development	No change
CS-CP-404	Onsite Detention Policy - Local Policy	Utilities	Subject of separate report
PG-CP-401	Tree Preservation Order - Local Policy	Infrastructure & Operations	Subject of separate report
PG-CP-402	Tree Policy - Local Policy	Infrastructure & Operations	Subject of separate report



Advertising – Handbill Distribution

CS-CP-302
(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	24 Apr 1990	00	24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To regulate the distribution of handbills in the public so as to minimise the public nuisance and avoid littering.

3 Policy Statement

- 3.1 Any person or organisation requiring to distribute handbills or advertisements in public must first obtain the approval of Council. Authority to determine such applications is delegated to the Director, Sustainable Development (or equivalent position) or their nominated delegate. It is to be a condition of any approval that the applicant accepts responsibility for the removal forthwith of any litter that may result.
- 3.2 The placing of pamphlets on the windscreens of vehicles is prohibited.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None



8 Directorate

Sustainable Development



Advertising – Sandwich Board Signs

CS-CP-303

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	5 Dec 2000	P79	5 Dec 2000
2	14 Jan 2003	25	14 Jan 2003
3	23 Apr 2004	281	23 Apr 2004
4	11 May 2010	142	11 May 2010
5	10 Sep 2013	286	10 Sep 2013
6	22 Aug 2017	17/205	22 Aug 2017
7	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

- To protect public safety in relation to objects on public footpaths and footways of public roads, in commercial and industrial zones.
- To establish standards for the size, quality and number of sandwich board signs.
- To define acceptable placements for sandwich board signs in public places.

Land to which this policy applies

This policy applies across the Griffith Local Government Area other than where Council Policy UD-CP-201 “Use of Council Footpaths” applies in parts of the Griffith CBD and parts of Yenda Town Centre.

3 Policy Statement

The Local Government Act 1993 Sections 158 and 159 establish guidelines for Council to prepare and adopt Local Approvals Policies. Such policies are to be placed on exhibition and submissions considered before adoption. Local Approvals Policies are available as public documents.

Structure of Local Policy

This policy includes:

1. Exemptions
2. Criteria for determining approvals
3. Operational policies



3.1 Exemptions

The placement of tourist promotion, event marketing or tourist feature displays which may be intermittent, placed on medians for periods of up to two weeks is exempt from this policy. Council's Director Sustainable Development (or equivalent position) or their nominated delegate is required to be advised of such placements at least seven (7) days prior to their placement.

Advertising Sandwich Board Signs of a temporary nature set up by Real Estate Agents for the purposes of advertising an open home or auction are exempt from the policy.

There are no other circumstances in which a person would be exempt from the necessity to obtain an approval of the Council for display of a sandwich board on a public footpath.

3.2 Determination Criteria

3.2.1 Statutory Requirements

All applications will be assessed and determined under the provisions of

- Local Government Act ,1993 (as amended)
- Environmental Planning and Assessment Act, 1979 (as amended)
- Environmental Planning and Assessment Regulation 2021 (as amended)
- Provisions for State and Environmental Planning (Exempt and Complying Development Codes) 2008
- Any LEP and DCPs that have been adopted by the Council
- The public interest and safety of the locality to traffic and pedestrians

3.2.2 Application

This policy will be applied to the display of Sandwich Board Signs, allowing placement on public footpaths across the Griffith Local Government Area other than where Council Policy "Use of Council Footpaths" (UD-CP-201) applies in parts of the Griffith CBD and parts of the Yenda Town Centre with the prior approval of Council and subject to an annual licence fee being paid.



3.2.3 Physical form

The maximum dimension of the sign shall not exceed 1m². The construction shall be of durable materials and type, able to be stabilised in inclement weather, have a professional presentation of wording and content, and be in clearly visible colours.

3.2.4 Siting

One (1) sandwich board may be placed directly outside that proprietor's shop and not outside any other adjacent shop frontage not conducted by the proprietor (except in arcade developments). A maximum number of two (2) sandwich boards may be placed adjacent to an arcade frontage by proprietors located within the arcade.

The siting of sandwich board signs shall not impede the pedestrian thoroughfare or be within 3 metres of any street furniture or licensed footpath activity. All sandwich board signs are to be located 1 metre off the street kerb, except in the circumstance where adequate justification is given for the other location.

At all times adequate pedestrian thoroughfare distance of 2.6 metres must be maintained.

A sandwich board sign or any form of advertising may not be permitted to be located on a public road median strip.

3.2.5 Indemnity

Public risk insurance liability policy shall be maintained by the proprietor to extend over the sandwich board sign located on Council's footpath, with a minimum public risk indemnity amount of \$20,000,000.

3.3 Operational Policies

3.3.1 Licensing

An annual approval (licence) is required to be obtained for each sandwich board sign that is displayed. A register of approved sandwich board signs shall be maintained by Council's Development Approvals Section.



3.3.2 Fee

An application fee including an annual licence fee is required to be paid. The fee will be set annually in accordance with Council's Revenue Policy and will be placed on exhibition as per the requirements of the Local Government Act, 1993.

An account for the renewal of sandwich board sign licences shall be forwarded to relevant proprietors by Council annually.

3.3.3 Non Complying Sandwich Board Signs

Council shall impound sandwich board signs located on footpaths, roads, and/or medians, where a request by Council's officers to remove a sign has been ignored, where it is unlicensed or non-complying with Council's policy concerning safety or obstruction.

3.3.4 Advertising on Vehicles

This policy does not permit the display of signage or advertising content upon vehicles registered or unregistered that are in breach of the Roads and Motor Traffic Act and Regulations.

3.3.5 Term

This policy remains in force for the term of Council's Office or as may be publicly amended.

4 Definitions

LEP – Local Environmental Plan
DCP – Development Control Plan

5 Exceptions

- a) The placement of tourist promotion, event marketing or tourist feature displays which may be intermittent, placed on medians for periods of up to two weeks is exempted from this policy. Council's Director Sustainable Development (or equivalent position) or their nominated delegate is required to be advised of such placements at least seven (7) days prior to their placement.



- b) Advertising Sandwich Board Signs of a temporary nature set up by Real Estate Agents for the purposes of advertising an open home or auction be exempt from the policy.

There are no other circumstances in which a person would be exempt from the necessity to obtain an approval of the Council for display of a sandwich board on a public footpath.

6 Legislation

Local Government Act 1993

7 Related Documents

None

8 Directorate

Sustainable Development



Roadside Stalls CS-CP-304 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	8 Nov 2005	444	8 Nov 2005
2	11 May 2010	0142	11 May 2010
3	13 Aug 2013	0255	13 Aug 2013
4	22 Aug 2017	17/205	22 Aug 2017
5	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

- To provide clear objectives and guidelines to enable the sale of farm produce from roadside stalls in accordance with the Griffith Local Environmental Plan 2014 (GLEP 2014); and
- To allow locally grown Griffith produce to be marketed from the property whilst ensuring that any potential hazards associated with this activity are minimised.

3 Policy Statement

3.1 Development Considerations

3.1.1 Zoning and Permissibility

- 3.1.1.1 Roadside stalls for the purpose of this policy must be permissible under the relevant zoning under GLEP 2014.
- 3.1.1.2 Roadside stalls are classified as exempt development and are permissible without development consent where they are located on land zoned RU1 Primary Production and RU4 Primary Production Small Lots under the provisions of the GLEP 2014 and that:
 - a) Any proposed structure meets the development standards set down in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008; and
 - b) The roadside stall does not have direct access to a classified road or a connecting road within 90m of a classified road.
- 3.1.1.3 Where the roadside stall is permissible with consent in another zone or that it does not meet the exempt provisions set out in



3.1.1.2 a development application must be submitted to Council for assessment and determination.

Note: Should the zoning of land change due to an LEP amendment or the like, each stall holder should refer to this policy to determine whether the roadside stall is permissible with or without development consent.

3.1.2 Dimensions of Stall

- 3.1.2.1 The number of roadside stalls permitted on each farm shall not exceed one (regardless of whether it has more than one road frontage or consists of more than one allotment).
- 3.1.2.2 The size of the roadside stall shall not exceed 40m² in floor area, 2.5m in height and a maximum width of 3m.

3.1.3 Produce

- 3.1.3.1 Only locally grown (unprocessed) produce may be sold from the roadside stall.

3.1.4 Health Requirements

- 3.1.4.1 The Food Safety Standards 3.2.2 requires a food business to notify its business information to the NSW Food Authority (prior to the food business commencing any food handling operations) at www.foodnotify.nsw.gov.au or the NSW Food Authority (fees apply).
- 3.1.4.2 The premises must comply with the Food Act 2003 and the Australian and New Zealand Food Safety Standards.
- 3.1.4.3 Annual inspections shall be carried out at the discretion of Council's Environmental Health Officer at a fee prescribed in Council's Revenue Policy.

3.1.5 Location

- 3.1.5.1 The roadside stall shall be located wholly within the subject property and not located within the road reserve.



3.1.6 Building Design

- 3.1.6.1 The design of the structure used for the roadside stall shall not detract from the character of the locality.
- 3.1.6.2 The roadside stall may be fixed or moveable. Where the building/structure is moveable, it shall be constructed in such a manner that it is stable in all weather conditions.
- 3.1.6.3 The roadside stall shall be constructed with good quality materials, painted or decorated in such a way that it is not offensive or detracts from the surrounding environment, nor unreasonably distractive for motorists using roadway(s) in the vicinity of the roadside stall; all to the discretion of Council's Director of Sustainable Development (or equivalent position) or their nominated delegate.
- 3.1.6.4 No lighting or illumination of the roadside stall is permitted.
- 3.1.6.5 No electricity is to be supplied to the roadside stall.

3.1.7 Vehicular Access and Parking

- 3.1.7.2 Entry/exit driveways, manoeuvring and parking areas are to be constructed of an all-weather gravel surface and shall be maintained for the life of the development.
- 3.1.7.3 Access to the roadside stall from a roadway shall be sited in a manner that enables motorists to safely enter and exit the premises in a forward direction.
- 3.1.7.4 Where separate entry/exit driveways are proposed, each driveway shall be signposted and a minimum of 4m in width. Where a combined entry/exit driveway is proposed the combined driveway shall be a minimum of 6m wide.

Note: Council approval is required for the construction of all new driveways.

- 3.1.7.5 A minimum of two parking spaces shall be provided wholly within the site to service the roadside stall.



- 3.1.7.6 A continuous separation (e.g.: landscaped/grassed nature strip) shall be provided between the site activities and the road frontage (excluding driveways).

A separation with a minimum depth of 3m from the site boundary (with no advertising signage or displays), is required.

3.1.8 Hours of Operation

- 3.1.8.1 The roadside stall shall only be permitted to operate during daylight hours only. Daylight hours are defined as the period between one hour after local sunrise and one hour before local sunset.

3.1.9 Security

- 3.1.9.1 Adequate arrangements shall be put in place to secure the roadside stall outside the hours of operation.

3.1.10 Advertising Signage

- 3.1.10.1 To maintain the rural character of the surrounding area, only one advertising sign is permitted;
- 3.1.10.2 A single, well designed advertising sign located within the property is deemed to provide effective identification of the roadside stall.
- 3.1.10.3 Advertising signage must meet the requirements of State Environmental Planning Policy 64 – Advertising and Signage and any Council Development Control Plans and/or policies relating to advertising signage.
- 3.1.10.4 Advertising signage shall not be located within the road reserve.
- 3.1.10.5 Free standing signs and sign on trees, electricity, telephone poles or other inappropriate structures shall not be permitted. Likewise, signs adversely affecting authorised traffic signs shall not be permitted.
- 3.1.10.6 No signs shall be illuminated, constructed from reflective materials or replicate/compromise authorised ~~RMS~~ **Transport for NSW (TfNSW)** traffic signs.
- 3.1.10.7 Advertising signage shall not exceed a total maximum area of 1.5m², and shall not extend above the height of the stall (2.5m).



3.1.10.8 A sign shall not display more than 60 characters (letters, digits or symbols) and not more than one logo.

3.1.10.9 Characters (letters, digits or symbols) shall have minimum dimensions of 150mm x 150mm and maximum dimensions of 350mm x 350mm.

3.1.10.10 Advertising signage and the surrounding vegetation shall be maintained in such a manner that it is clearly visible for approaching traffic during daylight hours.

Note: Native vegetation or roadside vegetation shall not be cleared without consent from Council and/or consent under the Native Vegetation Conservation Act 1997.

3.2 Development Applications

If development consent is required the following information (as a minimum) is required to be submitted in support of a development application to Council:

3.2.1 Statement of Environmental Effects (SEE) including:

- 3.2.1.1 Detailed site plan indicating layout and elevations of the proposed roadside stall. This includes dimensions and location of stall, site boundary, parking and access provisions (i.e.: entrance/exit access points, manoeuvring areas and number of parking spaces).
- 3.2.1.2 Type and quantity of goods for sale.
- 3.2.1.3 Hours of operation and days of trade.
- 3.2.1.4 Reasons for the proposed development.
- 3.2.1.5 Details of any works proposed for the construction or upgrading of the access, edge of pavement or any other structures within the road reserve.
- 3.2.1.6 Details of advertising signage including heights, width, materials, character size, method of attachment, and features of the display (i.e.: wording, colours and logos).



- 3.2.1.7 Hours of operation and length of time proposed (e.g.: two month seasonal stall only).

3.2.2 A development application for a roadside stall must also meet the following requirements:

- 3.2.2.1 Building works must comply with the Building Code of Australia.
- 3.2.2.2 Proposed roadside stalls that are located on a designated classified road must comply with State Environmental Planning Policy (Infrastructure) 2007 and ~~RMS TfNSW~~ requirements to ensure that road safety is maintained (i.e. the development must have an adequate driveway(s), parking areas and internal road design).

Note: Development applications for a roadside stall will be referred to the ~~RMS TfNSW~~ when the proposed development is on land that has direct vehicular or pedestrian access to:

- a) a classified road, or
- b) a road connecting with a classified road, if the access is within 90 metres (measured along the road alignment of the connecting road) of the alignment of the classified road.

A development application fee for a roadside stall shall be paid at the time of lodgement of the application, in accordance with Council's Revenue Policy.

- 3.2.2.3 The entry to the proposed development must have adequate sight distance (relative to the speed zone and landform) available to vehicles traveling along the through road to slow and turn into the development as well as permitting those vehicles leaving the site to have maximum visibility to turn out of the development.
- 3.2.2.4 Access is to be located so as to conform with sight distance requirements outlined in the Austroads 2008 Guide to Road Design.

Note: Any works associated with the design, construction and/or upgrading of an access require approval from Council and may require concurrence from the ~~RMS TfNSW~~.

4 Definitions



Classified roads are defined in SEPP (Infrastructure) 2007. For the purpose of this policy have been identified as follows:

- Main Road 80 East - Irrigation Way (Burley Griffin Way).
- Main Road 80 West – Kidman Way (Hillston Road)
- Main Road 321 South - Kidman Way (south of Griffith)
- Regional Road 321 North – Beelbanger-Rankins Springs Road
- Main Road 84 – Yenda Road
- Regional Road 254 – Whitton Road – Whitton Stock Route Road

Roadside stall has the same meaning set down in Griffith Local Environmental Plan 2014

5 Exceptions

None

6 Legislation

Environmental Planning & Assessment Act 1979
Local Government Act 1993

7 Related Documents

None

8 Directorate

Sustainable Development



Advertising – Signs CS-CP-305 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	13 Jul 1999	403	13 Jul 1999
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To protect public safety and safe-guard against unsightly signs.

3 Policy Statement

- 3.1 Council shall require permits for the erection of advertising structures and the fee for such permits shall be in accordance with Council's Revenue Policy.
- 3.2 Council shall impound advertising sign boards located on footpaths when a request by Council's authorised officer to remove such signs has been ignored.
- 3.3 Council shall not permit advertising signs upon the median strips in Banna Avenue.
- 3.4 Where a permit is used, the proponent is to hold a current minimum \$20 million public indemnity cover, indemnifying Council, in order to minimise Council's liability.

4 Definitions

None

5 Exceptions

None

6 Legislation

None



7 Related Documents

None

8 Directorate

Sustainable Development



Vending Vehicles CS-CP-306 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	10 Jan 2006	0006	10 Jan 2006
2	11 May 2010	0142	11 May 2010
3	8 Mar 2011	0063	8 Mar 2011
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	8 Nov 2022	22/291	8 Nov 2022

2 Policy Objective

To regulate mobile and standing vehicles that display and sell commodities on public or private land.

3 Policy Statement

Approval

- 3.1 An application for approval to operate a vending vehicle within the Griffith Local Government Area must be completed by the applicant and submitted to Griffith City Council for approval by the Director, Sustainable Development (or equivalent position) or their nominated delegate.
- 3.2 After the granting of the initial approval to operate a vending vehicle within the Griffith Local Government Area, subsequent approvals are to be renewed annually with Griffith City Council and will be subject to an application fee. This application should be lodged with Council at least one month prior to the expiry of the previous approval.
- 3.3 An approval to operate a vending vehicle includes approval under the provisions of Section 68 of the Local Government Act 1993 for the purpose of selling of commodities in a public place.
- 3.4 If the vehicle information provided with the initial application changes during the term of this approval, details of the change shall be advised in writing to Council within one week of the variation occurring.



- 3.5 Any vehicle and adjacent areas used for the purpose of displaying and selling commodities without the appropriate approval of Council, and/or not in accordance with this policy, or any licence or direction of Council, is prohibited.
- 3.6 A copy of the certificate of approval must be kept with the vehicle at all times and the certificate must be provided on request by an authorised Council Officer.

Inspection of Vehicle

- 3.7 The Council may require the vehicle to be made available for inspection at any reasonable time.

Hours of Operation

- 3.8 The hours of operation for the vehicle selling or displaying commodities are limited from 8.00am to 7.00pm daily during Daylight Saving period and from 8.00am to 6.00pm daily during other times of the year. In exceptional circumstances, hours of operation may be varied to the discretion of the Director, Sustainable Development (or equivalent position) or their nominated delegate.

Selling Condition

- 3.9 The vehicle must be in motion unless displaying or selling commodities. The vehicle shall not operate within 100 metres from any business or other premises, displaying or selling similar types of commodities, at the same time, unless it is a vending vehicle on public land with Council permission.

Vehicle Condition

- 3.10 All vehicles permitted under this policy shall be maintained in a clean and safe condition. Vehicles displaying or selling food are to comply with the Food Standards, Australian and New Zealand Food Safety Standards, Food Act 2003 and Roads and Maritime Services registration and rules.
- 3.11 The vending vehicle must not be used for sleeping purposes.
- 3.12 Employees' personal belongings, cleaning equipment, soiled equipment, waste and commodities kept in the vehicle are to be physically separated.

Waste Disposal

- 3.13 Suitable garbage receptacles with close-fitting lids must be provided in the vehicle.



- 3.14 When directed, a suitable receptacle must be provided outside the vehicle for placing litter.
- 3.15 All garbage must be removed daily or more frequently when the need arises.
- 3.16 Any waste must be transported to a place that can lawfully be used as a waste facility for that waste. A copy of an appropriate waste management plan must be provided to Council prior to approval.

Public Nuisance

- 3.17 The vehicle shall operate in accordance with the Local Government Act 1993, the Protection of the Environment Operations Act 1997 and such other legislation as may from time-to-time impinge upon the activities hereby approved.
- 3.18 The use of equipment to amplify sounds in or on any public road or public place is prohibited unless prior consent of the Council is obtained. Such applications may be approved with or without conditions.
- 3.19 Vehicles permitted to play amplified sounds shall not emit the amplified sounds whilst the vehicle is in motion.

Road Rules

- 3.20 Vehicles permitted under this policy shall not obstruct roadways or footpaths and shall not be driven or parked in such a way that is a hazard to other road users.
- 3.21 A vehicle permitted under this policy will not be exempt from any road rules, traffic and parking regulations or any similar legislation.
- 3.22 Vehicles permitted under this policy shall not be permitted to sell commodities in a demarcated School Zone.

Statutory Approvals

- 3.23 A vehicle permitted under this policy shall comply with all relevant Acts, Regulations and Council Policies and nothing herein shall be taken as the granting of consent under the Environmental Planning and Assessment Act 1979, particularly Subdivision 27A Mobile Food and Drink Outlets, State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.



Public Liability

- 3.24 The proprietor must provide Council with a copy of their current Public Liability Policy for not less than \$20 million dollars indemnifying Griffith City Council against any claims that arise from the operation of the vending vehicle.
- 3.25 The proprietor selling commodities to children must provide Council with a copy of their current Public Liability Policy for not less than \$20 million dollars indemnifying Griffith City Council against any claims that arise from the operation of the vending vehicle.

4 Definitions

Vending vehicle: Includes any mobile or stationary vehicle and any adjacent area reasonably used for the purpose of displaying and selling commodities; but excludes service vehicles such as mechanics, carpet cleaning services, gardening services and also excludes the delivery of pre-ordered commodities such as pre ordered meals.

5 Exceptions

None

6 Legislation

Section 356 of the Local Government Act 1993 (as amended) Local Government Act 1993
Protection of the Environment Operations Act 1997
Food Act 2003

7 Related Documents

None

8 Directorate

Sustainable Development



Conduct of Councillors & Staff in Assessing & Determining Development Applications CS-CP-307 (LOCAL PUBLIC POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	13/04/1999	206	13/04/1999
2	14/01/2003	25	14/01/2003
3	11/05/2010	0142	11/05/2010
4	22/08/2017	17/205	22/08/2017
5	23/08/2022	22/209	22/08/2022

2 Policy Objective

- To ensure that the public has confidence in the integrity of the assessment and determination procedures for development applications.
- To ensure that all applications are treated openly and fairly and that the relevant codes, statutes, regulations and policies are applied consistently and in a professional manner.
- To ensure a consistent decision making process that complies with council's long term strategies for the city.

3 Policy Statement

3.1 Role of Councillors

- To determine and review where appropriate the policies and codes of the council.
- To represent fairly the interests of residents and ratepayers, not just those that support a particular point of view.
- To transmit community concerns to appropriate and authorised council staff for professional advice and recommendations.
- To shield staff from the criticism surrounding council decisions.
- To explain council decisions clearly and unambiguously to all concerned community members.
- To not expect staff to interpret or support the councillor's political agenda or imperatives, nor to provide advice to justify a politically motivated decision.

3.2 Responsibility of Councillors

- To provide staff with the professional respect that their position deserves.
- To avoid any suspicion of attempting to pressure and/or influence staff in the fulfilment of their duties.
- To make decisions based only on the merit of the case.



- In instances where decisions are to be made which conflict with adopted policies or codes, to review the policies or codes to ascertain their ongoing appropriateness.
- To operate within council's Code of Conduct and relevant policies.
- To ensure that the actions of councillors do not unduly delay the decision making process.

3.3 Role of Staff

- To apply the codes, policies and regulations in a professional, consistent and impartial manner.
- To provide council with concise, clear and well written reports with advice that is appropriate, independent, non-political and technically and legally correct.
- To represent or assist to represent the council in the Land and Environment Court (NB this would not be expected in cases where staff recommendations have been negated).
- To provide appropriate advice and assistance to the councillors in their policy formulation role.

3.4 Responsibility of Staff

- To provide council with a preferred course of action based on the best professional analysis of the issues.
- To clearly explain where councillors have discretion to decide a matter (that is, on the planning merits of the case) and where there is no discretion (that is, where a matter is either legal or illegal).
- To advise council where improvements can be made to planning instruments.
- To ensure their work is free from bias and is untainted by corruption or conflict of interest.
- To work within their professional code of ethics, council's Code of Conduct and relevant policies.

3.5 Councillors' Interaction with Applicants and/or Objectors

Councillors, in dealing with applicants and/or objectors:

- (a) shall not play a role in the assessment or determination of applications submitted by relatives, business associates, close friends, employees, employers or other situations where the association is such that it could be perceived to influence the councillor's decision;
- (b) shall record all discussions relative to the application and shall disclose such contacts prior to playing any part in the assessment or determination of the application. All such disclosures are to be recorded;



- (c) shall submit any views expressed or questions asked by the applicant or objector to the relevant staff for technical assessment and advice, and
- (d) shall not in discussions with the applicant or objector make personal reflections or impute improper motives to other councillors or staff.

3.6 Staff Interaction with Applicants and/or Objectors

Staff, in dealing with applicants and/or objectors:

- (a) shall not play a role in the assessment or determination of applications submitted by relatives, business associates, close friends, employees, employers or other situations where the association is such that it could be perceived to influence the staff member's decision;
- (b) shall not in discussions with the applicant or objector make personal reflections or impute improper motives to councillors or other staff members;
- (c) shall clearly explain council's codes, regulations and policies without attempting to criticise such codes, regulations or policies;
- (d) shall seek to provide assistance as could reasonably be expected in the form of suggesting solutions and options available;
- (e) shall ensure that the information and assistance provided is consistent, professional and not influenced by personal opinions.

3.7 Determination of Application

- There shall be a clear delineation and understanding of what applications are to be processed under delegated authority and there should be no attempt by councillors to influence staff in their assessment of those applications falling within that category.
- All applications referred to the council or a committee for determination are to be accompanied by a report that:
 - is legally and technically correct;
 - is non-political and impartial;
 - informs the council/committee of the options available to them;
 - contains an appropriate recommendation based on the merits of the application,
 - explains the ramifications of the available options.
- Where the staff recommendation is negated, clear reasons for overturning the recommendation are to be recorded.
- The council or committee determining the application shall have the right to exclude a member from participating in the determination of an application when the council or the committee is of the opinion that the member's private or personal interests could be perceived to affect the impartial performance of the member in the determination of the application.



3.8 Sanctions

~~Where it would appear that there has been a breach of this Policy, such apparent breach is to be reported in open to the council. The councillor or staff member is to be advised as soon as practicable of the apparent breach and to be given the opportunity to respond in writing.~~

~~Council, having resolved that the councillor or staff member has failed to comply with this Policy can, by resolution:~~

- ~~• request a formal apology;~~
- ~~• counsel the person involved;~~
- ~~• reprimand the person involved;~~
- ~~• pass a sanction motion at the council meeting;~~
- ~~• make public disclosures of the inappropriate conduct;~~
- ~~• refer the matter to an appropriate investigative body if the matter is serious, and/or~~
- ~~• prosecute any breach of the law.~~

3.9 Other Policies

This policy is to be read in conjunction with other relevant policies adopted by the Griffith City Council.

3.10 Acknowledgment

Griffith City Council acknowledges the assistance provided by Stephen Harris of the University of NSW in the development of this policy.

4 Definitions

None

5 Exceptions

None

6 Legislation

None



7 Related Documents

None

8 Directorate

Sustainable Development



Restricted Premises & Sex Services Premises CS-CP-308 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	9 Jun 2009	163	9 Jun 2009
2	11 May 2010	0142	11 May 2010
3	13 Aug 2013	0255	13 Aug 2013
4	14 Nov 2017	17/297	14 Nov 2017
5	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

- To inform applicants and the community of the primary considerations for the location and establishment of restricted premises and sex services premises.
- To provide guidance for the assessment of restricted premises and sex services premises.
- To minimise potential social impact and nuisance associated with restricted premises and sex services premises.
- To establish local standards, acceptable to the community in general, for the location and establishment of restricted premises and sex services premises.

Land to Which This Policy Applies

This policy applies to all land within the Griffith City Council local government area.

3 Policy Statement

3.1 Locality

The establishment of new restricted premises and sex services premises, after the date of adoption of this policy, will only be considered in areas zoned IN1 General Industry in terms of the Griffith Local Environmental Plan 2002, and in no other zone.

No part of a restricted premises or sex services premises is to be located:

- within ~~200~~ 500 metres walking distance from any residential dwelling or residentially zoned land (excluding a bona fide caretakers residence on industrial zoned land); or
- within ~~200~~ 500 metres walking distance of any place of worship, school, community facility, child care centre, hospital, or any place likely to be visited by children for recreational or other pursuits; or in arcades or other thoroughfares open to the public or used by the public; or



- within ~~200~~ 500 metres walking distance from any other lawfully operating restricted premises or sex services premises.

3.2 Design and development controls

- No internal rooms or spaces of the restricted premises or sex services premises, other than an access corridor, are to be visible from a public place, street or adjoining premises.
- No part of a restricted premises, sex services premises, or the building in which it is situated, will be used as a dwelling unless separate access will be available to the dwelling.
- No more than one sign is to be erected or displayed in public view. Such a sign shall not exceed 600mm in height or width, not be neon illuminated and not flash. Signage may only display the name of the person who conducts the business, or the registered name of the business carried out on the premises; the words "RESTRICTED PREMISES" in capital letters, not more than 50 millimetres in height; or signage required by other legislation.
- No objects, products, or goods related to a restricted premises or sex services premises will be visible from outside the premises.

3.3 Notification and Consultation

In addition to the requirements of Council's relevant DCP, Council may notify any place of worship, school, community facility, child care centre, hospital, or any place likely to be visited by children for recreational or other pursuits – whether in a nearby location or not.

NSW Police, NSW Health, NSW Department of Community Services and NSW WorkCover are preferred agencies to be consulted during the assessment of any application for a restricted premises or sex services premises.

3.4 Additional requirements

In the case of applications involving restricted premises or sex services premises, Council may require a social impact assessment to be undertaken by a suitably qualified professional prior to making a determination.

In the case of applications involving restricted premises or sex services premises, Council may require a Management Plan prior to making a determination. Such a Plan of Management will demonstrate compliance with WorkCover NSW's Health and Safety Guidelines for Brothels (2001), NSW Crime Prevention through Environmental Design Guidelines (2001) and NSW Communicable Diseases Health and Safety Guidelines for Sex on Premises Venues (2002).

In the case of applications involving massage premises and services, Council may require additional information to ensure compliance with Section 16 of the Summary Offences Act 1988.



4 Definitions

Restricted Premises has the same meaning as in the Griffith Local Environmental Plan 2014; but, for the purpose of this policy, also means a building or place used or intended for use of a shop in which:

- any classified publications (other than unrestricted publications) within the meaning of the Classification (Publications, Films and Computer Games) Enforcement Act 1995 are available for sale or rental to the public, or
- a business is conducted involving, selling or disposing of products to which section 578E of the Crimes Act 1900 applies, or
- a business is conducted, an object of which is the display or exhibition of any article that is primarily concerned with sexual behaviour, but is not printed matter, but does not include a shop where the business of a newsagent, clothes or lingerie retailer, video/DVD hire, or registered pharmacist is genuinely carried on.

Sex Services Premises has the same meaning as in the Griffith Local Environmental Plan 2014, but, for the purpose of this policy, also includes massage related services involving sexual acts or sexual services ***Refer to Section 16 of the Summary Offences Act 1988 – accordingly it is an offence for a person being the owner, occupier; or manager; or person assisting in the management of a premises held out as being available for ‘massage, sauna baths, steam baths, facilities for physical exercise, taking of photographs or services of a like nature’ to knowingly suffer or permit sexual services,*** and premises or buildings used for the purpose of a strip club, swingers club, street-based sex workers, bondage and discipline parlours, and the like.

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Frost Control Fan CS-CP-309 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	17 Oct 2000	713	17 Oct 2000
2	11 May 2010	0142	11 May 2010
3	13 Aug 2013	0255	13 Aug 2013
4	22 Aug 2017	17/205	22 Aug 2017
5	24 Mar 2020	20/086	24 Mar 2020
6	8 Nov 2022	22/291	8 Nov 2022

2 Policy Objective

- To find an equitable balance between the use of frost control fans and the amenity of surrounding residents.
- To address the interface issues regarding the installation and operation of frost control fans.
- To set standards appropriate for Griffith City Council LGA for the installation and operation of frost control fans.
- To allow for sustainable agriculture and continued agricultural growth.

3 Policy Statement

3.1 Introduction

Griffith City Council supports the horticultural industry within the Murrumbidgee Irrigation Area.

The Frost Control Fan Policy seeks to provide guidelines for the installation of permanent fans and use of mobile fans to reduce the adverse impacts of frost on horticultural crops, while reducing the likelihood of land use conflict within the locality.

With increasing interest expressed by fruit and nut growers to install frost control fans or mobile wind machines in our rural areas, the need has arisen to revise the initial guidelines as population density increases, in an effort to maintain primary production and to reduce land use conflict.

3.2 What is a frost control fan?

The principal function of the frost control fan is to mix the warmer air from higher atmospheric inversion layers with the cold air layer closer to the ground, normally reducing the risk of frost damage to horticultural crops.



A frost control fan is a machine that consists typically of a tower approximately 10 - 11 metres in height with two (2) to five (5) blades at the top, each being 2.5 - 3 metres long. An engine is mounted at the base of the tower and is used to drive the blade via drive shafts and gearing. The head of the fan rotates through 360 degrees on a vertical axis with the blade spinning between 400 -750 revolutions per minute. The head of the fan takes approximately 5 – 7 minutes to complete one 360 degree rotation.

3.3 Are all Frost Control Fans covered by this Policy?

From the date of adoption, this policy will apply to the installation of permanent and to the use mobile Frost Control Fans in the Griffith City Council local government area, with regard to noise emission / compliance.

Permanent Frost Control Fans require development consent where the use of mobile fans do not require Council's approval however, they are included in this policy for equity purposes with regard to noise emission for compliance testing. For further information see FAQ sheet.

3.4 In what planning zones under the Griffith Local Environment Plan 2014 are frost control fans permitted?

Frost control fans will only be permitted with Council consent in rural zones where intensive plant agriculture (e.g. orchards and vineyards) are permissible without consent. The primary production zones are RU1 Primary Production, RU2 Rural Landscape, RU4 Primary Production Small Lots and RU6 Rural Transition under Griffith Local Environmental Plan 2014.

3.5 What application requirements will apply to the installation of permanent frost control fans?

When a development application is submitted to Council for the installation of permanent frost control fans, it must be accompanied by the following information:

- 1) Scaled site diagram showing the proposed location of the frost control fan/s particularly in relation to dwelling houses within 1000 metres of the fans.
- 2) Structural engineer's certification and drawings for the footings and structural steelwork. (This information may be provided by the manufacturer).
- 3) Details of crop/s to be protected by the frost control fans; e.g. citrus, almonds, grapes, and the like.



- 4) Details of the anticipated temperature at which damage occurs to the crop/s proposed to be protected and the anticipated temperature that the fans would come on to protect the crop/s from frost and cut out to cease fan operation.
- 5) The number of frosts on average per year, which currently affect the crop/s to be protected, according to currently available climatic data. For example, Bureau of Meteorology data, or site specific data collected for the past 3 or 4 seasons. For further information see FAQ sheet.
- 6) Applicants are referred to Section 4.15 of the Environmental Planning and Assessment Act, 1979 to address its provisions in their statement of environmental effects, including the provisions of environmental planning instruments, development control plan, the likely impacts of the development and other relevant matters associated with their proposal.
- 7) An acoustic report, prepared by a suitably qualified acoustical consultant, is to be submitted with the application documentation, modelling the extent of impact of the proposed frost control fans upon surrounding non-associated dwellings, with all proposed and existing fans on the farm (or within the same ownership on adjoining or adjacent lands) operating simultaneously.

The assessment model should be based upon manufacturer's sound level data, a copy of which is to be provided with the application. A map should be included in the report with the projected extent of the modelled 55 dB(A) and 45 dB(A) sound level 'contours'.

Further, the report should provide a clear description of the parameters and atmospheric conditions upon which the modelling is premised (e.g. terrain - actual or theoretical, wind speed, temperature, inversion layer present, local known reflective surfaces such as Lake Wyangan, and the like).

All noise assessment should be undertaken in accordance with AS 1055-2018 Acoustics – Description and Measurement of Environmental Noise and AS/NZ IEC 61672.1:2019 Electroacoustics – Sound Meter Levels Part 1 Specifications.

- 8) In relation to the manufacturers' sound power level data, the LAeq measurements must have been taken over a period of 15 minutes, and over a range of distances from 10 metres to 500 metres from the frost control fan. These manufactures' readings must be included in the information submitted with the Development Application.



- 9) If there are no non-associated dwellings within 1000 metres of the proposed frost control fans, the acoustic modelling report will not be required.
- 10) Notwithstanding point 9 above, if there are other permanent frost control fans within 1000 metres of the proposed frost control fans, the accumulated noise may impact upon surrounding non-associated dwellings, and an acoustic report will be required, taking into consideration the cumulative amenity impact of all of the fans, including those on the site.
- 11) The acoustic report should demonstrate how compliance will be achieved with the following criteria, for the closest non-associated dwelling outside the subject site or ownership, on a property not associated with the land over which the application is made, based upon zone of that land adjacent to the application property.

The following criteria apply to existing adjacent land use zones for the cumulative operation of all fans:

Location of affected residence	Outdoor Criteria (L _{Aeq} 15 min)	Indoor Criteria (L _{Aeq} 15 min)
Noise Sensitive Zone	45 dB(A) (max)	25 dB(A) (max)
Non-noise Sensitive Zone	55 dB(A) (max)	35 dB(A) (max)

- 12) If the indoor criteria (assuming all windows closed) can be met through the provision of noise attenuation measures at the closest non-associated dwelling rather than the external noise criteria, compliance will be determined at Council's discretion. Internal criteria can also be achieved through the installation of double glazing, and insulation of bedrooms for the dwelling for example.

Note:

1. A noise sensitive zone is a land use zone adjacent to the frost fan property, primarily meant for noise sensitive land uses typically meant for residential development under Griffith Local Environmental Plan, 2014. The noise sensitive zones are R1 General Residential, R5 Large Lot Residential and RU5 Village Zone, along with E4 Environmental Living Zone.
2. A non-noise sensitive zone is a land use zone adjacent to the frost fan property, primarily meant for primary production under the Griffith Local Environmental Plan, 2014, being RU1 Primary Production, RU2 Rural Landscape, RU4 Primary Production Small Lots RU6 Rural Transition.
3. Other non-noise sensitive land use zones include Environmental Protection Zones (e.g. E2 Environmental Conservation, E3 Environmental Management)



and Industrial Zones (e.g. Industrial General) where existing non-associated dwellings may be located adjacent to primary production lands.

4. Manufacturers' sound power level data must not just be based on the sound power output at 300 metres only, but readings taken at a range of distances & provided to Council.
5. Note that Council will retain all submitted acoustic reports, which will be made available upon request, for an application within 1000 metres of another property boundary, containing frost control fans.

3.6 What standards will apply to the operation of all frost control fans?

Once permanent frost control fans have been approved by Council, they must operate under the following conditions:

1. The frost control fans must have an auto-ignition thermostatic control that is set at all times to a temperature appropriate to the crop being protected, with an anemometer set to shut down the fan operation when wind speeds exceed 10km per hour.
2. The driving engine for the frost control fan must be housed in a noise attenuating housing with an integrated acoustic muffler.
3. As an initial compliance check, noise levels are to be taken following the installation of approved permanent frost control fans. This will be imposed as a condition of consent to ensure that the installed fans do actually achieve the applicant's stated decibel level. The compliance check should be conducted during the atmospheric conditions under which the fans are intended to operate (i.e. during a frost event). Compliance acoustic reports will be undertaken by a suitably qualified acoustical consultant, at the cost of the owner of the frost control fans.
4. The minimum sound data collection for a compliance check should be taken at a range of distances from 10m to 500m from the frost control fans. Further the sound data collection should also be taken at a distance of two to five (2 - 5) metres from a bedroom of the closest non-associated dwelling to the fans. Both data sets should be recorded for a minimum of 15 minutes (or two full revolutions). The resultant compliance report is to be provided to Council to complete the condition of consent, permitting Council to be satisfied that compliance has been achieved, or to advise that amelioration measures need to be taken to bring the fans into compliance.



5. Whilst all frost control fans are in operation, the noise level measured at a distance of 4 metres from any bedroom window of a non-associated dwelling situated on an adjacent property to that containing the frost control fans, must not exceed the outdoor or indoor limit as listed below:

Location of affected residence	Outdoor Criteria (L _{Aeq} 15 min) +2dB(A) considered compliant	Indoor Criteria (L _{Aeq} 15 min) +2dB(A) considered compliant
Noise Sensitive Zone	45 dB(A) (max)	25 dB(A) (max)
Non-noise Sensitive Zone	55 dB(A) (max)	35 dB(A) (max)

6. Compliance checks may be requested at any time, should official complaints be received by Council and there is doubt as to whether the subject frost control fans are operating in accordance with the development consent or this policy in the case of a mobile frost fan. Compliance acoustic reports will be undertaken by a suitably qualified acoustical consultant, at the cost of the fan operator.
7. Post installation noise compliance testing is to be in accordance with relevant Australian Standards, including but not limited to, AS 1055-2018 Acoustics – Description and Measurement of Environmental Noise and AS/NZ IEC 61672.1:2019 Electroacoustics – Sound Meter Levels Part 1 Specifications.
8. If, during post installation compliance testing, when measured in an approved manner, the noise from frost control fans is within 2 dB(A) of the limits listed within this Section, the frost control fans will be deemed to be in compliance.
9. The noise limits contained in this Section apply to the noise from all frost fans on the land under investigation, operating simultaneously; i.e. land over which frost fans have been approved, or lands in the same ownership which contain existing frost fans.
10. A Noise Management Plan should be prepared and provided to adjoining and adjacent non-associated residents within 1000m of the property where the frost fans are installed. This plan at a minimum should provide owner/farm manager contact numbers and emails, complaints procedure, advice on contact prior to impending frost and operation of fans and the like and potential noise mitigation measures to resolve complaints.

Note:

1. For a definition of noise sensitive and non-noise sensitive zones, see Notes 1 & 2 of Section 3.5 of this Policy.



2. Indoor noise levels are to be measured from the inside of a bedroom room of a residence (with all windows closed) not being on the same property as the subject frost control fans.
3. When a noise level check is carried out, the measurement period must be for at least 15 minutes.
4. All noise measurements are to be carried out by either a qualified noise control officer (as authorised under the POEO Act) or a suitably qualified acoustical consultant.

3.7 Can adjacent land alter from a non-noise sensitive zone to noise sensitive?

Council may rezone land which alters the type of the land uses within that new zone so that it becomes a noise sensitive zone. Council may consider changes to zones through a strategic land use strategy, though rezoning may also occur through a site specific planning proposal where Council will carefully consider the appropriateness of the change in predominant land use given the nature of the surrounding land.

3.8 Do the noise criteria apply to other development?

In the circumstance where land to be developed (e.g. subdivided or new dwellings constructed) is within 1,000 metres of existing and / or approved (but not yet installed) frost control fans, the future developer of the land subject to the rezoning or development application, will be responsible for addressing the issue of compliance with this policy.

This may be achieved by doing the following:

- a) The provision of buffers to limit the location of future dwelling houses in relation to their proximity to the existing frost control fans; and / or,
- b) Constructing dwellings to achieve the relevant indoor criterion for the land use zone within which the developed property is located; and / or
- c) At the time of subdivision of that land, Council may impose a condition for the creation of a restriction on the title of the proposed lots, requiring certain noise attenuation measures to be incorporated into the design and construction of any proposed dwelling in that subdivision to enable the indoor criteria to be achieved.



3.9 What happens if complaints are received about an existing frost control fan?

1. In the first instance, a resident should make contact with the land owner or their nominated contact that the fan operation is of concern or disturbing them. The land owner / operator shall prepare a noise management plan under the development consent and will provide it to non-associated residents within the immediate vicinity (e.g. up to 1000 metres) of the property containing the frost fans to encourage dialogue in order to reduce the incidence of complaint and to aid conflict resolution.
2. The noise management plan should include, but not be limited to, contact telephone number of farm manager or land owner, after hour contact details, email address and the like, along with likely times of operation, permitted noise levels, a procedure for providing adjacent non-associated residents with advice on impending fan operation (e.g. 24 hour notice), complaint handling, and potential noise mitigation measures.
3. The noise management plan should be provided to Council for reference and inclusion in the development application / property file records.
4. In the event of non-compliance with the Noise Management Plan, Council will endeavour to establish a dialogue between the affected resident and the owner of the frost control fans, to raise the issues and to try and find possible resolutions.
5. Should any dialogues/negotiations fail, Council will re-assess the subject frost control fan against the requirements of this policy and any associated development consent.
6. Where complaints are received, the complainant should be prepared to allow Council's Officers or the proponent's acoustical consultant reasonable access to their property for the purpose of measuring the sound from the frost control fan if it is deemed necessary, during normal operation atmospheric conditions (i.e. during a frost when the fans are operating, which could be during the night or early hours of the morning). Council may seek to install a noise logger on the complaint's property for an extended period of time to record sound data for evaluation purposes.
7. Should Council receive a complaint concerning the operation of frost control fans, then noise level readings must be taken over at least three consecutive 15 minute (or two full revolutions) periods at 4 metres from any bedroom wall in the non-associated dwelling house the subject of the complaint. The noise level set for the frost control fans must be exceeded on more than two nights within a 60 day



period before Council will notify the operator of the frost control fan that action may need to be taken to ensure the fan operates within its consent.

8. If the frost control fan and its operation comply with its development consent and/or this policy, no further action will be taken. Should the subject frost control fans not be complying, further action will be considered. Where the noise limits are not met, the frequency of usage is a consideration in deciding what action to take. The level of noise exceedance will also be taken into consideration.

Note:

When noise measurements are to be taken, the following points will apply:

1. The sound level meter must be set to measure fast response A-weighted sound pressure levels and the levels must be measured in terms of the equivalent continuous sound level (Leq) metric and the duration of the measurements must be no less than 15 minutes or two full revolutions of the frost fan gear head.
2. Noise measuring instruments must be equivalent to Type 2 (or better) as defined in Australian Standard 1259 "Sound Level Meters", Parts 1 and 2. The instrument is to be calibrated prior to use.
3. Apart from the provisions already contained in this policy, noise measurements must be conducted in accordance with Australian Standard 2659, "Guide to the use of Sound-measuring Equipment", Parts 1 and 2.

4 Definitions

Noise sensitive zone is a land use zone adjacent to the frost fan property, primarily meant for noise sensitive land uses, typically meant for residential development under Griffith Local Environmental Plan, 2014.

Non-noise sensitive zone is a land use zone adjacent to the frost fan property, primarily meant for primary production or other general development under the Griffith Local Environmental Plan, 2014, and may include rural, some environmental protection and industrial zones.

Non-associated dwelling is a dwelling not located on the same land as the proposed / approved / existing frost fans, and in separate ownership to those lands.



5 Exceptions

None

6 Legislation

- Environmental Planning & Assessment Act 1979
- Protection of the Environment Operations Act, 1997
- Griffith Local Environmental Plan, 2014

7 Related Documents

- Sumar Produce Pty Ltd v Griffith City Council [2000] NSWLEC 104 (7 June 2000)
- Sumar Produce Pty Ltd v Griffith City Council [2000] NSWLEC 72 (11 April 2000)
- Sumar Produce Pty Ltd v Griffith City Council [2000] NSWLEC 27 (15 February 2000)
- NSW Environment Protection Agency Noise Guide for Local Government
- Griffith City Council Frost Control Fan Policy Frequently Asked Questions Addendum, available on Council's website
- AS 1055-2018 Acoustics – Description and measurement of environmental noise
- AS/NZ IEC 61672.1:2019 Electroacoustics – Sound meter levels Part 1 Specifications

8 Directorate

Sustainable Development



Storm Water Drainage & Disposal

CS-CP- 310
(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	26 May 1990	C540	26 May 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022
7	22 Oct 2024	24/265	22 Oct 2024

2 Policy Objective

To ensure development takes place which does not detrimentally affect the amenity of the locality as it relates to adequate disposal of drainage and to prioritise methods of stormwater disposal. This is to include limitation of peak flow throughout the catchment for the critical storm event by means of On-Site Detention (OSD).

3 Policy Statement

- 3.1 For development proposals where drainage cannot be satisfactorily disposed of to the street kerb and gutter and therefore is directed through adjoining properties, an easement is required. The applicant shall arrange to create the easement and install the necessary drainage system prior to the finalisation of subdivision or building works. On-Site detention is to comply with Council's On-Site Detention Policy. Any existing obligation to provide and maintain an OSD system will be found in the development consent applicable to the property or on the property title itself.
- 3.2 The following is the order of priority for the disposal of stormwater from a property:
- (i) Stormwater is to be disposed of by piping to Council's stormwater system
 - (ii) Pipe stormwater to Council's stormwater system via adjoining property easement, or owner's approval;
 - (iii) Install a stormwater pit and pump system approved by Council.

It is necessary for the developer / land owner to explore and satisfy the above options in the priority order listed. Justification for the option chosen is to be submitted to Council in writing for approval prior to commencement of construction and or installation.



Stormwater pump out systems are not encouraged by Council and will only be considered as a last resort option for any development. Where a pump system is proposed the following criteria will apply:

- In the event of pump failure, an overland flowpath/spillway for stormwater is to be provided to the street which is to be lower than the floor levels of habitable rooms (as defined in the Building Code of Australia). Boundary fencing of the site is to be waterproofed to Council's satisfaction, to the height of the overland flowpath/spillway to ensure neighbouring properties are not impacted. Colorbond/timber boundary fences etc are not considered to be water proof and therefore any build-up of water on boundary fences are to be diverted to Council's satisfaction such as a concrete hobb/retaining wall.
- Pump lines must terminate within the property boundary to a stilling pit from which drainage is by gravity to Council's Stormwater System.
- An audible alarm and flashing light are to be installed to signal during pump failure.
- An electrical point is to be installed, providing a power inlet for a petrol/diesel generator connection to operate the pump during power failure.
- A Restriction to User in accordance with Section 88E of the Conveyancing Act is to be created for the subject property detailing the ongoing operation procedure, maintenance and ownership of the pump system.

No structure/s shall be permitted to be constructed over stormwater infrastructure. This includes all pits, pipes, sumps and overland flow paths. Where drainage easements are in place no structure/s shall be located within the drainage easement. Interallotment drainage systems are to remain the responsibility of the property owners and not Council. Any maintenance of the interallotment drainage systems shall be the responsibility of the property owners.

4 Definitions

OSD – On-Site Detention

5 Exceptions

None

6 Legislation

None



7 Related Documents

On-Site Detention Policy – CS-CP-404

8 Directorate

Sustainable Development



Approvals – Fencing Adjoining Public Land CS-CP-311 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	23 Nov 1993	C725	23 Nov 1993
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To establish guidelines for the erection of fences adjoining open space areas.

To enhance the outlook from properties adjoining areas of open space and provide casual surveillance of these areas, whilst ensuring an appropriate level of privacy for those living on the adjoining properties.

3 Policy Statement

- 3.1 All fences shall be applied for and constructed according to the requirements of the relevant Development Control Plan, unless exempted by another environmental planning instrument such as State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
- 3.2 Council does not contribute towards the cost of the erection of fences where properties are situated adjacent to walkways, parks, etc.
- 3.3 Access from adjoining private property to public open space areas should be via approved pathways and all gates leading onto public open space should open inward.
- 3.4 Footings are to the fence to be contained within the confines of the allotment.

4 Guidelines

Applications must comply with the following:

- 4.1 Fencing to be along common boundaries of public open space with preferred design being visually permeable or 'open in nature';
- 4.2 The fence must be constructed from materials which provide privacy and blend with or enhance the streetscape of the area, or the adjoining open space;
- 4.3 All work is to be carried out in a competent and workmanlike manner;



- 4.4 Height of the fence is to be a maximum of 2 metres, a height exceeding this measurement will require specific approval from Council; and
- 4.5 The fence is to be located so as to conform with sight distance requirements outlined in the Austroads 2008 Guide to Road Design.

5 Definitions

None

6 Exceptions

None

7 Legislation

None

8 Related Documents

None

9 Directorate

Sustainable Development



Approvals – Noise Pollution – Loud Speakers CS-CP- 312 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	-	Before 24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	14 Mar 2006	92	14 Mar 2006
4	11 May 2010	142	11 May 2010
5	13 Aug 2013	0255	13 Aug 2013
6	22 Aug 2017	17/205	22 Aug 2017
7	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To restrict the public nuisance caused by the use of loud speakers in public places.

3 Policy Statement

No person shall without prior consent obtained from Council, use or permit to be used any equipment to amplify sounds in or on any public road or public place. Such applications may be approved with or without conditions.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Approvals – Noise Pollution – Open Air Concerts CS-CP- 313 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	18 Jun 1996	388	18 Jun 1996
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To preserve the amenity of closely settled areas.

3 Policy Statement

The staging of open air rock concerts shall not be permitted unless prior approval is obtained from the Council.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Buildings – Awnings on Commercial Properties CS-CP-315 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	-	Before 24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To provide protection for patrons and uniformity with the existing buildings.

3 Policy Statement

Council may require the erection of awnings to new buildings or to an extension to the front boundary of an existing building, or alterations to the frontage of an existing building located within all commercial and retail zoning within the Council's area. This policy is to ensure local streetscape character is preserved, whilst balancing on-going risks to Council and the public of awnings over footpaths.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None



8 Directorate

Sustainable Development



Buildings – Construction Near Water & Sewerage Assets CS-CP- 316

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	24 Apr 1990	0	24 Apr 1990
2	22 Dec 1992	C873	22 Dec 1992
3	14 Jan 2003	25	14 Jan 2003
4	11 May 2010	0142	11 May 2010
5	13 Aug 2013	0255	13 Aug 2013
6	10 Dec 2013	0408	10 Dec 2013
7	26 Aug 2014	0267	26 Aug 2014
8	22 Aug 2017	17/205	22 Aug 2017
9	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To protect the Council's interest should problems arise following the construction or placement of a building or structure over or within the zone of influence of a Council water and sewerage asset.

3 Policy Statement

Council may allow modifications to or construction over or near its water or sewerage assets where it has been determined that the block is restricted by unusual site constraints which would impact normal development. Construction over or near a water or sewerage asset must be considered as a last resort.

The following must be considered in the following order of priority when designing a structure near a Council asset:

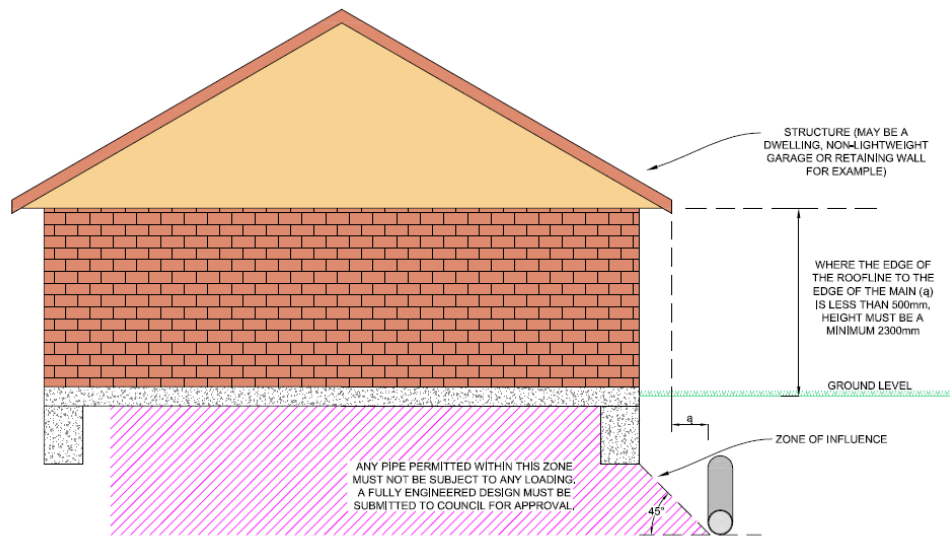
- Option 1: Relocation of the structure;
- Option 2: Relocation of the Council asset;
- Option 3: Building over / near the asset.

Where options 1 and 2 have been exhausted and option 3 is the only remaining alternative, the following conditions apply:

- 1) Property owners are required to indemnify Council and create an easement or caveat in favour of Council.



- 2) A Condition Assessment is to be conducted on Council's asset (including CCTV footage for Council's gravity sewer infrastructure). The Condition Assessment is to be conducted at the property owner's expense and is to be submitted to Council for approval prior to any construction works commencing onsite.
- 3) Council may require the asset/s to be renewed and the renewal to be approved by Council prior to any construction works commencing at the property owners expense.
- 4) All structures, except inground swimming pools (refer clause 4 for inground swimming pools), may be constructed near an asset. The following conditions shall apply:
 - a) The property owner must engage a suitably qualified and experienced Engineer for a design for approval from Council.
 - b) No loading from the structure shall be exerted within the zone of influence and the invert of the asset. Refer to Fig. 1.
 - c) No piercing is permitted within 1 metre of the main. This is subject to change by Council for deep sewer mains.
 - d) Where the edge of the Council asset to the edge of the roofline is less than 500mm, the height of the roof must be at least 2300mm. Refer to Fig. 1.



**FIG. 1 - ZONES REQUIRING ENGINEERED DESIGN -
ALL STRUCTURES EXCEPT SWIMMING POOLS**

- e) The applicant is responsible for arranging to have Council's asset accurately located onsite. This can be achieved by making a formal application to Council's Water & Sewer Department through Council's Customer Service Department. Where no Council record is available for the location of services, all costs are to be borne by the applicant.

An inground swimming pool is not to be constructed within the zone of influence from the top of the pool unless engineering design and calculations completed by a suitably qualified Structural Engineer are submitted to Council demonstrating that the inground pool will not exert loading on Council's asset. Refer to Fig. 2.

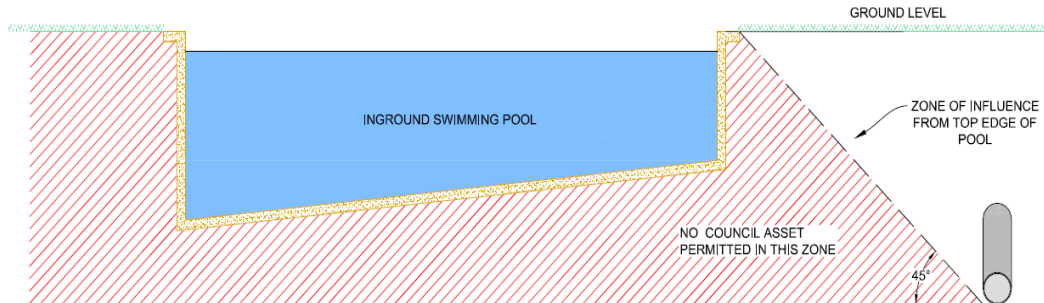


FIG. 2 - PROHIBITED ZONES - INGROUND SWIMMING POOLS

At the request of Council, the land owner is to completely drain all the water from the inground pool so as to reduce the loading on soil surrounding the sewerage main. The land owner is responsible for all costs associated with draining and refilling the pool once Council has completed any required works to the sewerage asset.

- 5) Lightweight structures are permitted to be constructed over an asset providing that there is no less than 600mm cover over the asset. Refer to Fig. 3.

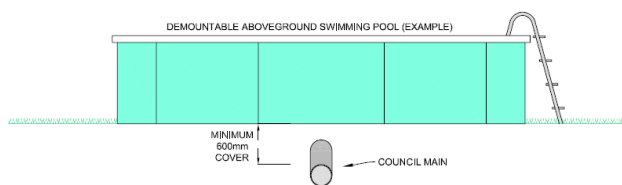
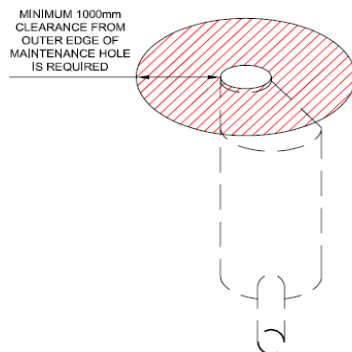


FIG. 3 - LIGHTWEIGHT STRUCTURES



- 6) A minimum 1 metre clearance is required from the outer edge of the top of a gravity sewer maintenance hole. Refer to Fig. 4



**FIG.4 - MINIMUM CLEARANCES -
SEWER MAINTENANCE HOLES**

- 7) A minimum 1 metre clearance is required around Council's maintenance responsibilities for a sewer property connection. The applicant is responsible for arranging to have the sewer property connection accurately located onsite. This can be achieved by making a formal application to Council's Water & Sewer Department through Council's Customer Service Department. Refer to Fig. 5 and the policy 'Council Responsibility – Water and Sewerage Services'.

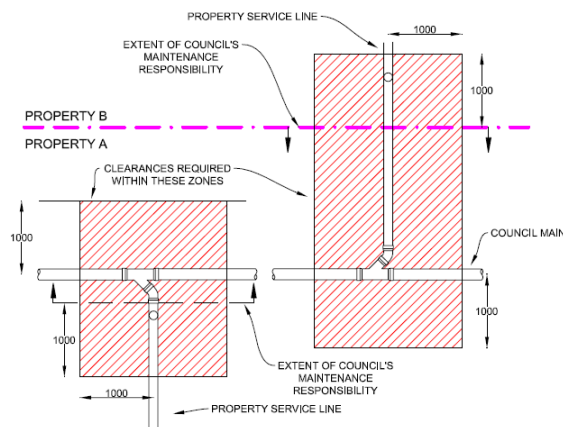


FIG 5 - MINIMUM CLEARANCES - GRAVITY SEWER CONNECTIONS
(ALSO APPLIES TO PRESSURE SEWER CONNECTIONS)

- 8) Construction must not cover a length greater than 10 metres of a gravity sewerage main. This may be extended up to a maximum of 80m when maintenance holes placed immediately either side of the structure outside the structures zone of influence. Refer to Fig. 6.

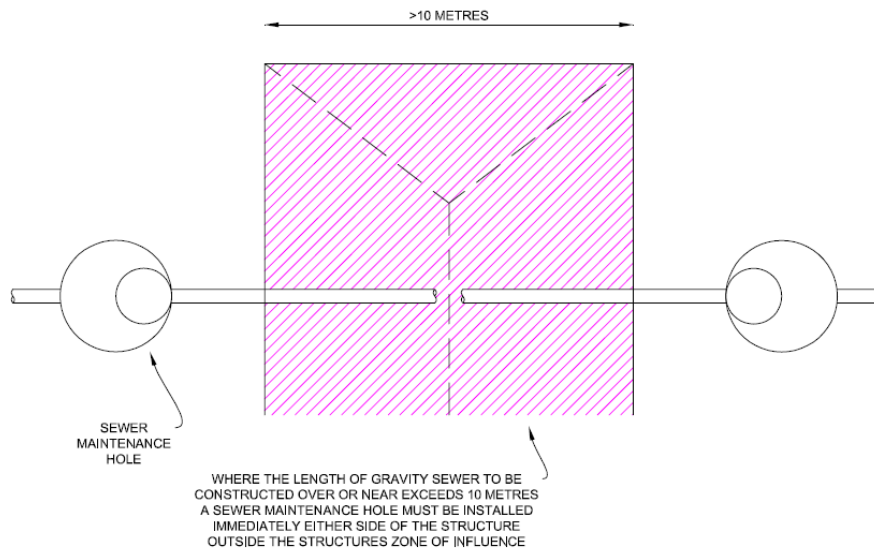


FIG 6 - STRUCTURES OVER/NEAR A GRAVITY SEWER MAIN EXCEEDING 10 METRES

9) Concrete encasing will not be considered.

10) Where concrete slabs are constructed over or near an asset, a full depth joint in the concrete must be included 1 metre either side of the asset. This is subject to change by Council subject to the depth of Council's sewer main. That is, deep sewer mains will require full depth joints in concrete being greater than 1m either side of the sewer main.

Any damage to a water or sewerage asset is to be promptly reported to Council. The costs for repairs shall be responsibility of the property owner or the negligent party.

Where Council is aware of future expansion of its water and sewerage services, the property affected must take into consideration all relevant matters mentioned above when planning new developments.

4 Definitions

Water or sewerage asset:

Infrastructure concerned with the supply of water and sewerage services, owned and maintained by Council. Examples are: gravity sewer mains, sewer maintenance holes, pressure sewerage mains and water mains and associated fittings.



Structure:

A building that is unable to be removed without the need for total or partial demolition. This may be a residence, non-lightweight garage or shed or a retaining wall.

Light weight building or structure:

Includes structures such as demountable aboveground swimming pools and rainwater tanks that are able to be removed via manual handling and buildings up to 60m² in floor area constructed as portal frame or similar with bolted base connections, able to be removed using machinery without the need for partial or total demolition.

CCTV:

Closed Circuit Television.

5 Exceptions

Any proposed variations to this policy will be considered on its merits following receipt of a formal written application and justification.

6 Legislation

Local Government Act 1993 – Section 59A

Local Government (General) Regulation, 2021, Reg. 18-23

7 Related Documents

None

8 Directorate

Utilities



Buildings – Distance from the Boundary CS-CP-317 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	0	Before 24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To protect the interests of all parties when buildings are being constructed in proximity to property boundaries.

3 Policy Statement

- 3.1 Where a building is proposed to be located closer to a property boundary than 1.5 times the setback required by the deemed to satisfy conditions of the Building Code of Australia, a report prepared by a registered surveyor is to be submitted to Council verifying the location of the building prior to work proceeding past floor level.
- 3.2 Notwithstanding point 3.1, Building Certification Officers may condition a Development Consent to require a survey report at any stage for any development. (Note: verification of a building location may be required for circumstances other than boundary clearance eg: proximity to a services main or adjoining building).

4 Definitions

None

5 Exceptions

None

6 Legislation

None



7 Related Documents

None

8 Directorate

Sustainable Development



Buildings – Floor Heights CS-CP- 318 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	-	Before 24 Apr 1990
2	23 Oct 1990	C911	23 Oct 1990
3	27 Jun 1991	C332	27 Jun 1991
4	13 Sep 1994	759	13 Sep 1994
5	19 Mar 1996	192	19 Mar 1996
6	14 Jan 2003	25	14 Jan 2003
7	11 May 2010	0142	11 May 2010
8	13 Aug 2013	0255	13 Aug 2013
9	22 Aug 2017	17/205	22 Aug 2017
10	23 Aug 2022	22/209	23 Aug 2022
11	28 Nov 2023	23/277	28 Nov 2023

2 Policy Objective

The objectives of this policy are:

- To ensure that habitable buildings proposed on flood liable lands are constructed to avoid inundation of water or flood damage and to ensure an acceptable level of health and amenity to occupants.
- To ensure that habitable structures not located within mapped flood liable lands comply with the provisions of the National Construction Code.

3 Policy Statement

The floor heights for building approvals in the Council area shall be as follows:

3.1 Buildings

(i) Where Hydrological Studies Are Not Available

A minimum floor height above existing ground level of 410 mm is required for habitable rooms. The 410 mm floor height is to be measured from the highest point of the surrounding ground level relative to the building platform. Where alternate floor heights are proposed, the floor heights are to be justified by the submission of hydraulic drainage design and calculations to suit localised flooding and stormwater flows. The design must take into consideration diversion and/or catchment of stormwater to ensure flows are not directed towards the building and/or neighbouring allotments. A qualified Civil Engineer with experience in Hydraulic Analysis shall design and certify the drainage design. The consultant must sign off



all drawings and calculations and provide details of Professional Indemnity insurance.

(ii) Where Hydrological Studies Are Available

Floor levels shall be determined from Council approved flood studies or flood impact assessments specific to the site.

(iii) Sloped Sites

Section 3.1(i) and 3.1(ii) shall apply.

In addition to Section 3.1(i), the 410mm floor height is to be measured from the highest point of the surrounding ground level relative to the building platform.

In addition to Section 3.1(ii), design and documentation is to be submitted justifying that localised flooding does not impact on the residential building.

Where natural surface levels are to be altered, the floor heights are to be justified by the submission of hydraulic drainage design and calculations to suit localised flooding and stormwater flows. The design must take into consideration diversion and/or catchment of stormwater to ensure flows are not directed towards the building and/or neighbouring allotments. A qualified Civil Engineer with experience in Hydraulic Analysis shall design and certify the drainage design. The consultant must sign off all drawings and calculations and provide details of Professional Indemnity insurance.

(iv) Extensions / Additions

Where an allotment is identified as flood liable, extensions shall be in accordance with the Griffith Flood Liable Lands Policy.

Extensions on allotments which are not identified as flood liable are permitted to be the same floor level as the existing habitable floor level subject to compliance with the Building Code of Australia and shall be treated in the same manner as Section 3.1(i) and 1(iii) within this policy.

3.2 Commercial & Business Lands

Floor heights are to be assessed on the merits of each application (see definition below).

Note: To minimise the likelihood of damage of property from flooding, it is advised that all electrical outlets and perishable items be kept above the stated 1% AEP. The choice of building materials, internal fixtures and floor coverings should also be considered.

3.3 Basements

Engineering designs are to demonstrate that there is no impact from localised flooding on a basement.



3.4 Areas Surrounding Buildings

The existing ground level of the areas surrounding buildings is not to be built up without an engineering and hydrological assessment being submitted and approved by Council. The assessment is to take into consideration the diversion and/or catchment of stormwater to ensure there are no impacts on the building and/or neighbouring allotments.

Areas surrounding buildings include, but are not limited to:

- Concrete or paved footpaths;
- Court yards or patios;
- Landscaping; and
- Lawn areas.

4 Definitions

NCC: National Construction Code (formerly known as the Building Code of Australia)

Habitable Room: As defined in BCA Volume 2 Part 1.1.

AEP: Annual Exceedance Probability - The chance of flood of a given or larger size occurring in any one year, usually expressed as a percentage, e.g. if a peak flood discharge of 500m³/s has an AEP of 5% it means that there is a 5% chance (that is one-in-20 chance) of a 500m³/s or larger events occurring in any one year.

Defined Flood Event: the flood event selected as a general standard for the management of flooding to development.

Merits of Each Case: Where this terminology is used consideration is to be given to collectively assessing the extent of flooding and the likely implications.

Flood Planning Level: The combination of the flood from the defined flood event and freeboard selected for the management of flood risk communities purposes.

Considering Flooding in Land Use Planning Guideline means the Considering Flooding in Land Use Planning Guideline published on the Department's website on 14 July 2021.

Flood Risk Management Manual: Department of Planning and Environment ISBN: 978-1-923076-17-4 June 2023.

Engineering and hydrological assessment documentation is to be submitted to Council demonstrating the likely impact flooding would have on a building.

Unusual features such as banks, adjacent drainage channel, railway lines and the like which may complicate flooding, should be considered.



In all cases the action taken to provide a flood level is to be documented so that Council maintains its indemnification under the current version of the New South Wales Government Flood Plain Development Manual: the management of flood liable land.

5 Exceptions

None

6 Legislation

None

7 Related Documents

Griffith Flood Liable Lands Policy, CS-CP-403

8 Directorate

Sustainable Development



Buildings – Relocation CS-CP-319 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	-	Before 24 Apr 1990
2	27 Apr 1993	C4	27 Apr 1993
3	28 Jun 1994	508	28 Jun 1994
4	14 Jan 2003	25	14 Jan 2003
5	11 May 2010	0142	11 May 2010
6	13 Aug 2013	0255	13 Aug 2013
7	22 Aug 2017	17/205	22 Aug 2017
8	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To determine acceptable standards for dwellings to be relocated so as to preserve the amenity of the intended relocation site.

3 Policy Statement

The following conditions shall apply to the relocation of dwellings within urban areas: -

- (a) A development application shall be lodged with Council for determination;
- (b) Information submitted with a development application shall include a statement of environmental effects which details improvements proposed to the dwelling to be carried out following relocation; existing floor plans and elevation drawings, photographs. Where the building is proposed to be relocated from outside Griffith, a report on the suitability of the building to be transported is to be submitted to Council. The report is to be prepared by a person deemed suitably qualified by Council's Building Surveyors.
- (c) The applicant shall arrange an inspection with Council of the building prior to consideration and determination of the application and prior to the relocation;
- (d) The application shall be notified in accordance with the provisions of Griffith Community Participation Plan. Notification is discretionary as indicated in Appendix 1 of the Griffith Community Participation Plan.
- (e) The relocated building shall be required to be refurbished to a standard of finish which is compatible with the adjoining and nearby development and the streetscape in general. As a guide, such standard should include:-
 - (i) aluminium framed windows or other windows of an acceptable standard;
 - (ii) roof iron or other roof materials are to be of good condition;



- (iii) the exterior of the building is to be of neat appearance and, if constructed of fibro or similar material, to be neatly painted, and;
 - (iv) all electrical and plumbing works are to be of an acceptable standard.
- (f) A bond of \$5,000 shall be submitted with each application and shall be refunded on completion of all work. All building work should be completed within twelve (12) months of building approval;
- (g) The failure of the applicant to comply with the required conditions within a period of twelve (12) months will result in Council considering the issue of a demolition order on the building.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Submissions Made Regarding Development & Activity Applications

CS-CP-321

(LOCAL PUBLIC POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	31 Aug 1999	25	31 Aug 1999
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To provide information to persons making submissions about the disclosure of the contents of their submission made in response to the public consultation part of the assessment of development applications.

3 Policy Statement

- 3.1 Where a submission is made in response to a Development Application which is to be assessed by Council before determination, the submission may be disclosed to the applicant or other bona fide person except where:
- (a) The person making the submission claims confidentiality for reasons of personal hardship or “commercial in confidence” and the claim is clearly expressed in the submission.
 - (b) The Public Officer of Council determines under Section 12A of the Local Government Act, that such disclosure should not be made for any of the reasons expressed in the section, and such may relate to whole or part of a document.
- 3.2 Advice of the terms of the policy shall be made to persons intending to make a submission when undertaking public consultation; the advertisements for development applications, all correspondence, and a counter notice shall clearly state that submissions will be available for public inspections with a few exceptions.

4 Definitions

None



5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Buildings – Engineer's Certificate

CS-CP-401

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	-	Before 24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To protect the interests of all parties in situations relating to engineering certification where the Director Sustainable Development (or equivalent position) or their nominated delegate feels that such action is justified.

3 Policy Statement

Council shall require supportive documentation by a suitably qualified practising structural engineer when deemed necessary by the Director Sustainable Development (or equivalent position) or their nominated delegate to support a specific performance requirement or to comply with a statutory provision.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Driveways – Maintenance & Width

CS-CP-402

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	Before 24 Apr 1990	0	Before 24 Apr 1990
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

- To delineate responsibility for the maintenance of driveways and access routes to properties.
- To enhance the appearance in residential areas by limiting the width of residential driveways.

3 Policy Statement

- 3.1 Council shall not maintain driveways between the property boundaries and the road shoulder or kerb.
- 3.2 Council shall not maintain laybacks, unless it is impeding on drainage.
- 3.3 Vehicular driveways to residences shall be limited to a maximum width of 7.5 metres.
- 3.4 The driveways shall be to standard specifications as per Griffith City Council's Engineering Guidelines.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

Roads – Culverts – Provision and Maintenance (WO-CP-601)



8 Directorate

Sustainable Development



Griffith Flood Liable Lands CS-CP-403 (LOCAL POLICY)

Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	11 Oct 2011	0353	11 Oct 2011
2	13 Aug 2013	0255	13 Aug 2013
3	22 Aug 2017	17/205	22 Aug 2017
4	8 Nov 2022	22/291	8 Nov 2022

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Glossary

AEP	Annual Exceedance Probability. Refers to the probability of a flood event of a certain magnitude occurring in a year. E.g. a 1% AEP flood event is the 100 year ARI flood event.
AHD	Australian Height Datum
ARI	Average Recurrence Interval
Council	Refers to Griffith City Council, who is the consent authority for the approval of developments
DCP	Development Control Plan
DECC	former Department of Environment and Climate Change (<i>now OEH</i>)
DECCW	Department of Environment, Climate Change and Water (<i>now OEH</i>)
EP&A Act	Environmental Planning and Assessment Act, 1979
EPAR	Environmental Planning and Assessment Regulation, 2000
FPA	Flood Planning Area
FPL	Flood Planning Level
LEP	Local Environment Plan
LG Act	Local Government Act, 1993
LGA	Local Government Area
Management Plan	Floodplain Risk Management Plan
Management Study	Floodplain Risk Management Study



Manual	Floodplain Development Manual (2005)
OEH	Office of Environment & Heritage (<i>formerly DECCW</i>)
PMF	Probable Maximum Flood
SEPP	State Environmental Planning Policy
SES	State Emergency Service

1 About This Policy

1.1 Background

This policy seeks to guide proposed development in the management of flood risks for the Griffith City Council Local Government Area. It shall be applied in conjunction with other development control plans adopted by Griffith City Council.

The policy presents a set of flood related assessment criteria which are to be met by all new development. For example, the minimum floor level for new residential development has been based on the 100 year ARI flood event with a 500 millimetre freeboard.

The policy also requires that new development address potential life threatening situations arising from flooding, up to the probable maximum flood. The aim is to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and to reduce private and public losses resulting from floods, utilising ecologically positive methods, wherever possible.

The policy also identifies areas where development may be restricted as a result of flood related risks. The restriction of incompatible development in these areas is essential to achieving the objectives of floodplain risk management set out in the Floodplain Development Manual.

This policy has been developed in the context of specific information available on flooding for the area of the Griffith LGA covered by the '*Griffith Floodplain Risk Management Study & draft Floodplain Risk Management Plan*' (September 2011). In addition, it is intended to be used as an interim set of guidelines for all flood prone land within the LGA until incorporated into a comprehensive development control plan (DCP).

1.2 Purpose

The purpose of this policy is to provide matters to be taken into consideration by Griffith City Council when exercising its environmental assessment and planning functions in relation to development in the City of Griffith. The policy addresses the new directions in flood risk management that are embodied in the NSW Government's Flood Prone Land Policy and which are emphasised in the government's Floodplain Development Manual.

1.3 Where Does This Policy Apply?

The policy applies to flood prone land within the whole of the Griffith City Council LGA. There are a number of floodplains within the LGA. The policy includes general



provisions relating to all flood prone land. However, it has been developed in the context of work undertaken as part of the Griffith Floodplain Risk Management Study.

1.4 How Does the Policy Relate To Other Legislation and Regulations

This policy should be read in conjunction with the relevant provisions of the following:

- NSW Government's *Flood Prone Lands Policy* and *Floodplain Development Manual* (2005);
- The *Environmental Planning & Assessment Act 1979*, and regulations thereto,
- Applicable environmental planning instruments, including but not limited to *Griffith Local Environmental Plan 2014*; and,
- other relevant Development Control Plans (DCPs) and Policies adopted by Council including 'Floor Heights - Policy No. 105' (CS-CP-318).

1.5 Objectives

The objectives of this policy are:

- to reduce the impact of flooding and flood liability on individual owners and occupiers of flood prone property;
- to reduce private & public losses resulting from floods, utilizing ecologically positive methods wherever possible;
- to alert the community to the hazard and extent of land affected by potential floods;
- to inform the community of Council's policy in relation to the use and development of land affected by potential floods;
- to deal equitably and consistently with all matters requiring Council's approval on land affected by potential floods, in accordance with the principles contained in the Floodplain Development Manual issued by the NSW Government;
- to increase public awareness of the potential for flooding across the range of flood events up to the probable maximum flood level; and,
- to ensure that planning and development of essential services and land use generally makes appropriate provision for flood related risk.

2 Definitions

For the purposes of this policy, the definitions as prescribed in the NSW Government's *Floodplain Development Manual* (2005); the Griffith Local Environmental Plan (2014) and the Standard Instrument (2006) shall be adopted¹.

Concessional Allotment Concessional allotments are as defined in Clause 21A and 22 of the Griffith Local Environmental Plan (2014).

¹ Where a development or land use category is not set out in the definitions of the Flood Liable Lands Policy, the definitions set down in Griffith Local Environmental Plan 2002 or the Standard Instrument shall be used.



Commercial Development	Has the same meaning ascribed to <i>commercial premises</i> set down in the Standard Instrument, and also includes <i>pubs</i> and <i>registered clubs</i> also defined in the Standard Instrument.
Critical Infrastructure	Critical infrastructure refers to essential services and other infrastructure where loss of these services during flooding represents an unacceptable risk. This includes services such as <i>water supply system</i> , <i>sewerage system</i> , <i>telecommunication facilities</i> , <i>electricity generating works</i> . It includes structures associated with an <i>emergency services facilities</i> , and <i>hospitals</i> , and designated flood evacuation centres.
Development	<p>is defined in Part 4 of the EP and A Act. In addition, the Manual adopts the following definitions for particular development types.</p> <p>Infill Development refers to the development of vacant blocks of land that are generally surrounded by developed properties and is permissible under the current zoning of the land. Conditions such as minimum floor levels may be imposed on infill development.</p> <p>New Development refers to development of a different nature to that associated with the former land use. Eg, the urban subdivision of land previously used for rural purposes.</p> <p>Redevelopment refers to rebuilding a similar type of development to that housed previously. Eg, as urban areas age, it may become necessary to demolish and reconstruct buildings on a relatively large scale. In general, redevelopment does not require re-zoning.</p>
Extension	Refers to a modification to an existing structure where a secure enclosure is provided.
Floodway	A <u>floodway</u> is defined as an area of the floodplain where significant discharge of water occurs during floods. Floodways are areas that, even if partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.
Flood Immunity Level	The level at which a road is cut by floodwaters. For example, a road which first becomes inundated by the 20 year ARI flood event has a 20 year flood immunity level.
Flood Planning Area	The area of land below the FPL and thus subject to flood related development controls.
Flood Planning Levels (FPL)	Is the combination of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management



	purposes, as determined in management studies and incorporated in management plans.
Flood Prone Land	Land susceptible to flooding by the PMF event. Flood prone land is synonymous with flood liable land.
Flood Storage	A <u>flood storage</u> is an area of the floodplain that is important for the temporary storage of floodwaters during the passage of a flood. A substantial reduction in the capacity of flood storage areas may cause flood levels to rise and the peak discharge downstream may increase.
Freeboard	refers to a designated height above the design flood which is stipulated to incorporate a suitable factor of safety into development. Freeboard may vary depending upon the proposed type of development.
Industrial Development	Has the same meaning ascribed to <i>industry</i> as set down in the Standard Instrument.
Residential Development	Has the same meaning ascribed to <i>residential accommodation</i> as set down in the Standard Instrument.
Tourist Accommodation	Has the same meaning ascribed to <i>tourist and visitor accommodation</i> as set down in the Standard Instrument.

3 Statutory Context

3.1 Title

This document is called *Griffith Flood Liable Lands Policy* ('the policy').

3.2 Status

The policy is:

- a policy that is required to be listed in the Council's *Summary of Affairs* published under the *Freedom of Information Act 1989*.
- a policy that is a matter for consideration under Section 79C of the *Environmental Planning and Assessment Act, 1979* as it is relevant to provisions contained in *Griffith Local Environmental Plan 2014* in respect to flood liable land.

3.3 Commencement

The policy commences operation on 11/10/2011.

3.4 Where the Policy Applies

The policy applies to all flood prone land within the Griffith LGA.



3.5 Development to Which the Policy Applies

The policy applies to all development except minor alterations to existing buildings listed as exempt development in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

3.6 Council Functions to Which the Policy Applies

The contents of the policy are to be considered by the Council when determining development applications under Part 4 of the *Environmental Planning & Assessment Act 1979*.

3.7 Relevant LEPS/DCPS

The policy supplements the provisions of the *Griffith Local Environmental Plan, 2014* and relevant development control plans for particular land uses or zones.

3.8 Related Documents

The policy has been developed considering the following Council flood related policies that were current as at May 2013:

- Buildings –Floor Heights, Policy CS-CP-318;
- Onsite Stormwater Detention Policy, CS-CP-404

It also considers the findings of a range of flood and floodplain management studies that have been prepared for specific creek and river systems within the LGA. These include:

- Aerodrome Overland Flow Flood Study (2010)
- Aerodrome Overland Flow Floodplain Risk Management Study and Plan (2011)
- CBD Overland Flow Flood Study (2012)
- CDB Overland Flow Floodplain Risk Management Study and Plan (2013)
- Lake Wyangan Flood Study (2012)
- Lake Wyangan Floodplain Risk Management Study and Plan (2013)
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 2
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 3
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 4
- Griffith Main Drain J and Mirrool Creek Floodplain Risk Management Study and Plan (2015)
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 2



4 Flood Risk Management Policy

4.1 Objectives

The primary objectives of this policy in terms of achieving sound floodplain management are to:

- guide the development of flood prone land, applying balanced strategies to economically, socially and environmentally manage the potential risk to life and property;
- set aside appropriate areas to convey and/or store floodwaters and to protect and restore the riparian zone; and
- ensure development, when considered both individually and in the context of cumulative development trends, will not cause unreasonable adverse flooding impacts in other locations.

4.2 Applicability

This policy applies to all Flood Prone Land within the Griffith LGA. As defined by the Floodplain Development Manual, this includes all land inundated by flooding up to the PMF. However, different types of control will apply subject to the severity, frequency and magnitude of flooding at any one location. In this regard, development controls typically apply to the area of land that falls within the flood planning area.

4.3 How to Use the Policy

The following is a summary of the steps that should be followed in the assessment of development proposals on or adjacent to flood prone land.

Step 1 - Check that the proposal is permissible relative to the zoning of the land by reference to the *Griffith City Council Local Environmental Plan 2002* or any other applicable environmental planning instrument.

Step 2 - Consider any other relevant planning controls of Council (*e.g. controls in any other applicable development control plans which govern for instance the size and setback of development*).

Step 3 - Where available, determine the relevant floodplain and obtain flood data (*e.g. flood levels and velocities*) from Council's existing flood studies (*refer Section 3.8*). This information can be obtained from Council. Where no flood study has been undertaken, the applicant will need to liaise with Council to determine whether flood restrictions may apply.



Step 4 - Determine the “provisional” hydraulic and hazard categorisation of the site. This may be determined from existing Flood Studies and Floodplain Risk Management Studies. Otherwise, this may be determined in accordance with the procedures outlined in Appendix L of the *Floodplain Development Manual 2005* and the DECC Floodplain Risk Management Guideline titled ‘*Floodway Definition*’.

At this stage applicants are encouraged to consider whether or not the advice of a Consultant and/or Engineer specialising in flood hydrology is required.

Step 5 - In consideration of the provisional hydraulic and hazard categorisation at the site, demonstrate that the development will adhere to the relevant matters for consideration discussed in **Chapter 5**.

Step 6 - Check with Council planning staff to establish any other requirements for a development application. Submit flood assessment with development application once satisfied all requirements have been met.

4.4 Provisional Site Classification

Definition of the provisional hydraulic and hazard categories which exist at the site of a development proposal is required to assess developments within flood prone land. This Policy has adopted the combination of hydraulic and hazard categories defined in the Manual. These are as follows:

- Low Hazard - Flood Fringe
- Low Hazard - Flood Storage
- Low Hazard - Floodway
- High Hazard - Flood Fringe
- High Hazard - Flood Storage
- High Hazard – Floodway

These categories are to be employed when considering development in flood prone land during the term of this policy. Pre-existing information pertaining to areas where classifications have already been developed for particular creeks, rivers or drainage channels can be obtained from the documentation listed in **Section 3.8**.

Where unavailable, the hydraulic and hazard categorisation is to be based on the judgment of an experienced flood hydraulics engineer. Council will not provide provisional site classifications, other than for areas classified as part of a flood study or floodplain risk management plan. Notwithstanding, Council may elect to nominate a provisional site classification in instances where an applicant is not prepared to provide this assessment on request and also reserves the right to review site classifications provided by an applicant.

The following provides additional details for the three hydraulic categories and two hazard categories identified above.



4.4.1 Description of Hydraulic Categories

Floodways

Floodways are shown on mapping that accompanies flood studies and floodplain risk management studies prepared by Council and are generally obtainable on application from Council.

Floodways are required for the conveyance of essential flood flow and are to be retained in a condition capable of doing so. Development in floodway areas is subject to a range of additional controls. It needs to be recognised that floodways are not necessarily indicative of high hazard areas. It is necessary to separately consider the range of factors that contribute to hazard categorisation.

For the purposes of this policy, floodways are defined as those sections of the floodplain:

Where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels.

Which even if partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.

Where most conveyance of floodwater along a particular flowpath occurs.

Where flow velocities may be relatively high compared to other areas of the floodplain.

Where blockage will either raise flood levels or redirect flood flows. In all cases blockage is to be considered at an “overall” scale in order to identify both broad scale and local impacts and is to consider the cumulative impacts of any other future development.

Flood Storage Areas

Flood storage areas are defined in the Manual as *“those parts of the floodplain that are important for the temporary storage of floodwater during the passage of a flood.”* The manual goes on to indicate that that filling or obstruction of these areas may cause an increase in flood levels and the peak discharge downstream of these areas.

The Development restrictions which apply to “HIGH” hazard flood storage areas and “LOW” hazard flood storage areas are discussed following in **Section 5.1**.



Flood Fringe Areas

Flood Fringe refers to those areas not classified as Floodway or Flood Storage that are located within the extent of the 100 year flood event.

4.4.2 Description of Hazard Categories

Appendix L of the Floodplain Development Manual details the process by which hazard categories are defined. In general, it involves firstly consideration of the peak depths and velocities present at a site and relates this to low and high hazard categories. It then outlines a range of additional factors, such as available warning times, flood risk along evacuation routes and vulnerable populations which also contribute to hazard. Consideration of these combined factors will result in definition of the final hazard categorization.

4.4.3 Existing Provisional Hydraulic and Hazard Category Mapping

At the time of the current revision, provisional hydraulic and hazard categories had been documented in the following reports for parts of the Griffith Local Government Area:

Griffith Floodplain Risk Management Study

The Griffith Floodplain Risk Management Study documented provisional hydraulic and hazard classifications for the area throughout the Main Drain 'J' floodplain. Specifically, this covers the area of the Griffith Local Government Area bounded by the Main Branch Canal to the north/east and the Mirrool Branch Canal to the south. The Study also provides hydraulic and hazard categories at Yenda and within the Griffith CBD area.

Other Studies

A range of other studies have been undertaken, or are in the process of being completed where hydraulic and hazard categorisation may be available or may become available in the future. These include:

- Aerodrome Overland Flow Flood Study (2010)
- Aerodrome Overland Flow Floodplain Risk Management Study and Plan (2011)
- CBD Overland Flow Flood Study (2012)
- CDB Overland Flow Floodplain Risk Management Study and Plan (2013)
- Lake Wyangan Flood Study (2012)
- Lake Wyangan Floodplain Risk Management Study and Plan (2013)
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 1
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 2
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 3
- Griffith Main Drain J and Mirrool Creek Flood Study 2015 Vol 2 - Part 4



- Griffith Main Drain J and Mirrool Creek Floodplain Risk Management Study and Plan (2015)
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 1
- Griffith Main Drain J and Mirrool Creek Flood Study Update 2021 Vol 2

4.5 Flood Planning Level

For the Griffith LGA, the 100 year ARI flood level plus a freeboard of 500 mm has been adopted as the Flood Planning Level (*FPL*). Mapping has been prepared which shows the Flood Planning Area's extent across the Main Drain 'J' floodplain and Lake Wyangan. Council is able to supply the FPL for properties located within the Main Drain 'J' floodplain.

Alternate flood planning levels may apply to particular land uses. A summary of the FPL's adopted for this policy is identified below.

- The finished floor levels of habitable rooms shall be at least equal to the FPL where known, or where not known, 500mm above the 100 year ARI flood level as advised at the time by Council.
- Flood Planning Levels shall be as follows for the following land uses:

Commercial & Industrial = 100 year flood level with 25% of the floor area to be 500 mm above the 100 year flood level. Council will give consideration to a lower floor level (*absolute minimum 1:20 year flood level*) only in circumstances to achieve mobility access standards and compatibility with existing street frontages.

Critical Utilities = If at all avoidable, critical utilities should be constructed outside of flood prone land. Where construction of critical facilities within flood prone land is unavoidable, they shall be flood free during the PMF event.

Subdivision = 100 year + 500 mm freeboard

Garages and Storage sheds = 20 year ARI flood level

4.6 Land Use Categories

The following land use categories have been identified for the purpose of considering flood related controls on potential development.

- Residential accommodation (as defined in the Standard Instrument)
- Commercial premises and industry (as defined in the Standard Instrument)
- Critical infrastructure (including *water supply system, sewerage system, telecommunication facilities, electricity generating works, emergency services facilities, and hospitals as defined in the Standard Instrument* and designated flood evacuation centres)



- Subdivisions (as defined in the Environmental Planning and Assessment Act, 1979) and boundary adjustments (as defined in Griffith Local Environmental Plan 2014).
- Caravan parks, tourist and visitor accommodation (as defined in the Standard Instrument)
- Fencing
- Car parks

4.7 Matters for Consideration

Development of any of the above land use categories may proceed subject to determination of a site's provisional hydraulic and hazard categories. The matters for consideration which apply to each land use type for hydraulic and hazard categories has been addressed in **Section 5**.

5 Matters for Consideration

The following section identifies the matters for consideration which are relevant to specific land uses that fall within flood prone land. The matters for consideration have been developed in the context of the hydraulic categories adopted by the Manual.

5.1 Flood Storage and Flood Fringe

The following section outlines the matters for consideration which apply to flood prone land categorised as flood storage or flood fringe. In general:

- Development in flood storage **and flood fringe** areas has the potential to adversely impact on flooding at adjacent properties. Accordingly, development in these areas is subject to certain controls on filling, and blockage of this land.
- ~~Flood Fringe areas are generally locations which will have little effect on the downstream conveyance of floodwaters.~~

In addition, consideration is given to the flood hazard posed to users of the proposed development.

5.1.1 Residential Development

New Development, Infill Development and Redevelopment

(a) Floor Levels

The elevation of all habitable floor levels shall be equal to or above the FPL. The minimum elevation for garages, sheds and other structures ancillary to residential development is the peak 100 year ARI flood level.



(b) Flood Proofing

Flood proofing shall be provided to all aspects of the proposed development up to the FPL. Flood proofing for the building are required and flood proofing measures may be considered on a case by case basis.

(c) Flood Impact on Other Properties

Where development will take place in a designated flood storage area, the applicant is required to demonstrate that the net loss in flood storage is negligible. Where practical, excavation and other works may be proposed to address this requirement

Any development must also ensure that existing overland flow paths are not impeded. Additional drainage infrastructure may be required to achieve this objective.

Council will review each development on a case by case basis to establish the level of investigation required to assess the impact of flooding on other properties. It is recommended that the applicant liaise with Council to establish whether a Flood Impact Assessment Report is required for the proposed development.

(d) Site Access and Flood Evacuation Requirements

The internal access road shall be equivalent to the flood immunity level of the adjoining public road. However, Council may also consider access roads as low as the 20 year ARI flood event in certain circumstances.

Where there is greater than dual occupancy proposed, a flood risk assessment will be undertaken to demonstrate that evacuation of the residents during flooding can proceed safely without increasing demand on emergency service resources. Consideration should be given to the site's emergency response requirements.

Developments reliant upon evacuation through high hazard floodway or high hazard flood storage conditions will not be supported by Council.

The applicant is encouraged to liaise with Council to establish the level of investigation required to assess the flood risk at a particular property.

Extensions

In general, extensions shall proceed in accordance with the guidelines outlined above. Notwithstanding, extensions undertaken on single dwelling and dual occupancy may be exempt from item (d) above.

In addition, consideration will be given to floor levels for minor extension or modifications below the FPL provided:



- the area of the extension's floor level covers no more than 20% of the existing floor level, or 40 m², whichever is greater,
- the extension is above the level of the 20 year ARI flood event.
- the extension is as high as practical without modification to the existing roofline.

5.1.2 Commercial and Industrial Development

New Development & Redevelopment

(a) Floor Levels

At least 25 % of the floor level provided for this type of development shall be at an elevation equal to the 100 year ARI flood level plus a minimum of 500 mm. The remaining 75% of the floor level shall be sited at a level equivalent to the peak 100 year ARI flood level.

Where multiple units will be provided at an industrial or commercial subdivision, at least 25 % of the floor level of each unit must be at an elevation equivalent to or above the FPL.

The application shall demonstrate the feasibility of moving bulky or heavy items to the raised area.

Consideration may be given to floor levels below this for non-habitable parts of the development (including garages, sheds). However, all floor levels will be required to be a minimum of the 20 year ARI flood level.

(b) Flood Proofing

Flood proofing shall be undertaken in accordance with that described for residential properties in **Section 5.1.1**.

(c) Flood Impact on Other Properties

The flood impact on other properties shall be assessed in accordance with that described in **Section 5.1.1**.

(d) Site Access and Flood Evacuation Requirements

For all industrial and commercial developments, the internal access road shall be equivalent to the flood immunity level of the adjoining public road.

Furthermore, where flood free access up to and including the 100 year ARI flood event is not available, a flood risk assessment shall be undertaken to demonstrate that evacuation can proceed safely without increasing demand on emergency services.



Extensions

In general, extensions shall proceed in accordance with the guidelines outlined above.

In addition, consideration will be given to floor levels for minor extension or modifications below the FPL provided:

- the area of the extension's floor level covers no more than 20% of the existing floor level, or 60 m², whichever is greater,
- the extension is above the level of the 20 year ARI flood event.
- the extension is as high as practical without modification to the existing roofline.

5.1.3 Critical Infrastructure

Where possible, critical infrastructure should be located outside the Flood Planning Level. However, the policy recognises that this is not possible in all circumstances, in which merit assessment will apply.

New Development & Redevelopment

Critical infrastructure is defined in accordance with the definition provided in **Section 2**. However, this is not intended to be an exhaustive list of critical infrastructure and Council may elect to define additional development types as critical.

(a) Floor Levels

The floor level of all critical infrastructures shall be at or above the level of the Probable Maximum Flood (PMF).

(b) Flood Proofing

Flood proofing shall be provided for all parts of the building up to and including the level of the PMF. Preferably, this is to be achieved by filling the portion of the site containing the critical infrastructure, however alternative methods may also be considered.

A certified structural engineer's report will be required to verify that the structure can withstand forces generated by flooding for all floods up to and including the PMF event.

(c) Flood Impact on Other Properties

The flood impact on other properties shall be assessed in accordance with the procedures described in **Section 5.1.1**.



(d) Site Access and Flood Evacuation Requirements

Appropriate access shall be provided to the site up to and including the PMF.

Extensions

Extensions to critical infrastructure shall be undertaken in accordance with the guidelines described above.

5.1.4 Subdivisions

The sub-division of land will be subject to the matters for consideration identified above for the relevant land use type (i.e. residential or commercial/industrial). In addition, the following flood related controls will apply to the sub-division of flood liable land.

(a) Floor Levels

The minimum floor level shall be in accordance with the guidelines adopted for residential and industrial/commercial development in **Sections 5.1.1 and 5.1.2.**

(b) Flood Proofing

Flood proofing shall be provided for all the proposed lots up to FPL.

(c) Flood Impact on Other Properties

A flood impact assessment is required to verify that the subdivision does not result in adverse flood impacts to properties located off-site.

Council will only support subdivisions in flood prone land, provided the applicant can demonstrate to Council's satisfaction the requirements of Appendix L of the Manual 2005 have been met. Such applications are to be prepared by a suitably qualified civil engineer/surveyor/hydrologist with a demonstrated experience in flood assessment of land development proposals.

Furthermore, assessment of several different ARI flood events may be required to verify that the impact of flooding is not increased for floods other than the 100 year ARI flood event.

Where required, appropriate compensatory works shall be incorporated into the sub-division.



(d) Site Access and Flood Evacuation Requirements

Safe vehicular access shall be provided at the level of the 100 year ARI flood event to each individual allotment within a residential sub-division. Modification of this criteria may be considered where the adjoining public road is below the 100 year ARI flood and it is demonstrated through a flood risk assessment that residents of the sub-division can be evacuated to ground situated above the PMF without increasing the demand on emergency services.

For a commercial and industrial sub-division, the access road shall be sited at flood immunity level of the adjacent public road.

5.1.5 Existing Entitlements

- Council may support the replacement of an existing dwelling within flood prone areas provided the new dwelling is permissible according to the zoning and evidence is submitted with applications to demonstrate the existence of the dwelling. The applicants must demonstrate the existence of the former dwelling by photographs and/or records of building approvals.
- Approvals should be submitted for any dwelling erected after 1 January 1996 (*being the gazettal date of Interim Development Order No. 1*)
- Levels of habitable floors of the former dwelling based on AHD and certified by a Registered Surveyor must be submitted with the application.
- Council will not support replacement of an existing dwelling to be located within a High Hazard – Floodway.

5.1.6 Caravan Parks & Manufactured Housing

- Caravan Parks & Manufactured Housing permissible under Council's zoning shall be restricted to Low Hazard flood areas.
- Applicants are to assess proposals for Caravan Parks and Manufactured Housing in accordance with the building development controls outlined above.
- Evacuation plans shall be prepared as part of the on-site management plans required for the site.

5.1.7 Carparks

- Carparks are permitted within flood prone areas provided the applicant can demonstrate the potential damage to motor vehicles from flooding is minimised.
- Proposals for carparks shall also ensure that motor vehicles do not become moving debris during floods, which threaten the integrity of structures, safety of people or damage other property.
- Proposals for basement carparks shall ensure risk to human life from the inundation of basement and other car park or driveway areas is minimised.



5.1.8 Fences

- Fences of a continuous design, such as paling fences, and continuous brick fences, shall be permissible in flood fringe areas, subject to Council approval. In some cases, Council may require the applicant to demonstrate that fencing will not result in any significant increase in flood levels and flow velocities off site. In this regard, each case will be assessed on its merits.
- Some limitations may apply to fences which create a continuous impermeable design within flood storage areas.
- Post and rail fences may be permitted and shall be designed so as to permit the unimpeded flow of flood waters.
- Fencing of a continuous design may be permitted in flood prone areas (other than floodways) provided that the applicants can demonstrate that the proposed fencing does not generate an adverse impacts on flooding.

5.1.9 Rezoning of Land

The following will apply to rezoning applications of flood prone land:

- Any ministerial direction given pursuant to Section 117(2) of the Environmental Planning and Assessment Act, 1979 in respect to flood prone land.
- Rezoning applications in flood prone land will not be considered unless a Floodplain Risk Management Study has been undertaken or investigations are completed to confirm potential impacts of the full range of floods (including the PMF) on the future development of the rezoned land are minimal (ie development is of minor significance).
- The applicant will also be required to prepare hydraulic and hazard category mapping for the proposed rezoning site, where this is not available from existing studies.
- Council will not support the rezoning of flood prone land for all sites provisionally classified as High Hazard and/or floodway in accordance with the Floodplain Development Manual (2005), unless it can be shown that works proposed as part of the rezoning will reduce the hazard categorization of the land, while at the same time not adversely impacting flood characteristics for adjacent or nearby properties. Such applications are to be prepared by a suitably qualified civil engineer / surveyor / hydrologist with a demonstrated experience in flood assessment of land development proposals.

5.2 Floodways

A definition of floodway areas is provided in **Section 4.4.1**. In general, development within a floodway is discouraged for the following reasons:

- the potential to redirect flows;
- the level of potential danger to personal safety; and,
- significant financial losses due to the damage potential.



Notwithstanding, there may be circumstances in which certain types of development could proceed, subject to a range of considerations. These considerations are in addition to the relevant requirements outlined in **Section 5.1**.

The types of development that may be appropriate within low hazard floodways include:

- infill development;
- existing entitlements/ concessional allotments, where provision is made in accordance with the guidelines of the Griffith LEP; and
- replacement and extensions to existing structures.

In general, the following types of activities in area provisionally categorised as “floodway” will not be permitted:

- sub-division;
- rezoning; and,
- new development.

For development in the floodway, landowners / developers will be given opportunity to further refine the floodway, but at their own cost. Applications are to be prepared by a suitably qualified civil engineer/surveyor/hydrologist with a demonstrated experience in flood assessment of land development proposals. It is expected that any changes to the floodway development would be difficult to justify.

The relevant controls that apply to development within floodway areas are identified in the following.

5.2.1 Low Hazard Floodways

General

The following provides a summary of development which is permissible in low hazard floodways. Each proposal to develop in low hazard floodways will be considered on the basis of its merits. In general, development of floodways may proceed where either one of two conditions can be met:

- The proposal is located in an area of the floodway where a substantial amount of development already exists and existing development can be utilised to construct new buildings and structures without measurably increasing the lateral blockage of a floodway (*e.g. infill development*); or,
- The proposal is located on a large enough lot such that the proposal and associated filling is minor relative to the overall conveyance of floodwater and any localised impacts can be maintained wholly on site (*e.g. concessional allotments on rural land*).



Where permissible, development shall proceed in accordance with the following principles:

Infill Development

Infill development generally occurs where undeveloped lots exist within urbanised areas or subdivisions. A definition of infill development is provided in **Section 2**.

The following controls shall apply to infill development in floodway areas.

- The building is located to avoid any additional blockage of the lateral extent of the floodway. In this regard, the “shadow” of upstream development must be utilised when siting the proposed dwelling (refer Figure 1).
- The maximum permissible floor area shall be in accordance with the provisions of other DCP’s. However, the footprint development will need to consider the shadow requirements outlined immediately above.
- Any other structures (e.g. garages) must be sited to also observe shadow requirements.
- Habitable rooms will be sited above the flood planning level.

An example of infill development that incorporates the principles of shadow development is shown in **Figure 1**. Please note, **Figure 1** is solely intended as an example of what might constitute development within the shadow of a pre-existing building.



Figure 1 Example of a “Shadow” created by an existing development

Concessional Allotments / Existing Entitlements

Concessional allotments are recognised in the Griffith LEP 2002. The following outlines the assessment criteria for construction of an additional dwelling on an area where concessional allotments are permitted. In general, the following will also apply to existing entitlements.

- Where a property is only partially affected by the floodway extent, the proposed dwelling shall be located outside the floodway, unless reasons can be given why locating the building within the floodway generates more optimal flood risk management outcomes (for example, the combined consideration of hazard and blockage suggests the property is best located in a floodway where it can also utilise an existing road and avoid any requirement for fill).



- Where the property boundary falls wholly within the floodway extent the property should be sited to minimise the impact on flooding. This should include consideration of the following aims:
 - Develop in the shadow of an existing structure, where applicable;
 - Minimise the volume of fill required to develop the property. This may be achieved by positioning the house on locally raised terrain. Notwithstanding, hazard categorisation and evacuation requirements will still need to be considered.
 - Locate the property to avoid any off-site flood impacts. In this regard, Council may require the proponent engage a suitably qualified flood engineer to assess the proposal.
- Adequate evacuation from the site must be provided in accordance with the principles outlined in Section 5.1.

Redevelopment

Re-development is defined in **Section 2**. Re-development of a lot located within the floodway on land zoned 1 (a) rural or 1(c) rural residential by the Griffith LEP 2002 should observe the principles outlined above for concessional allotments.

Where redevelopment in the floodway occurs on existing land under the Griffith LEP, redevelopment should generally occur in accordance with the principals outlined above for infill development.

Extensions

Extensions to existing dwellings are permissible. However, where they are located within a floodway zone, they must observe the following:

- No greater than 60 m² in area for residential developments. Variations to this for industrial, commercial and rural residential will be considered on a case by case basis.
- They are to observe the principles of shadow development outlined for infill development. That is, any extensions must avoid increasing the blocked area of the floodway.
- Habitable rooms must be constructed with a minimum floor level not less than the Flood Planning Level.

Fences

Where dividing fences across floodways are unavoidable, they are to be constructed only of open type fencing that will not restrict the flow of flood waters and be resistant to blockage.



5.2.2 High Hazard Floodways

Development within highway hazard floodways is generally discouraged. Council may consider granting permission to minor developments including extensions provided the requirements outlined in **Section 5.2.1** can be met. It is noted that only very minor sections of the Main Drain 'J' floodplain have been categorised as "High" hazard.

5.3 Additional Flood Proofing Matters for Consideration

The following provides additional guidance in relation to flood proofing measures which have been described above. These flood proofing measures shall apply to all development which will have the potential to be flood affected.

Electrical installations

Electrical fixtures such as power points, light fittings and switches are to be sited above the FPL unless they are on a separate circuit (with earth leakage protection) to the rest of the building.

Building Materials

Where parts of the building are proposed to be below the FPL, they are to be constructed of water-resistant materials.

Large buoyant objects

Areas where cars, vans and trailers etc are parked, displayed or stored are not to be located in areas subject to property hazard. Containers, bins, hoppers and other large floatable objects also are not to be stored in these areas. Heavy vehicle parking areas are not to be located in areas subject to property hazard.

Method of construction

Timber framed, light steel construction, cavity brickwork and other conventional domestic building materials are generally not suitable forms of construction where the property hazard is high. Where property hazard is high, the structure shall be certified by a practicing structural engineer to withstand the hydraulic loads (*including debris*) induced by the flood waters.

Structural Design

All buildings shall prior to occupation be certified by a civil or structural engineer that the structures can withstand the forces of floodwaters, buoyancy and debris loadings up to the 100 year ARI flood event plus freeboard.



Car Parks

- Where possible basement car parks are to be protected from inundation from the 100 year ARI flood event.
- The minimum surface level of open space car parking subject to inundation within high hazard areas shall be designed giving regard to vehicle stability in terms of depths and velocity during inundation by flood waters.

6 Supporting Documentation to be Submitted with an Application

6.1 Survey Plans

Development applications affected by this policy shall be accompanied by a survey plan showing:

- the position of the existing building/s or proposed building/s;
- the existing ground levels to Australian Height Datum around the perimeter of the building and contours of the site, and,
- the existing and proposed floor levels relative to Australian Height Datum.

Applications for earthworks, filling of land and subdivision shall be accompanied by a survey plan (with a contour interval of 0.1m) showing relative levels to Australian Height Datum.

6.2 Flood Impact Assessment and Flood Risk Assessment

Where required by the matters for consideration outlined in **Section 5**, a Flood Impact Assessment is to be supplied addressing the issues outlined in Appendix L of the New South Wales Government (2005) Floodplain Development Manual.

For large scale developments, or developments in critical locations, particularly where an existing catchment based flood study is not available, it may be necessary to prepare a flood study based on the results of a fully dynamic one or two dimensional computer model. Alternatively, where a flood study already exists, it will be necessary to use the hydraulic model developed for that flood study to assess the development proposal. In either case, the assessment should:

- quantify the potential impact of the development proposal on flood behaviour elsewhere in the floodplain and particularly across adjoining land/properties; and,
- determine the potential impact of flooding on the development proposal and the future users of the development plus the cumulative impacts resulting from the development.

The following information shall be submitted in plan form for the pre-developed and post-developed scenarios:



- flood profiles for the full range of events for total development including all structures and works;
- water surface contours;
- velocity vectors;
- velocity depth product contours; and,
- delineation of flood risk precincts relevant to individual floodplains.

Alternatively, the flood impact assessment can include flood level, velocity and hazard difference mapping that shows the increase in each of these flood characteristics due to the proposed development. These increases are to be considered and commented on in the context of the NSW Government's Flood Prone Land Policy.

Applicants should check with Council Officers to confirm the need for a specialist flood study. For smaller developments consideration may be given to the use of an existing flood study if available and suitable (*e.g. it contains sufficient local detail*), or otherwise a flood study is to be prepared. Where the controls for a particular development proposal require an assessment of structural soundness during potential floods, the following impacts must be addressed:

- hydrostatic pressure,
- hydrodynamic pressure,
- impact of debris, and
- buoyancy forces.

Alternatively, or together with a flood impact assessment, the applicant may be required to prepare a flood risk assessment for the proposed development. The assessment will be required to demonstrate that the full range of risks associated with flooding at the site have been considered and suitable measures proposed to adequately mitigate the risk.

7 References

1. Department of Environment and Climate Change (2007), 'Floodway definition – Floodplain Risk Management Guideline'.
2. Griffith City Council (2010), 'Griffith Aerodrome Overland Flow Flood Study' prepared by WMAwater.
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4. Griffith City Council (2006), 'Griffith Flood Study (Issue No. 3)', prepared by Patterson Britton & Partners.
5. Griffith Floodplain Risk Management Study and Draft Floodplain Risk Management Plan 2011, prepared by WorleyParsons Pty Ltd.
6. Griffith City Council (2002), 'Griffith Local Environmental Plan 2002'.
7. Griffith City Council (1996), 'Interim Development Order No. 1'.
8. Griffith City Council, Floor Levels Policy, CS-CP-318.



9. New South Wales Government (2005), 'Floodplain Development Manual: the management of flood liable land'; ISBN 0 7347 5476 0.
10. Griffith CBD Catchment Overland Flow Flood Study (2012), prepared by WMAwater
11. Griffith Major Overland Flow Floodplain Risk Management Study and Plan for CBD Catchments (2013), prepared by WMA
12. Lake Wyangan Flood Study (2012), prepared by BMT WBM.
13. Land Wyangan (Draft) Floodplain Risk Management Study & Plan (2013), prepared by BMT WBM



Risk Profile and Assessment Criteria for Earth Dams used for Commercial Aquaculture Production in the Griffith Local Government Area CS-CP- 406

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	10/06/2014	0191	10/06/2014
2	22/08/2017	17/205	22/08/2017
3	23/08/2022	22/209	23/08/2022

2 Policy Objective

To establish appropriate criteria for assessing development proposals for commercial aquaculture production in existing or new earth dams in the Griffith Local Government Area.

3 Policy Statement

3.1 Purpose

Whilst farm dams less than 15 ML can be constructed for water storage purposes without development consent and dams greater than 15 ML with consent, their use for commercial aquaculture creates a greater risk of potential groundwater contamination because of the quantities of feed of unknown composition, excreta, detritus and the possible presence of other organic and inorganic contaminants such as antibiotics, growth stimulants and heavy metals. Should contamination occur, there may be impacts on other groundwater users and the environment by way of water sources connected to groundwater, as well as salinity migration.

It is therefore reasonable to assess the risk of groundwater contamination when proposals for aquaculture production are being considered, and should a risk be determined, to require certain mitigation actions.

The level of risk (from level 0, low risk, to level 2, high risk) determines the risk mitigation requirements. It is also the case that some proposals will seek to use existing farm dams and others will be constructing new dams, thereby justifying a differential approach to risk assessment and management.

3.2 Scope

This procedure applies to unlined earth dams used for commercial aquaculture production and not aquaculture production in sealed tanks or ponds.

Aquaculture takes a broad definition to include all species.



Commercial production is defined as that requiring a licence or permit from another Agency, including but not limited to permits issued under Part 2(4) of the Fisheries Management (Aquaculture) Regulation 2017.

“Extensive” and “Intensive” aquaculture are as defined in Part 1(3) Definitions of the Fisheries Management (Aquaculture) Regulation 2017.

The various maps referred to in assessing the Risk Profile are those contained in Griffith City Council Local Environment Plan 2014.

Flood prone land is that defined by any Flood Study adopted by Council or draft Flood Study that has been exhibited.

Earth dams can be excavated earth tanks where the high water level is lower than or the same as the natural surface, or those where excavated earth is used to construct an embankment designed so that the high water level is above natural surface. For the former, the separation distances defined in the Risk Profile are measured from the high water level. For the latter, the separation distances defined in the Risk Profile are measured from the outside toe of the earth bank. See Figures 1 and 2.

Most earth dams are likely to exhibit small seepage rates. For the purpose of these procedures, a negligible seepage rate net of inflows and evaporation is defined as less than 3.5 mm per day change in water depth when the dam is near full.

Figure 1 – Excavated earth tank

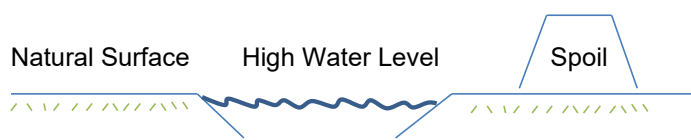
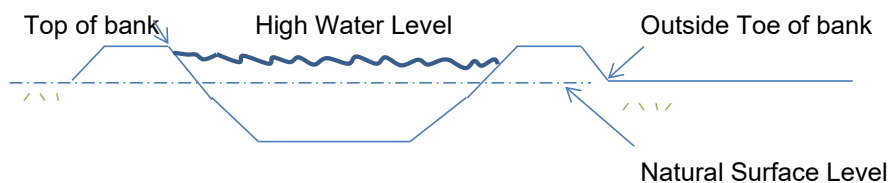


Figure 2 – Earth dam with compacted embankment





3.3 Risk Profile for commercial aquaculture production in earth dams

Level 2

- Dam located within Groundwater Vulnerability Map, or
- Dam located less than 20m from an area identified in Wetlands Map, or
- Dam located less than 20m from an area identified in Riparian Lands and Watercourses Map, or
- Dam located on flood prone land, or
- Dam located less than 100m from an existing stock and domestic groundwater well or bore, or
- Result following application of the Simple Water Balance Model to existing dams (see Risk Mitigation Measures) for 14 days is not negligible.

Level 1

- Dam located less than 20m from property boundary, or
- Dam located less than 20m from a water supply channel other than a terminal channel used to supply the dam, or
- Insufficient clay content in the earth at the dam location, as demonstrated by the field assessment of soil texture known as the “ribbon test”, or
- Visual evidence or evidence from simple field tests of unstable soil such as dispersion, slumping, slaking, rilling or erosion, or
- For existing dams, visual evidence of existing water ponding or seepage on or adjacent to the exterior of the embankment

Level 0

None of the above



3.4 Risk Mitigation Measures for Commercial Aquaculture Production in Earth Dams

Risk Profile	Existing earth dams	New earth dams	
		Extensive aquaculture	Intensive aquaculture
Level 0	No measures required	Construction of dam by competent and experienced operator.	Geotechnical report required to determine construction method, and Construction of dam in accordance with the geotechnical report by competent and experienced operator.
Level 1	Simple Water Balance Model applied for 14 days	Geotechnical report required to determine construction method, and Construction of dam in accordance with the geotechnical report by a competent and experienced operator.	Geotechnical report required to determine construction method, and Construction of dam by competent and experienced operator, and Geotechnical certification that dam constructed in accordance with report.
Level 2	Superior Water Balance Model applied for 56 days	Geotechnical report required to determine construction method, and Construction of dam by competent and experienced operator, and Geotechnical certification that dam constructed in accordance with report.	Geotechnical report required to determine construction method, and Construction of dam by competent and experienced operator, and Geotechnical certification that dam constructed in accordance with report.



3.5 Water Balance Model used to measure water seepage rates

Seepage Rate (mm/day) = change in water level when dam near full (mm) + rainfall (mm, based on 'top of bank' surface area) + inflows (converted to mm) – evaporation (mm)

Simple Water Balance Model:

- Change in water level measured from temporary peg
- Rainfall measured by on site rain gauge
- Survey of top of bank and high water level required to calculate rainfall and inflow effects
- Evaporation assumed from Bureau of Meteorology published data
- 14 day duration of measurements

Superior Water Balance Model:

- Change in water level measured from within a still water chamber
- On site weather station for rainfall and evaporation measurements
- Survey of top of bank and high water level required to calculate rainfall and inflow effects
- 56 day duration of measurements
- Independent verification of measurements
- May also require piezometer installation and measurements

3.6 Other considerations

Existing dams with a Risk Profile of Level 1 or Level 2 will not be approved for commercial aquaculture production if seepage rates are above negligible.

Treatments are available to reduce seepage rates (imported clay; scarifying and re-compaction; incorporation of flocculating materials; impermeable membrane liners) and approval will be reconsidered if treatment results in a negligible seepage rate.

Griffith City Council strongly recommends a pre-DA lodgement meeting for aquaculture projects.

1. Rowland, S.J. (n.d.), Site Selection and Design for Aquaculture, NSW Department of Primary Industries (available from the Department web site).
2. Regulation 4 of the Fisheries Management (Aquaculture) Regulation 2017.
3. Regulation 3 of the Fisheries Management (Aquaculture) Regulation 2017.
4. Griffith Local Environment Plan 2014.
5. Various Griffith City Council Flood Studies.

4 Definitions

None



5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Smoke-Free Outdoor Areas EH-CP- 202 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	13 Dec 2011	0400	13 Dec 2011
2	13 Aug 2013	0255	13 Aug 2013
3	22 Aug 2017	17/205	22 Aug 2017
4	23 Aug 2022	22/209	23 Aug 2022
5	13 Feb 2024	24/031	13 Feb 2024

2 Policy Objective

The objectives of Griffith City Council in banning smoking and using e-cigarettes on Council owned and controlled land, outdoor public areas and within vehicles is to:

- Improve the health of community members;
- Improve public amenity and maintenance of Council property;
- Raise community awareness of the issues associated with smoking;
- Provide community leadership in taking measures to protect the health and social wellbeing of the community; and
- Minimise cigarette butt pollution on Council owned and controlled land and within public places.

3 Policy Statement

This policy prohibits smoking and using e-cigarettes in the following areas on Council owned and controlled land, outdoor public areas and within vehicles specifically:

- Within ten (10) metres of all children's playground equipment in outdoor public places;
- Public swimming pools;
- Spectator areas at sports grounds or other recreational areas used for organised sporting events;
- Public transport stops and platforms, including taxi ranks;
- Within 4 metres of a pedestrian access point to a public building;
- In commercial outdoor dining areas being:
 - a seated dining area;
 - within 4 metres of a seated dining area on licensed premises, restaurant or café; and
 - within 10 metres of a food fair store or on public land as approved by Council.
- Within ten (10) metres of Council owned or managed buildings; and
- Within cars with a child under the age of 16 years in the vehicle.



3.1 Principles

This policy recognises that Council has:

- An obligation to promote public health outcomes where Council provides assets and services intended to be of benefit to children and other members of the community;
- A commitment to improve the natural environment and the amenity of the local area by reducing the amount of cigarette butt litter found in outdoor spaces;
- An understanding that the damaging effect of passive smoking and using e-cigarettes while well documented in regard to indoor areas, is also beginning to emerge in regard to outdoor areas; and
- An acknowledgement that the indirect effects of people smoking and using e-cigarettes in an outdoor area can result in children playing with and swallowing discarded cigarette butts; cigarette-derived particles accumulating on clothing and skin; and smoking causing sensory irritations such as eye watering, coughing, difficulty in breathing or asthma.

3.2 Authorised Persons

The following Griffith City Council staff are “authorised persons”:

- Environment & Public Health Coordinator
- Compliance Officers
- Planning & Environment Compliance Officer

The following State Government staff are “authorised persons”:

- NSW Health Authorised Inspectors
- NSW Police

3.3 Signage

The following open space areas will be signposted via signage or adhesive stickers, wherever practicable, to provide smoke-free zones:

- Within ten (10) metres of all children's playground equipment in outdoor public places.
- On all public land used for commercial outdoor dining areas being: a seated dining area; within 4 metres of a seated dining area on licensed premises, restaurant or café; within 10 metres of a food fair store or on public land as approved by Council (alternatively agreement/lease conditions may be used).
- Within ten (10) metres of Council owned building entrances.



3.4 Leases, licenses and other Council agreements

Council buildings and outdoor dining areas that are leased, licensed or hired by Council will have smoke-free clauses inserted into their agreements for use.

3.5 Enforcement

In implementing Council's Smoke-Free Outdoor Areas Policy a program of community education and awareness, specifically targeting residents and day visitors, may be undertaken.

Where Councils have policies which prohibit smoking and using e-cigarettes in locations not covered by state-wide legislation (Smoke-free Environment Act 2000) or where policies go further than the state bans, they are enforced by Council.

Enforcement of this Policy will be supported by persuasion and self-policing rather than by punitive enforcement.

4 Definitions

Smoke means use, consume, hold or otherwise have control over a tobacco product, non-tobacco smoking product or e-cigarette that is generating smoke or an aerosol or vapour.

5 Exceptions

None

6 Legislation

Under the NSW Local Government Act 1993 Council has the power to:

- Erect suitably worded and strategically placed notices in “public places” (such as places including but not limited to public reserves, Crown reserves, public bathing reserves, public baths, public swimming pools, public parks and public roads) within the local government area of Griffith prohibiting smoking (s.632 (1) and (2)(e) of the Act);
- Serve, by means of an authorised person, a penalty notice (current Penalty \$110.00) upon any person who fails to comply with the terms of any such notice (s.679 of the Act and cl.5-7 of, and Schedule 1 to, the General Regulation);
- Demand by means of an authorised person, the name and address of any person reasonably suspected of failing to comply with the terms of any such notice (see, relevantly, s.680 of the Act);



- Remove, by means of an authorised person, from community land any person who fails to comply with the terms of any such notice (s.681 of the Act); and
- Otherwise prohibit smoking and using e-cigarettes in any place within the local government area of Griffith, in respect of which Council is the owner or occupier, as a condition of entry to that place.

The *Smoke-free Environment Act 2000* has been amended to ban smoking and using e-cigarettes in the following outdoor places from 7 January 2013:

- Within 10 metres of children's play equipment in outdoor public places;
- Public swimming pools;
- Spectator areas at sports grounds or other recreational areas used for organised sporting events;
- Public transport stops and platforms; including ferry wharves and taxi ranks; and
- Within 4 metres of a pedestrian access point to a public building.

The ban on smoking and using e-cigarettes in commercial outdoor dining areas in licensed premises and restaurants commenced on 6 July 2015.

7 Related Documents

(WHS-PO-019) Smoking Policy – Internal Policy

8 Directorate

Sustainable Development



Waste – Septic Tanks EH-CP- 801 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	27 Jun 1991	C339	27 Jun 1991
2	14 Jan 2003	25	14 Jan 2003
3	11 May 2010	0142	11 May 2010
4	13 Aug 2013	0255	13 Aug 2013
5	22 Aug 2017	17/205	22 Aug 2017
6	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To require effective and hygienic disposal of effluent from all occupied premises.

3 Policy Statement

Council requires the installation of an on-site sewage management system to all occupied premises that cannot be serviced by sewer drainage.

4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development



Solar Energy Farms and Battery Energy Storage Systems (BESS) Policy SD-CP-202

(LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	23/07/2024	24/203	23/07/2024

2 Policy Objectives

The objectives of the policy are as follows:

- To minimise potential land use conflicts.
- To ensure any visual impacts of the development are mitigated.
- To avoid the sterilisation of productive agricultural land where possible.
- To ensure that adequate provisions are made to restore developed land at the end of the life of the development.
- To ensure hazards and risks associated with Battery Energy Storage Systems (BESS) are assessed with mitigation measures (if required) proposed to avoid offsite impacts.

3 Policy Application

Land to which this policy applies

This policy applies to all land within the Griffith local government area.

Application of the Policy

This policy applies to all new development applications for electricity generating works involving solar photovoltaic systems (solar farms) with a capacity of more than 1.0 MW which are not co-located with a large-scale electricity user such as an industry. The policy also applies to all development applications for electricity generating works involving Battery Energy Storage Systems (BESS). The policy does not apply to electricity generating works which can be installed under State Environmental Planning Policy (Transport and Infrastructure) 2021 or State Environmental Planning Policy (Exempt and Complying Development) 2008 as exempt or complying development.

4 Background

Solar farm and BESS developments are considered forms of electrical generating works as defined in the Griffith Local Environmental Plan 2014 and State Environmental Planning Policy (Transport and Infrastructure) 2021.



Consent Authority

The consent authority for electricity generating works varies based on the capital investment value of the development. State Environmental Planning Policy (Planning Systems) 2021 includes triggers for Regionally significant development and State significant development:

- i. Regionally significant development: Electricity generating works with a Capital Investment Value (CIV) of more than \$5 million, but less than \$30 million. The Regional Planning Panel is the consent authority for Regionally significant development.
- ii. State significant development: Electricity generating works with a CIV of more than \$30 million. The Minister for Planning or delegate is the consent authority for State significant development.
- iii. Local development: Electricity generating works with a CIV of less than \$5 million. Griffith City Council or delegate is the consent authority for local development.

5 Site Selection

Site selection is an important component of a solar farm or BESS development. The Applicant must carefully consider a range of sites and carry out a constraints and opportunities analysis to justify the proposed location of a solar farm or BESS development.

The following types of sites should be avoided:

- a) Sites which contain class 1 – 3 (land and soil capability class) (LSC) soils as depicted on the Land and Soil Capability Mapping for NSW (available at: <https://espade.environment.nsw.gov.au>).
- b) Sites which have a delivery entitlement and volume of water available under that entitlement that is or will be adequate for the use of the land for the purpose of intensive plant agriculture and the lands are currently or have historically been cultivated for intensive plant agriculture crops without severe limitations.
- c) Sites which are located in low lying areas visible from elevated perspectives from visual receivers.
- d) Sites which are located less than 1 km from land zoned R1 – General Residential, R5 – Large Lot Residential or RU5 – Village.
- e) Sites located on classified or arterial roads.
- f) Sites which are located in positions which would have a visual impact on nearby properties, especially existing dwellings and lots on which dwellings could be constructed in the future.

6 Mandatory Assessment Requirements

- a) The Assessment issues and requirements detailed in the NSW Department of Planning, Housing and Infrastructure (DPHI) **Large Scale Solar Energy Guidelines** (the



Guidelines) (Section 5 and Appendix A and C) must be followed in the preparation and submission of a development application for any solar farm or BESS, including (but not limited to) the following technical studies, plans or considerations:

- i) Visual Impact Assessment.
 - ii) Landscape Character Assessment and Concept Landscape Plan.
 - iii) Agricultural Impact Assessment.
 - iv) Waste Management and Circular Design assessment and plan.
 - v) Decommissioning Plan.
 - vi) Glint and Glare Assessment in accordance with Appendix C of the Guidelines.
 - vii) Traffic Impact Assessment.
 - viii) Noise and Vibration Assessment.
 - ix) Concept Civil Plans for stormwater, services and site access.
 - x) Consideration of the power frequency and electric and magnetic field exposure guidelines referenced by the Australian Radiation Protection and Nuclear Safety Agency.
- b) Other Assessment Requirements (which will be required by Council based on the selected site and particulars of the proposal):
- i) Biodiversity Assessment in accordance with the *Biodiversity Conservation Act 2016*.
 - ii) Aboriginal Cultural Heritage Assessment.
 - iii) Flood Impact Assessment.
 - iv) Air Quality Assessment.
 - v) Preliminary Hazard Analysis (PHA) is required for all developments which include BESS. The PHA must be prepared in accordance with Hazardous Industry Planning Advisory Paper No 4 – Risk Criteria for Land Use Safety Planning, Hazardous Industry Planning Advisory Paper No 6 – Hazard Analysis and Multi-level Risk Assessment.
 - vi) Workforce management plan including workforce accommodation considerations during construction.
 - vii) Geotechnical Investigation.
 - viii) Preliminary Site Investigation (contamination).

7 Development Controls

The following development controls must be considered by the Applicant and will be considered by Council in the assessment of the development application.

- a) The development must be sited and carried out to minimise the impacts on farming, residential, tourism and business operations in the locality.
- b) The developer should assess the cumulative impact of the development having regard to solar energy farms already built and those approved but not yet constructed. Council does not favour large expanses of land being covered with solar energy farms where there is significant cumulative impact.



- c) Where the proposal is located within a 5km radius from the extent of urban and villages, the proposal (including the Visual Impact Assessment) must demonstrate that it will not impact on the scenic value and character of the locality.
- d) Solar farms should be located at least 25 m from all property boundaries and 200 m of any dwelling not associated with the development or residential zoned land.
- e) BESS should be located at least 50 m from all property boundaries and 500 m from any dwelling not associated with the development or residential zoned land.
- f) A 10 metre wide landscape buffer with native species designed to screen solar farms or BESS from roads and dwellings must be installed to ensure a minimum height at maturity of 3 metres.

8 Conditions of Consent for Solar Farms and BESS

The following conditions of consent will be imposed by Council on development consents for Solar Farms and BESS to ensure adequate financial assurances for site rehabilitation are in place:

Prior to the commencement of works, the Applicant must provide a mechanism to ensure sufficient funding is available to rehabilitate the site following the lifespan of the solar farm or BESS. This could include a form of financial assurance (bond) held by the landowner of the site or other suitable mechanism. Proof of this ongoing financial assurance must be submitted to Council prior to the commencement of works.

Note: Other conditions would be imposed by Council based on the assessment of the development and in consideration of standard conditions of consent.

9 Conditions of Consent for BESS

The following conditions of consent will be imposed by Council on development consents for BESS:

- a) Prior to the commencement works, the Applicant must prepare a Fire Safety Study (FSS) in accordance with Hazardous Industry *Planning Advisory Paper No 2 (HIPAP No.2) Fire Safety Study Guidelines* (Department of Planning, Housing and Infrastructure 2011) and *Large-scale external lithium-ion battery energy storage systems – Fire safety study considerations* (Fire and Rescue NSW, 2023).
- b) Prior to the commencement works, the Applicant must prepare an Emergency Response Plan in accordance with *Hazardous Industry Planning Advisory Paper No 1 (HIPAP No.1) Emergency Planning* (Department of Planning, Housing and Infrastructure 2011).

Note: Other conditions may be imposed based on the findings and recommendations of the PHA and a peer review carried out by or on behalf of Griffith City Council.

10 Definitions



Term	Definition
Applicant	The Applicant of a proposal seeking consent for a development application or modification application.
Consent Authority	The authority responsible for granting or refusing consent for a development application or modification application.
Decommissioning	The removal of solar panels and ancillary infrastructure and the re-establishment of the site for its previous use.
Glare	A continuous source of bright or strong light caused by the reflection of sunlight on a solar energy project.
Glint	A momentary flash of bright or strong light caused by the reflection of sunlight on a solar energy project.
Landscape	A holistic area comprised of its various parts including landform, vegetation, buildings, villages, towns, cities and infrastructure.
Landscape Character	An area or sense of place definable by the quality of its built, natural and cultural elements.
Electricity Generating Works	means a building or place used for the purpose of— (a) making or generating electricity, or (b) electricity storage.
Visual Receiver	An individual and or defined groups of people who have the potential to be affected by a proposal from a view location.
View Location	A place or situation from which a proposed development may be visible.

11 Legislation

Environmental Planning and Assessment Act 1979

Environmental Planning and Assessment Regulation 2000

State Environmental Planning Policy (Exempt and Complying Development) 2008

State Environmental Planning Policy (Hazards and Resilience) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Planning Systems) 2021

Griffith Local Environmental Plan 2014

12 Related Documents

NSW Department of Planning, Housing and Infrastructure (DPHI) Large Scale Solar Energy Guidelines (as amended)

Hazardous Industry Planning Advisory Paper No 1 (HIPAP No.1) Emergency Planning (Department of Planning, Housing and Infrastructure 2011)

Hazardous Industry Planning Advisory Paper No 2 (HIPAP No.2) Fire safety Study Guidelines (Department of Planning, Housing and Infrastructure 2011)

Large-scale external lithium-ion battery energy storage systems – Fire safety study considerations (Fire and Rescue NSW, 2023)



13 Directorate

Sustainable Development



Footpaths – Construction of WO-CP- 501 (LOCAL POLICY)

1 Policy History

Revision No.	Council Meeting Date	Minute No.	Adoption Date
1	28 Apr 1992	C218	28 Apr 1992
2	14 Jan 2003	25	14 Jan 2003
3	8 Apr 2008	0129	8 Apr 2008
4	22 Apr 2008	0140	22 Apr 2008
5	11 May 2010	0142	11 May 2010
6	13 Aug 2013	0255	13 Aug 2013
7	22 Aug 2017	17/205	22 Aug 2017
8	23 Aug 2022	22/209	23 Aug 2022

2 Policy Objective

To establish a standard for the construction of new or replacement of paved footpaths.

3 Policy Statement

Any new or replacement footpaths constructed in the Griffith city centre (Figure 1) are to be constructed as per the advice of the Urban Design team and consistent with the recommendations listed in the Griffith CBD Strategy.



FIGURE 1

Other areas are to be considered on their merits.



4 Definitions

None

5 Exceptions

None

6 Legislation

None

7 Related Documents

None

8 Directorate

Sustainable Development