St Peter's Coleambally

A Community of Faith

17.10.2017

Ruth McRae
Mayor
Murrumbidgee Council

Dear Ruth,

I write this letter to put my support behind the proposed bus parking zone out the front of our school on Currawong Crescent, Coleambally that has recently been discussed with me and other members of our School Council.

The current practice of the eight buses dropping off and picking up in the bus zone on the road causes traffic congestion and serious safety concerns for other drivers travelling along Currawong Crescent or Bellbird St, parents picking their children up after school, pedestrians and students walking or riding home after school.

I believe the proposed bus zone would alleviate these concerns by giving the buses an area off the road to stop and drop off and pick up children.

If you would like further information or have any questions please don't hesitate to ask.

Yours faithfully,

Daniel Tuohey

Principal

Currawong Crescent COLEAMBALLY 2707
Phone – 0269 544178 Mobile - 0487544179
Email – spc-info@ww.catholic.edu.au

DRAFT Murrumbidgee Council Community Strategic Plan

Murrumbidgee Council values creativity and innovation to reliably deliver quality services and facilities to its communities. It does this through traditional principles and forward thinking that provide strong, positive leadership to nurture who we are, where we live and what we have built. Our communities are welcoming and energetic – fun and friendly places that appeal to all with everything you need.

Key strategic directions – Statement of Vision and priorities

Our Community - Who we are

We support all members of our Council Community. We strive to ensure they feel safe and are actively and passionately involved in establishing and promoting a connected and respected Council Area by facilitating equitable access to community infrastructure and services – health, care, education and transport. The diversity of our three towns serve to create a stronger and ever-evolving Murrumbidgee Community which values its rural lifestyle as the place the work and live sustainably into the future

Our Natural Environment - Where we live

We live in a unique natural environment that we value highly. We undertake a guardianship role to ensure and enhance its long term sustainability through appropriate practices and management.

Our Built Environment - What we have built

Our well-planned infrastructure is developed and maintained according to identified community needs and priorities, encouraging community connectivity and partnerships through well serviced social, health, built and community infrastructure including transport, communications and road infrastructure and sustainable, planned water, energy and waste management

Our Economy - Creating our own opportunities

Creating our own opportunities, we work with new and existing business and industries to proactively provide regional economic opportunity, development and tourism creating stability and future growth.

Our Leadership - Looking to our future

	Council's leadership role encompasses responsibly establishing effective, relevant, representative leadership and relationships with Government and non-government stakeholders ensuring sound, future-focused outcomes for the whole of Murrumbidgee Council. The leadership challenge is in developing a holistic approach that operates ethically, implements good governance to develop and ensure a positive future for the Community.
THEME 1: COMMUNITY WHO WE ARE: Innovative, Reliable, Community, Fun, Just do it, Strong, Friendly, Welcoming, Helpful, Happy, Action-oriented, Energetic, Adventurous, Forward-thinking, Push boundaries, Approachable, Traditional	
We support all members of our Council Community. We strive to ensure they feel safe and are actively and passionately involved in establishing and promoting a connected and respected Council Area by facilitating equitable access to community infrastructure and services – health, care, education and transport. The diversity of our three towns serve to create a stronger and ever-evolving Murrumbidgee Community which values its rural lifestyle as the place the work and live sustainably into the future.	
Community objectives	1.1 An empowered, connected and caring community where people look out for each other, develop and grow a community understanding of shared responsibility by engaging and involving the community in decision making 1.2 We celebrate and protect our cultural identity, history and heritage 1.3 Equitable access to a range of council services and programs –health, education, sporting, social supporting Community needs and providing opportunities for people of all ages. 1.4 P Promote participation ensuring our diverse community is connected across geographic, interest, cultural and social groups, with equal access to opportunities for social interaction1.5 Our community is safe and accessible assisting in the prevention of crime and anti-social behaviour and activities.

Community Actions – how we will achieve our objectives – the process we intend to use	• 1.5.1 Liaise with local police and state government to increase police presence and visibility in our area • 1.5.2 Provide adequate street and security lighting in our towns • 1.5.3 Where appropriate seek funding for community safety programs. • 1.5.4 Provide adequate activities for young people and facilities they can use to keep them entertained in a safe environment • 1.5.5 Maintain and develop existing road safety initiatives within the shire • Improve and increase the availability of community transport so that we have access to nearbyservices outside our shire • Develop an aged care facility in Darlington Point • Encourage private enterprise development of a retirement facility • Ensure we retain our local GP • Establish a community health facility where allied and specialist health service providers can operate as visitors • Expand our community services programs • Ensure that we have access to a broad range of mental health services • Promote and develop Aboriginal health services • Investigate opportunities for developing a residential university campus offering courses that relate toagriculture, irrigation and allied professional areas • Investigate possibility of establishing a U3A in our shire to provide access to education and interaction for our aged and those with disabilities • Foster current sporting, social, recreational and cultural events andactivities to increase participation and inclusion. • Develop new events to attract those with interests in special areas • Encourage the development of a range of sporting options, particularly for young people • Provide opportunities for the towns to interact more to ensure a greater sense of connectedness and create closer bonds • Investigate how we can offer more entertainment options for young people e.g. Blue Light Discos • Investigate the possibility of opportunities other than Australia Day when our community can celebrate together • 1.2.1 Provide opportunities for our community to showcase their heritage and diversity

Community outcomes – what will show we have achieved the measurable and quantifiable KPIs we report against	• Well-functioning and sustainable community groups and clubs • A community that volunteers and supports each other • Dynamic and responsive community projects and governance • Regular public acknowledgement of the achievements of our community's members • Implement a calendar of events that encourages visitors and allows community members to come together • A safe community for residents and visitors • A community that is accessible for people of all ages and abilities • We have well connected children • A great place to be for our young people • A supportive community for families • Support and engage our older people • Opportunities for lifelong learning • 1.2.2 Protect and restore our historic places and spaces • 1.2.3 Unique historic stories from across the Council area are celebrated and protected

THEME 2: ENVIRONMENT

WHERE WE LIVE: Community, Recognisable, Simple, Everything you need, Forward-thinking, nurturing, appeals to all

We live in a unique natural environment that we value highly. We undertake a guardianship role to ensure and enhance its long term sustainability through appropriate practices and management..

Environment (Natural) objectives	2.1 As custodians of our natural environment, we will work to preserve it for future generations in a way that respects and protects our natural environment (including flower and fauna), showcases and shares it with others in a way that sensitively mages its assets showcases and shares with others but in a way that is sensitive to the impacts people can cause 2.2 Explore, embrace and promote ways to reduce our carbon footprint including alternate sustainable energy sources and sustainable practices 2.3 Responsibly maintain a balance between growth, development and environmental protection 2.4 Collectively provide safe, efficient and responsible waste management and recycling services through a responsible waste management strategy aimed at encouraging reducing, reusing and recycling to meet a long term goal of achieving zero waste. 2.5 Protect waterways and catchments which are appreciated and valued and secure high quality water supplies for the towns in the region. 2.6 Protect our native flora and fauna
Environment (Natural) Actions – how will be achieve our objectives - process	• Expand our network bush land walking trails to encourage active experiences of our river side location and protect the surrounding bush • Manage weeds across the shire • Educate and inform the community on weed management • Establish a list of native plants that are natural to or thrive in this region and provide this information to people establishing gardens • Develop a nursery that propagates and promotes native plants • Promote responsible water usage particularly in the town areas • Encourage community groups to “adopt” areas of bush land that need restoration and regeneration • Explore opportunities for native fish restocking and the elimination of carp • Restore and revitalise Tiddalik

Environment (Natural) – outcomes – measurable KPIs	• Recycling opportunities exist for the community • Waste management strategies are implemented across the shire • Our community actively protects the natural environment • There is a decreased occurrence in the spread and impact of weeds throughout our shire • Innovative ways to protect our environment have been implemented • Reduced impact of pests on our community • High water quality in all of our waterways • Responsible community use of our natural wetlands and waterways • Our native flora and fauna is protected and flourishing

THEME 3: INFRASTRUCTURE

WHAT WE HAVE MADE: Innovative, Community, Building, Quality, Positive, Creative, Recognisable, Simple, Everything you need, Forward-thinking, appeals to all

Our Community is well serviced and connected to well-planned built, social and community infrastructure which is developed and maintained according to identified community needs and priorities encouraging community connectivity and partnerships through well serviced social, health, built and community infrastructure including transport, communications and road infrastructure and sustainable, planned water, energy and waste management.

Environment (Infrastructure) - Objectives	3.1 We manage and maintain our infrastructure responsibly including supporting and developing new community facilities and services 3.2 The infrastructure we provide is responsive to community needs supporting health medical and education facilities and services 3.3 Our infrastructure provides the community with the ability to be active 3.4 Maximise, maintain and improve road, air and transport infrastructure to travel within our shire is safe and accessible through improved (public) transport links across the region and with major regional centres 3.5 Our infrastructure is designed to meet needs for the future including supporting improvements to our communications infrastructure ensuring better broadband, mobile phone and data coverage access across the region
Environment (Infrastructure) Actions – how we will achieve our objectives	• Reconstruction of the Darlington Point Levee • Maintain roads to acceptable standards and ensure that school bus routes are always trafficable • Improve the Darlington Point Water supply—consider water treatment, something to improve waterpressure and replacement of pipes • Redevelop the Darlington Point golf course • Develop riverside locations for the enjoyment of all and to promote tourism • Increase the number of walking tracks in both towns and their surrounds • Provide marked cycle paths on roadways • Encourage the development of a man-made lake development on the outskirts of Coleambally • Complete the median strip beautification in Coleambally • Provide signage to show visitors where they can park their caravans and RVs in all towns • Better maintain footpaths to minimise risks to the young and elderly • Heat the pools to extend the swimming season • Improve local road signage to inform tourists and also signage to warn about dips in roads • Move the Darlington Point Sewage Treatment works to the outskirts of town • Consider using treated water from the Darlington Point sewage treatment works for beautification of thetown (for example watering the golf course) • Provide shelter at all cemeteries • Provide toilet facilities at Coleambally cemetery • Develop Shire “entry statements” on the main entries to our shire i.e. Sturt and Newell Highways and Kidman Way • Provide disabled access to the shopping precincts

Environment (Infrastructure) - Outcomes	• Consistent and recognizable development themes throughout the shire • Protection of historic buildings and landmarks • Infrastructure that facilitates a community that is physically active • Deliver roads that ensure safe and enjoyable vehicular passage throughout the shire • Effective transport options and supporting infrastructure • Development infrastructure that supports growth within our community • Land use that supports the development of our community

THEME 4: ECONOMY

CREATING OPPORTUNITY: Innovative, Community, Building, Quality, Positive, Action-oriented, Everything you need, Forward-thinking, nurturing, appeals to all

Creating our own opportunities, we work with new and existing business and industries to proactively provide regional economic opportunity, development and tourism creating stability and future growth

Economy - Objectives

4.1 Welcome and support other economic development which is aligned and will contribute to the overall wellbeing of our community
4.2 Council is the driver of economic development for the Shire and promotes a regional economy
4.3 Jointly promote and develop tourism, strategies and opportunities ensuring a strong tourist sector exists within our LGA
4.4 Support and encourage new and existing business and industry to ensure there is a profitable and growing business and industry community
4.5 We have a community that has access to education and training that enhances their future opportunities
4.6 Foster and develop a resilient and vibrant agricultural sector
4.7 Infrastructure that supports growth, diversity and productivity of our businesses and industry base

Economy Actions – how we will achieve our objectives

- Actively support development which is congruent with our lifestyle, particularly opportunities to "value-add" to our agricultural pursuits
- Develop a "Centre for Irrigation Excellence" where we can promote how well we do things and showcase our local produce
- Encourage and promote tourism ventures and activities; particularly the provision of more tourist/visitor accommodation
- Pursue the early introduction of the National Broadband Network to our shire
- Establish Tourism/Visitor Centres in both our towns
- Council should consider developing retail space in Darlington Point to allow for more businesses; e.g. a bakery
- Encourage the development of a residential conference/education centre
- Provide other opportunities to promote local produce - for example regular farmer's markets
- Consider developing an artisan centre to provide opportunities for artists to promote their skills and attract tourists
- Council should employ an Economic Development Officer
- Appropriate resources (e.g. DVD's) should be developed to run a promotion campaign for our shire for:
- Promoting tourism
- Promoting the shire as a place where businesses are supported and encouraged and the infrastructure they require is in place
- Work with other levels of government and private industry to develop a "transport hub" at the intersection of the Sturt Highway and the Kidman Way
- Establish an industrial area for Darlington Point
- Consider developing a "Trades" Incubator Complex
- Encourage private development of retirement villages and aged care facilities
- Implement the goals of Council's Economic Development Strategy
- Encourage the development of affordable housing so it is available for employees of new developments
- Signage on the highways promoting our towns

Economic – Outcomes (KPIS)	• There is a better understanding of and involvement with the tourist sector across the LGA • There is a long-term tourism strategy developed and being implemented • New industry and businesses are being attracted to the shire • Establishing and long term businesses within the shire receive the support required from Council • There is improved access to education and training opportunities for our shire's residents • There is long-term security of access to water • Our self-sufficiency is supported by local food production • Strong and beneficial partnerships exist within our agricultural sector • The availability of service infrastructure to facilitate business growth and expansion • Appropriate infrastructure to support our commercial and industrial businesses has been established

THEME 5 LEADERSHIP

LOOKING TO THE FUTURE: Reliable, Community, Quality, Just do it, Strong, Friendly, Welcoming, Helpful, Action-oriented, Creative, Energetic, Adventurous, Forward-thinking, Push boundaries, Approachable

Council's leadership role encompasses responsibly establishing effective, relevant, representative leadership and relationships with Government and non-government stakeholders, ensuring sound, future-focused outcomes for the whole of Murrumbidgee Council. The leadership challenge is in developing a holistic approach that operates ethically, implements good governance to develop and ensure a positive future for the Community.

Leadership - Objectives	5.1 Council leads the community by example demonstrating a high level of leadership, accountability and representation of the community 5.2 Community leaders are recognised, encouraged and supported, especially young people through open and honest communication 5.3 Our community is passionate and engaged in its future 5.4 Accessible, effective and utilised services and programs for our community and actively investigate funding sources supporting and strengthening the region 5.5 Our relationships are productive and beneficial 5.6 We have strong and effective local government, including cooperating and collaborating with other Councils and stakeholders in the region to achieve cost savings, and a stronger voice in regional planning and funding decisions.
Leadership Actions – how we will achieve our objectives	• Promote opportunities for leadership development for our community groups • Develop programs for young people to improve their leadership skills • Consider another recognition program besides the Australia Day awards to recognise our community leaders • Encourage Aboriginal representation on Council

Leadership - Outcomes	• We have accessible and relevant local community engagementpractices • Council has a strong involvement in State planning for theregion • The communities understanding of the available services and programs is improved • There is an increased knowledge of the service needs of ourcommunity • Services that are best placed to meet the needs of our community are present within our LGA • Council staff have the tools and are motivated to provide excellent customer service • Provide opportunities for networking and encourage Council staff to actively network • Accessible and relevant local community engagementpractices • Provide the required support, resources and environment foran effective and productive local government team

CHARACTERISTICS OF A STRONG COUNCIL

MURRUMBIDGEE COUNCIL

TRANSFORM

SUSTAIN BEYOND 2017

Enduring characteristics	Longer term indicators	We know we are making progress by September 2017 through...
Strategic capacity The council is a strong partner in the system of government, with a strategic outlook, confidently representing and progressing matters of local and regional significance.	• There is a clear vision for the future and a pathway for achieving it • Governance frameworks enable councillors to fulfill their strategic role • Council can leverage its improved scale to partner with and influence State and Federal Governments in delivering local priorities and services	• Net financial savings (NPV) of $1.9 million over 10 years included in Council's financial forecasts • Net financial benefit (including New Council Implementation Grant) of $100,000 achieved by September 2017 • Community satisfaction index score of 75 out of 100 for Council's overall performance • 5 year costed capital renewal works program adopted by June 2017 • Increased proportion of staff who feel the organisation has a positive future and are committed to its success • More than 80% of major projects delivered on time and to budget • More than 50% of Community Grants Program funded projects delivered • Difference between community ratings of the importance of, and Council's performance on, the maintenance of unsealed roads reduced to less than 25 • Difference between community ratings of the importance of, and Council's performance on, the condition of local sealed roads reduced to less than 20 • Community satisfaction index score of 70 or more out of 100 for Council's performance in providing value for money for the community's rates • An increased proportion of services available online • More than 60% of staff feel positive and are well informed about the change process
Outstanding service provision Residents and businesses have an efficient, convenient and satisfying experience when using council services, information and infrastructure.	• Residents have easy access to services through their preferred channel • Businesses and residents have a positive experience of council service delivery • Residents have access to well-maintained community infrastructure • Regulation implementation is predictable, consistent and fair	
Robust community relationships Residents and businesses have a voice in the vision for their community and there is meaningful, open dialogue between the council and community on solving local issues.	• Effective community engagement mechanisms are in place, and enable an ongoing community conversation with meaningful participation • Council understands and considers the diversity of community views • Community has confidence in council as a trusted leader	
Strong performance The council is a robust, flexible and capable organisation that delivers on the needs of the community.	• Operations are efficient, and efficiencies are reinvested to the benefit of the community • Council demonstrates strong financial performance	
Sound organisational health Council staff, leadership and culture directly contribute to the council's success and to positive, customer-centric culture and delivery.	• Strong, diverse leadership and a culture that values performance and adaptability • A skilled, motivated and accountable workforce	

Community Engagement Framework

	Name	Position	Signature	Date
Responsible Officer	**Alison Coe**	**Assistant General Manager – Corporate and Community Services**		
Authorised By	**Craig Moffitt**	**General Manager**		

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Contents

Community Engagement Framework

Introduction

Effective community engagement not only provides Council with an opportunity to strengthen its relationship with the community, but provides for sound investment in better decision making by ensuring decisions are informed of community needs and aspirations. When done in a meaningful way, it contributes to building trust between the community and Council, and also raises the quality of, and strengthens representative democracy while building community capacity.

What is community engagement

Community engagement is a planned two-way process by which specific, identified groups of the community are given the opportunity to provide input that enhances decision making processes on issues that may impact on their well-being or interests. Murrumbidgee Council, in adopting this framework, will establish identified means as to how it will engage the community on a range of issues and in a number of different ways. In so doing, its intention is to work within the International Association for Public Participation (IAP2) Spectrum and has adapted this to the local community context.

Community engagement strengthens the trust between the community and Council by providing a platform for the community to have their voices heard, their views considered and acknowledged, and they are informed of, and involved in, issues which may impact on their lives.

Aim of framework

This framework has been developed to assist Council in undertaking community engagement activities with its diverse community. The framework aims at developing a consistent approach to community engagement, providing guidance on when and how to undertake engagement activities and what steps and processes should be considered. Specifically, the aims of this framework are to:

- Ensure community views are understood and considered when developing Council plans, strategies, policies and service delivery.
- Ensure the community has the opportunity to participate in the conduct of Council through inclusive and equitable engagement practices.
- Strengthen community connectedness by creating opportunities for the community to get involved with, and have their say on, matters which are important to them.
- Improve the relationship and level of trust between the community and Council by ensuring the community is informed about and involved in Council activities.
- Enhance the coordination, planning and promotion of Council's community engagement activities.
- Strengthen feedback and communication from Council so the community knows when and how their input has been considered to inform decisions.

While the framework aims at developing a consistent approach to community engagement across Council, some engagement and consultation activities may be the result of statutory requirements that specify the manner in which Council is to give notice, consult or engage with the community.

Principles and practice of Community Engagement

Principles

In accordance with the IAP2 Quality Assurance Guidelines and its adopted Core Values, Council's approach to effective community engagement will be:

1. Timely
   - Engagement with the community is planned during the project planning stages to maximise the level of influence the community is able to have.
   - The timing of community engagement activities avoids events such as school holidays and religious festivals.
   - Community engagement occurs preferably during the scoping and identification of issues.

2. Sincere, respectful and meaningful
   - Genuine opportunities are created for the community to participate in issues of significance to the community.
   - The purpose of the engagement is clear and members of the community are informed on how their involvement will influence the decision-making process.

3. Inclusive and accessible
   - All members of the community have a right to participate in the development of decisions that may impact on their lives.
   - Several methods of community engagement may be required to ensure engagement activities are responsive to community needs.
   - Consideration is given to engaging with community members of different cultures and faiths, abilities and family or working commitments.

4. Responsive
   - Council will actively engage with, and listen, to the diverse range of needs and expectations of the community.
   - Council commits to considering community feedback in an open and transparent manner.

5. Provision of information and feedback
   - Information about the project will be easily and freely available to enable participants to be fully informed when providing input into community engagement activities.
   - Information will be provided in 'plain English' and avoid using specialist terms, jargon or acronyms. Special consideration will be given to the differing literacy and education levels in the community, and translated materials provided when relevant.
   - Feedback is provided to participants at all key stages of the project. Community engagement activities are documented and minutes/ notes provided to those who participated within 20 business days.
   - Updates and final outcomes for community engagement projects are published on Council's website and where appropriate Community Newsletter and other mediums.

6. Privacy and confidentiality
    - People's privacy and confidentiality will be respected before, during and after community engagement activities have taken place.

Participants' personal information will remain confidential and will be managed in accordance with the Council's *Privacy Management Policy* which adheres to the Privacy and Personal Information Protection Act 1998 and the Health Records and Information Privacy Act 2002.

Role of Council representatives

Community engagement sessions aim at providing opportunities for the community to give input into decision making processes. Council staff, consultants and Councillors who attend or facilitate engagement sessions are there to provide background information, listen and assist the community in providing input. Council representatives and staff should refrain from being participants in the process or express either their professional or personal opinions, as this may hinder or skew the input provided by the community. Internal engagement activities should be provided where possible to allow staff input into processes.

Organisational capacity building and training

In order to assist in the implementation of this framework, learning and development opportunities on community engagement practices will be encouraged across the organisation. By promoting these opportunities, Council will continuously build the capacity of the organisation to deliver community engagement by providing staff with the appropriate skills and knowledge to plan for, manage and facilitate engagement activities.

Community Engagement Spectrum

	Inform	Consult	Involve	Collaborate	Empower
Engagement Goals	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
Promise to Communit y	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Examples of how we will do this	• Advising the community of a situation or proposal. • Informing on a decision or direction or Council. • Providing advice on an issue. • Fact sheets, websites, information sessions • No response is sought or required	• Undertaking market research to identify needs or issues. • Seeking comment on a proposal, action or issue. • Seeking feedback on a service or facility. • Written submission, focus groups, surveys, public meetings.	• Involving the community in discussion and debate through workshops. • Adopting encouraging participation through meetings/ sessions. • Involving at different times in the planning process. • Community members of S355 Committees.	• Establishing a structure for involvement in decision making, eg, working party or advisory group. • Enabling ongoing involvement in all stages. • Allocating responsibility for achieving outcomes.	• Deliberative processes to understand community attitudes and issues to a broad scale issue or project and may consider trade off scenarios eg Citizen juries • Local Government elections • Delegated decisions

INCREASING IMPACT ON THE DECISION

How and when we will engage?

When commencing a project, consideration will need to be given to determine the level of impact any decision may have on the community and stakeholders. The following guide will help determine the level of impact. Generally speaking, the higher the level of impact, the greater the level of community engagement.

Level 3	Criteria (one or more)	Possible examples
There is a **high** level of impact or risk (perceived or real) on the community as a whole, or a section of the community. There is potential for any decision to create controversy and/or have varying levels of acceptance within the community.	• Significant impact on attributes that are considered to be of high value to the community (e.g. lifestyle or physical environment) • Likely to have a high level of interest and/or be the source of controversy or conflict across Murrumbidgee Council or local area • High levels of complexity in the issue being considered • Likely to impact on vulnerable sections of the community • There is a loss or significant change to any service or facility provided by Council.	• Long term Financial and Community Plans • Closure of Council service or facility • Review of Community Strategic Plans • Proposals from other tiers of government that significantly impact the community • Major change to HACC service • Significant natural event outside Council's control
Level 2	Criteria (one or more)	Possible examples
There is a **medium** level of impact or risk (perceived or real) on the community as a whole, or a section of the community. It is likely that the decision will be accepted by the majority of the community impacted, however the decision may be an inconvenience for some sections of the community.	• There may be some impact on attributes that are considered to be of high value to the community or a section of the community (e.g. lifestyle or physical environment) • Some sections of the community concerned are likely to have a high level of interest • Potential for some controversy or conflict across Murrumbidgee Council or individual communities within the Council area • There is a medium to low level of complexity in the issue being considered • There is some loss or change to any service or facility provided by Council.	• Redevelopment of a facilities such as sporting, recreational or leisure venues • Redevelopment of a local playground
Level 1	Criteria (one or more)	Current examples
There is a **low** level of impact or risk (perceived or real) on the community as a whole, or a section of the community. It is likely that the decision will be widely accepted by the community and seen as having positive outcomes or being required.	• No negative impact on attributes that are considered to be of high value to the community (e.g. lifestyle or physical environment) • Low level of interest across and/or low to no risk of controversy or conflict across Murrumbidgee Council or local areas. • Only a small change, or enhancement to any service or facility provided by Council.	• Upgrade of local playground or park – such as new equipment or landscaping • Extension of operating hours for a service • Local street or streetscaping upgrades • Introduction or changes to a local program

When considering the level of impact, it is important to factor in existing knowledge about the community. It is also important to review existing information including Community Strategic Plans, Operational Plans and local media coverage to determine not only the impact but who may be potential stakeholders in the engagement process. This information will assist in determining the level of engagement Council will undertake in accordance with Councils endorsed Community Engagement Spectrum. This, when measured against the IAP2 Australasia "Community Engagement Model" 2014 below will help to determined roles and responsibilities within the engagement process.

Organisation Leads / Organisation Acts	Organisations lead engagement and seek input to shape the policies, projects and services for which they are responsible. This is a familiar and traditional approach to policy development, project management and service delivery. Engagement is used to both inform the community about the proposed policy, project or propositions and to provide some input to the shape or execution of the policy, project or proposition. Final decision making sits with the organisation and its governors and the organisation is responsible for its action.
Organisation Leads / Community Acts	Organisations can lead the conversation with communities and individuals take responsibility for action.
Community Leads / Organisation Acts	A community leads in this profile to identify, highlight and propose the action required to solve a problem or take an opportunity. To achieve the desired action requires the response of a focal organisation. The community alone cannot achieve the desired result and therefore advocates to motivate the organisation to act.
Community Leads / Community Acts	Communities can lead the conversation and have responsibility for the action. Communities in a range of areas, from sport and recreation to community well-being, environmental action and education, are able to support, design, resource and deliver their own programs, services and activities. Community organisations and NGO's need to engage with community members to gather support, build understanding and commitment and to deliver the session.
Shared Leadership And Action	Leadership and actions can be shared, where communities and organisations participate and contribute to the decisions, and also lead and take responsibility for action towards the outcomes. This collaborative arrangement shared decision making, management and responsibility for delivery required to meet shared outcomes.

IAP2 Australasia "Community Engagement Model" 2014

What engagement methods will we use?

Determining the level of impact for each stakeholder group will allow Council to identify what levels of participation it should consider for each project. Not all stakeholders will require the same levels of engagement and engagement methods should be selected carefully based on the needs and demographics of each group.

There are many reasons why people don't get involved with Council engagement activities. Consideration should be given to the types of engagement activities being planned to ensure they are inclusive and maximise the potential for participation.

Some of the main reasons people do not participate include:

- Lack of information and awareness of the issues
- Perception that their input will not make a difference
- Lack of follow-up with issues raised in the past
- Not knowing how their input has been used in the past
- Intimidating or inappropriate engagement methods
- Language or cultural barriers
- Accessibility – venue, time, holidays, disability access etc.
- Time of day – not all people are available to attend activities in the middle of the day due to work and/or family commitments

Once the level of impact and the level of participation have been selected, Council will ensure it selects the appropriate methods and tools to engage the community.

Although not an exhaustive list, the following matrix will assist staff in identifying what tools or methods could be used. Council staff can also refer to the Murrumbidgee Council Community Engagement Toolkit for details on options for engagement (Attachment D).

Engagement Matrix

Level of participation & method/tool	Level of impact		
	Level 3 (high)	Level 2 (medium)	Level 1
INFORM			
Personal telephone contact			
In person meeting			
Written correspondence, mail out			
Fact sheets, brochure, community newsletter			
Notice or advertisement in paper			
Media release			
Information sessions/briefings			
Social media			
Email – community contacts			
Website – information/updates			
Banners/posters/signs			
CONSULT			
Telephone survey			
Written survey (paper based or online)			
Written submission			
Public exhibition			
Focus group sessions			
Public meetings			
Feedback form			
Social media			
Online discussion forum			
INVOLVE			
Meetings with key stakeholders			
Meetings with other target community groups, e.g. parents, youth, aged, disabled, various CaLD groups			
Workshop sessions			
Site tour/meeting			
Public Art session			
Community forum/debate			
Community reference groups			
Section 355 Committees			
COLLABORATE			
Community summit			
Expert reference groups			
Community reference groups			
Joint Advisory Committees			
EMPOWER			
Citizens Jury			
Ballot			

Legend Strongly desirable Desirable Maybe appropriate

Establishing engagement timelines and budgets

Timelines and budget for community engagement will vary from project to project and will be dependent on a number of factors, including the level of impact, level of public participation required and the community engagement tools and techniques chosen for each stakeholder group.

Consideration will also need to be provided to any legislative requirements and timeframes which may impact on the project. A guide to planning for the engagement process is included with this document as Attachment A. *(NB: Requires updating upon finalization of the Organisation Structure)*

Generally speaking, the higher the level of impact and more stakeholders Council has, the more time and resources will need to be allocated to community engagement. Therefore it is essential that a community engagement plan is developed before commencing the project and should be included in the overall plan and budget for the Council project.

Early engagement is recommended where the project is dealing with complex issues, requires community education or capacity building or is of a contentious issue.

Projects at this level will often need a period of informing the community about the issues at hand, before consulting, involving or collaborating.

An important factor in determining timeframes will be key community events such as school holidays, religious festivals and other major events. Where possible these should be avoided in order to maximise the ability for people to participate.

When considering budget and resource allocation, the type of engagement tools chosen will be a significant factor. Each tool requires different levels of practitioner skill, time and budget. For controversial projects, it may be necessary to use an independent facilitator to ensure a balanced and unbiased approach and provide a greater level of credibility and confidence with the community. This independent facilitator may be an external consultant, or another Council staff member who has the required skills and is not directly involved in the project or responsible for putting forward Council's position on the topic being considered.

Reporting back and evaluation

Providing feedback and reporting to the community is essential to ensure ongoing engagement with the project and with future projects.

When developing your engagement plan, identify at which points throughout the project you will be providing feedback or reporting on progress.

To facilitate feedback, it is important that a record is kept of the key themes, ideals and suggestions to come from the engagement activity as well as establishing a means of communication with participants once the session is completed.

This will require the person responsible for the activity to record the names and contact details of participants in accordance with Murrumbidgee Council's Privacy Management Policy. To assist this process, an Attendance Record forms part of this document and is Attachment B.

To assist with providing feedback the following steps should be undertaken:

- Offer to capture contact details of all stakeholders and community members who would like to be involved or participate in an engagement process.
- Ensure that contact details are kept up to date throughout the project.
- Detail how and when each stakeholder group will receive feedback during the project and after completion.
- Ensure that feedback is accessible to all stakeholders.
- Keep contacts informed of key project stages and send details of any relevant upcoming engagement activities or details of Council reports for comment.
- Ensure the privacy and confidentiality of individuals are maintained at all times.

When reporting on the final outcomes of the project:

- Define how the final outcomes will be documented and circulated.
- Provide feedback to participants on how their information was considered in the development of the final outcomes.
- Where appropriate, ensure project outcomes are reported on Council's website and through other mediums.

To ensure that Council's Community Engagement process continue to be effective and relevant for the local communities, it is important to evaluate each session.

For all major projects, or those identified as having a Level 3 or Level 2 (where relevant) impact, a summary evaluation should be prepared on the community engagement undertaken. This summary should include information concerning the project, the community engagement process and the key outcomes. Once completed, this evaluation should be provided to Manex to inform future engagement activities of the Council.

The summary evaluation should also be made accessible to the community, particularly those who participated in the community engagement activities, via Council's website and other mediums as appropriate. An evaluation template has been developed for the use of Council staff involved in community engagement activities which directly involve the public at the Consult, Involve and Collaborate levels as is included as Attachment C.

Attachment A - Engagement Plan for XYZ Project

Engagement Plan for EXAMPLE Project

The below table outlines the key activities which will be used during the engagement process. The Engagement Plan template can be located in the Templates Folder on the shared drive. For advice on what engagement activities could be utilized, please contact (STAFF ROLE TO BE ADDED ONCE STRUCTURE IS FINALISED).

Table 1. Key Engagement Activities

Activity	Scheduled for	Objective	Participants	Resources Required	IAP2 Spectrum Level of Participation	Council Responsibilities	Communications Required
The row below is an explanation of how to complete this Engagement Plan							
Eg. Joint Council Working Group Charrette	Day & Date	What are you wanting to achieve through this process. What are the outcomes.	Who needs to be included	Eg.: Existing documents Summary of existing priorities Draft strategic priorities Equipment such as, room, projector, seating and refreshments	Is it: Inform Consult Involve Collaborate Empower	What are the steps Council needs to take to ensure the activity occurs and is successful.	How do we get the stakeholders in the room? Eg. Invitation only, public advertisement, direct contact, self-registration via website, phone in and register
The following rows are examples of how the engagement plan would look once completed							

Community Survey	Go live by 14 November Live for 3 weeks	To get broad input on the regional SCP, identify key areas of interest and concern, and to obtain feedback about the proposed strategic priorities	Self-referred public	Survey Monkey Provide set link	Consult	Promotion of survey through usual Council channels Link/Page on website Social media updates Direct communications via email with key stakeholders to promote participation	Media Release/s (if desired) Advertising – traditional / social media Link present on Council websites when go live Promotional materials and flyers/posters at key locations across the region promoting the survey
Community Workshops	21 – 29 November	To identify the community's aspirations for the region and identify any concerns or priorities. To present the draft strategic priorities and obtain feedback.	Community members and invited representatives and key stakeholders	Rooms for each of the 9 venues and dates/times, projector, seating, and refreshments Engagement resources and materials for active participation	Involve/ Collaborate	Promotion of the community meetings through usual Council channels Link/Page on website Social media updates	Media Release/s (if desired) Advertising – traditional / social media Information on dates, times, and locations available on Council websites Promotional materials and flyers/posters at key locations across the region promoting the workshops

Attachment B – Attendance Record

Murrumbidgee COUNCIL

Attendance record

Name
Contact Phone
Email
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Attachment C – Engagement Evaluation Forms

Murrumbidgee COUNCIL

Activity evaluation (internal)

Form to be completed by Murrumbidgee Council staff		
	Planned	**Actual**
Description of activity		
Objectives of activity		
Stakeholders Engaged		
Number of people reached		
Timing		
Budget and Staff		
(Include other measures if required)		

Overall, how well did this activity meet the intended objectives? (Rank on a scale of 1 to 5, with 1 = Perfectly and 5 = Not well)

1 2 3 4 5

Comments

Suggestions for the future

Murrumbidgee COUNCIL

Activity evaluation (external)

Form to be completed by Activity Participants		
Description of activity – what was the event?		
Where and when was it held?		
Objectives of activity – what did you expect to see come from the activity?		
Number of people – should others have been involved in this activity? If so, please list		☐ No If no, please suggest alternatives:
Was the timing of the event suitable/appropriate?	☐ Yes	☐ No If no, please suggest alternatives:
Venue – were you comfortable in this environment?	☐ Yes	

Overall, how well did this activity meet your expectations? (Rank on a scale of 1 to 5, with 1 = Perfectly and 5 = Not well)

1 2 3 4 5

Comments

Suggestions for the future

Attachment D – Engagement Tools

Tool: Listing negotiable and non-negotiable items

Non-negotiable	Negotiable
Legislative requirements	
Budget	
Community safety e.g. the need to restrict development in flood prone areas.	

Tool: Checklist for identifying stakeholder needs

- ☐ What level of information do stakeholders need to make an informed decision about the planning or development project?
- ☐ What level of information are stakeholders likely to seek?
- ☐ Will all stakeholder contributions influence the project equally?
- ☐ Is a Councillor available to assist with the community engagement process?
- ☐ Will everyone interested in, or potentially impacted by, the project have an opportunity to become involved?
- ☐ Have efforts been made to include under-represented community groups in all community engagement processes (e.g. younger people, older people, people with disabilities, Aboriginal and Torres Strait Islander people, and people from culturally and linguistically diverse backgrounds)?
- ☐ Are there any anticipated barriers preventing stakeholder participation such as physical, communication, economic, language, cultural and social barriers?

Tool: Example record of stakeholder engagement register

Date	Interaction type	In/Out	Project officer	Stakeholder Group	Stakeholder	Stakeholder comments/ issues	Actions
When the interaction took place	e.g. Meeting, phone call, email	Who initiated the interaction? Stakeholder or project team	Project team member responsible for the interaction	Stakeholder group the stakeholder is part of. e.g. Community representative group, industry and business, environmental representative group	Stakeholder name and contact details including email address, postal address and phone contact if possible	A summary of the interaction, issues and topics raised (positive and negative)	List any follow-up actions required

Tool: Example of Stakeholder Register

Stakeholders/ Groups	Organisation Type	Key Contact Name	Phone	Email or website	Address	Areas of Interest	Community	Engagement Level
Including details of specific groups or individuals	Resident/Ratepayer, Business/Industry, Business Group, School, NGO/Community group, Govt Local, Govt State, Govt Federal, Aboriginal/Indigenous, CALD, Sporting, Cultural	Identity of individual responsible for communicating with the specific Stakeholder Group	Best contact phone numbers	Best contact email for Stakeholder Group	Best address for written correspondence	Community, Environment, Economy, Civic Leadership, Infrastructure - (Include all relevant areas)	Coleambally, Darlington Point, Jerilderie - (Include all relevant communities)	Include level of Interest and Influence – either High/Low
Eg. Murrumbidgee Council	Govt Local	Craig Moffitt	1300 676 243	mail@murrumbidgee.nsw.gov.au	PO Box 5, Darlington Point, NSW, 2706	Community, Environment, Economy, Civic Leadership, Infrastructure	Coleambally, Darlington Point, Jerilderie	High

Tool: Risk Management

The engagement process is overall a set of low risk engagement activities, as it is developing an aspirational plan, rather than engagement over a highly contentious issue. Nevertheless, risks need to be considered as any engagement activities have risks that require management, if not avoidance.

Project Engagement Strategy Risk Identification

Potential Risk	Strategies to mitigate or avoid risk
Concern that some communities' concerns and aspirations will dominate the plan	An accessible online survey to encourage feedback from all residents regardless of location. A specific question in the survey to gauge this concern. Workshops in a range of locations, not only in administrative centres, to encourage regional residents' participation.
Niche, timely, or local issues dominate engagement activity forums (e.g. participants use the community sessions to raise specific issues with their local government representatives)	Clearly and widely communicate purpose of engagement. Engagement staff to be kept abreast of current issues that may be raised and Councils' stance on them. Experienced facilitation of workshops. Presence of a Council officer at each of the face to face workshops to provide support on these issues (to be discussed before or after the scheduled workshop).

Lack of community interest in participation / low participation	Strong promotional activities with focus on key benefits and aspirational messaging. Creative and innovative methods for engagement. Develop engaging fact sheets and promotional materials. Maintain strong media relations. Targeted invitations to key stakeholders and interested parties by Council.

Tool: Engagement activity options

Activity	Detail	Level of participation				Benefits	Considerations
		Inform	Consult	Involve	Collaborate		
Print materials (e.g. brochures, newsletters, fact sheets, articles in newsletters or rates notices)	• A way to provide information on specific issue or initiative to a selected audience. • A way to reach a broad audience within the community. • Needs to have basic information on aspects of the project. • Need a distribution method to get to the right people (and translated for particular groups). • Needs to be written clearly and concisely with illustrations or infographics where possible. • Needs a clear call to action for the community to get involved.	☑				• This method creates interest within the public. • Good for broad awareness and for activating interest quickly. • Can be tailored to specifically address the needs of particular groups. • Some groups, such as older people, prefer to receive their information via traditional hard copy methods. • Opportunity for planners and other technical staff to provide information about planning directly to the intended audience.	• Expensive to produce. • Hard to target or to monitor effectiveness. • Can miss key minority groups. • Need to use plain language and simple graphics to explain planning concepts otherwise audience may not read the material.
Advertisements (e.g. print, TV, radio and digital)	• Most newspapers and radio stations have a community events or public service announcement section which can be used to inform the public of your events and activities. • Advertisements can also be placed in specific areas of interest (e.g. early general news, sports, business section) and online platforms to capture interest.	☑				• Fast. • Efficient. • Wide-reaching. • Opportunity to positively position planning projects using local government key messages. • Can contain a clear call to action to get involved in planning project.	• Expensive. • Hard to target or to monitor effectiveness given the media diversity within the region (Victorian/NSW border issues). • Can miss key minority groups.

Media releases	• Media releases need to be structured with simple and clear messages. • Can be used to disseminate information to the community quickly. • Find a newsworthy angle for your story and be concise when sending story ideas to an editor or reporter. • Highlight elements of your project that will provide good visuals for digital and television and good picture opportunities for print publications. • Even if a reporter doesn't attend an event you have arranged, you still have an opportunity to get coverage after the event by supplying the media organisation with any pictures or visual collateral collected on the day. • Always provide the news organisation with written materials (e.g. news release) to ensure correct facts, names and dates for your story.	☑				• Relatively cost effective. • Opportunity to position planning projects using local government key messages.	• Relies on the news cycle for the day of the event and the news value of the project.
Websites	• To be used to provide accessible, clear and appropriate information cost-effectively to a broad cross-section of stakeholders.	☑				• Can provide a link to any online surveys. • Can provide lots of targeted information about planning concepts and planning projects cost- effectively. • Can allow community members to ask questions and receive answers that are accessible to all. • Easy to control the messages being sent out.	• Maintenance and resource requirements to review and refresh content, and to monitor and respond to community comments. • Opportunity is lost if materials are not presented in plain language and using simple graphics.
Email feedback	• Email feedback can be an easy way to obtain ideas from the public on an issue or a range of issues. • It can be used with an existing website with a feedback system.	☑	☑			• It is quicker than most forms of participation and may be attractive to those with little time. • Allows people to ask their specific planning-related questions, and, potentially, have them answered. This may help to build knowledge about planning concepts with some community members.	• Emails received must be tracked carefully to make sure that they are acknowledged, and, where this commitment has been given, responded to. • A community member may believe that an email is a properly made submission, when it may not be.
Information hotline	• 1800 number that only cost the caller a local call.	☑				• Creates a single point of contact for enquiries and requests for information. • Allows community members to speak directly to a planner about their concerns and questions.	• Activation required to generate interest.

Public meetings	• Important to have a strong chairperson who can make the meeting flow properly. • Everyone needs to have a chance to speak. • Based on a central theme and participants agree on issues that are important. • Record each discussion and provide a way the participants can access them at the end of the event.	☑	☑			• Offers the community the opportunity to attend and have their opinion heard in the one place at the one time. • Allows for the most important issues to be raised and gives people whom these issues are most relevant, the opportunity to discuss. • Can enable community members to share issues and 'move on'.	• Difficult to get a nuanced understanding from a single meeting. • Challenging for quieter community members. • Tendency to focus on the 'squeaky wheels' and those that are confident enough to speak in front of a large group. • Potential for a mob mentality to form, which may vocally refute factual planning information that is being offered.
Telephone survey/polls	• Technique used to obtain structured responses on specific issues to obtain quantitative measurable results.	☑	☑	☑		• Good way to quickly assess the current awareness of, and attitude towards, planning issues. • A simple vote on a topic will give an indication of the level of local awareness and support. • Opportunity to capture the views of community members that may not actively engage in a planning process or attend public displays or meetings. • Provides input from a cross-section of the community, which can be randomly selected and provide a statistically valid sample. • Higher response rate than mailed surveys, as participants are recruited and researchers continue until they have achieved their sample size.	• More expensive to deliver, and more labour intensive than mailed surveys.
One-on-one interviews	• Involves one person that is tasked with posing a standard set of questions to individuals. • Data gathered needs to be carefully analysed and reported to provide an accurate representation of public opinion.	☑	☑	☑		• Provides important qualitative information about community perceptions of planning projects, or observations about their local community, at a level of detail that can be difficult to obtain with any other method. • Good way of raising community understanding about planning concepts. • Good way of finding and recruiting other community members who may be able to help with other engagement	• More labour intensive, depending on the number of community members being interviewed. • Expensive.

Public displays (site displays or in community spaces that attract a lot of pedestrians)	• Use local venue as a drop in centre. A well-known location such as a library or senior centre or local primary school. • Run over at least one whole day and evening to enable different people to access the event. • People should be able to choose which parts of the event they would like to participate in. • Create fun element (games) for children to attract families. • To be used when you need to present ideas or plans to a broad cross-section of stakeholders in an area and obtain responses in an informal way.	☑	☑			• Allows community members to discuss their concerns about planning projects with local government planners. • Allows community members to gather information about planning projects and processes, and share their views about these projects. • A wider cross section of community members are able to attend, as people can attend at a time suitable to them and they stay for as long as they wish. • Opportunity to share accurate information, via display materials, about planning concepts, and the planning process and projects.	• Potential for lack of clarity in purpose. • Requires intensive staff resources. • Timing needs to be considered given the geographic dislocation of communities.
Small group meetings	• Technique used to generate discussion and insights on aspects of the project from a known group of stakeholders. • Need to set a clear agenda and a facilitator who can keep the group on track.	☑	☑	☑		• Opportunity for planners to have a more detailed conversation about planning concepts, processes, and projects with interested community members. • Provides an opportunity to meet with community groups that support people with disabilities, older people, younger people and Indigenous people.	• May need to reimburse group members for travel and offer meals if the workshop lasts longer than 2 hours. • Not a broad sample to draw data from.
Community events (event created for project or attend an existing community event, eg. Spring Festival, Jerilderie Races, Taste Coly)	• Set up interactive displays at a booth. • Could use methods such as stickers, comment cards, graffiti walls as a way to obtain feedback.	☑	☑			• Allows people to make comments and give feedback on planning information or options presented to them through display material. • Useful technique for involving people who are not used to being consulted on their views. • Useful technique for involving people who may be less confident about expressing their views. • Provide a link between organisations and local people and encourage long-term involvement by the community. • Opportunity to use more engaging tools (e.g. games and video booths) to discuss planning concepts. • Opportunity to take a planning project to an event where community members gather. • Opportunity to use non-planning related activities to encourage people to attend an event where a planning project will be discussed (e.g. live music, children's	• Activation required to generate interest in attending the event.

Charrettes	• A charrette is a multi-disciplinary design workshop held over 3-4 days, involving stakeholders, the project team, planning and design professionals, technical experts and sometimes community members. Participants work in small groups, each containing a technical expert, to develop constraints, opportunities and solutions. • Identify the problem or opportunity. • Select suitable cross-disciplinary teams. • Select an Expert Panel who can help review output at the end of the process. • Brief teams on the charrette process, which aims at delivering feasible and creative solutions within a short period of time. • Plan for a workshop that provides sufficient time for the designers/planners to work. • Encourage break-out groups to join the larger group regularly to present ideas and approaches. • Record ideas using on-site graphic recording in a format that can easily be compiled in a report, utilise technology such as GIS mapping tools. • At the conclusion of the charrette, allow each team to present its proposed solution to a large audience of the public, planning professionals, and business and civic leaders.	☑	☑	☑	☑	• Broad consensus of stakeholders and community representatives in a short period of time. • Opportunity to build an understanding of design processes if community members are able to observe charrette process.	• Resource heavy but an effective method for working through complex problems relatively quickly. • Lead time is critical for planning, although event may be short, lead up is resource intensive and is on average six to eight weeks.
Steering groups	• A steering group is usually made up of high-level stakeholders or experts who provide guidance on key issues. Usually not representative of the broader demographic, rather a panel of experts who guide decision-making. • Make clear to members what their likely responsibilities and time commitments will be. • Rotate the responsibility for chairing each meeting to engender a sense of ownership. • Include external representatives to allow different perspectives and a wider experience base. • Set performance indicators for the group as well as the project. • Ensure clarity of both individual and group roles. • Produce minutes that include clear action lists. • Create time for debate of the issues in the meeting. • Issue papers at least a week before meetings to allow the members sufficient preparation time.	☑	☑	☑	☑	• The purpose of a steering group can vary greatly from members providing their own feedback or ideas about planning processes, to members acting as a conduit between the broader community and organisation. • Stakeholder-led decision-making and input over time, depending on the terms of reference of the group.	• Defining demographic relevance can be challenging. • Consider the power dynamic carefully and whether all parties are adequately represented.

Community Reference Groups (CRG)	• A structured group of stakeholder and community representatives that meet regularly and operate under terms of reference. • Broad-based recruitment. Advertise and promote extensively to encourage a broad cross-section of representation. • Set clear parameters on the make-up of the group (stakeholder groups, citizen participation). • Have clear terms of reference incorporating purpose and goals, voting behaviours (incorporating what is a quorum) and dissolution of the group.	☑	☑	☑		• The purpose of a CRG can vary greatly from members providing their own feedback or idea about a planning project, to members acting as a conduit between the broader community and organisation. • Stakeholder-led decision-making and input over time, depending on the terms of reference agreed with local government.	• A relatively slow-paced decision-making process, governed by terms of reference. • Can be good for broad consensus, not necessarily demographically representative.
Citizens panels (Face-to-face and online)	• Large numbers of people who are selected to be representative of the population and be a part of a panel that deliberates on a range of issues over a set period of time. Surveys are distributed during the time to understand community attitudes, feedback, issues and behaviour. Can track changes as well. • Establish the objective for setting up citizen panels and corresponding reference framework. • Ask: What is the logic of deliberation, what are the limits? • Brief participants on the rules of the proceedings. • Provide experts to the panel. • Engage independent moderator(s) to assist the process of deliberation. • At the agreed time, arrange a presentation from the panel. • Publish the report and recommendations. • If the recommendations of the citizen panel are not followed up, publish the reasons for not following up (this would normally be done by the commissioning body).	☑	☑	☑	☑	• If the process of recruitment is rigorous, citizen's panels can be an effective method for securing input from a representative sample of community members over time. • Provides the opportunity for community members to begin to understand planning concepts and the planning process.	• Expectation of level of decision-making with a deliberative process. • Can be expensive and resource intensive to manage both recruitment and management time.

Mobile apps (Designed specifically to get the community involved in planning processes.)	• To create a mobile platform to engage audiences who are unlikely to attend traditional engagement events, and to reach younger or more mobile audiences. • To provide content in a way that aligns with how communities are accessing information. • Can be a good way to engage people who are time poor. • Requires both a good idea and sound execution planning. • Provide a clear brief with your intended purpose – i.e. is it to provide detailed technical details, to support the overall visuals? • Ensure you provide clear timelines and expectations and have any technical data readily available to ensure accuracy of representation.	☑	☑			• Can provide interactive content. • Can incorporate virtual reality or immersive elements to enable the community to see locations in 360 degrees. • Can gather live data. • Mobile usage is at an all-time high. • It's a cost-effective way to engage people where they are.	• Resources to develop content. • Time to allow for approvals and uploading of apps to Apple and GooglePlay. • A degree of technological comfort is required to use apps. • This type of technology may not be appropriate for particular comments. • Expensive in relation to existing Council resources.
Social media (Facebook, Twitter, Instagram, Snapchat)	Facebook: • posts should be short, sharp and pose questions to increase interaction • posts with video content received the greatest number of interactions from Facebook users. Twitter: • open access • 140 character limit • requires you to build a following first • develop a policy for information sharing – the what and the how • requires a memorable hashtag. Instagram: • Instagrammers 'Like' 1.6 billion updates per day • Sunday gets the highest interaction levels • peak time in Australia/New Zealand is 8 pm midweek and 5 pm weekends • requires a memorable hashtag • good for a younger population. Instagram has a younger skew – 37 per cent 18-29 year olds; 18 percent 30-49, 50+ just seven percent.12	☑	☑			Facebook: • usage levels are quite high • good for overcoming geographic constraints • relatively easy to create and share information about a project • ability to moderate and/or remove comments quickly • community will often self-moderate negative comments. Twitter: • good for raising awareness about project and planning concepts • good for media attention and driving traffic to a website • opportunity to leverage planners with large twitter following by asking them to post information about the project or planning concepts. Instagram: • provides visual content, and allows community members to upload images relevant to the planning process and project • gives a face to a project • informal style.	Facebook: • lack of control and anonymity is a challenge • requires participants to have a Facebook account • not always available on corporate or government domains • establish moderation rules addressing content and etiquette • monitoring can be labour intensive. Twitter: • not good for deliberation • need to build a following • monitoring can be labour intensive. Instagram: • very informal • difficult to explain technical concepts • may need a substantial financial investment to maintain visual elements.

Digital video e.g. YouTube	• Increasing proportion of internet traffic is going digital video. • Beware of humour and ensure it is appropriate to your topic. • Keep the videos short and simple. • Be aware of the lack of control in relation to comments and have a plan in place to manage it (YouTube).	☑				• Provides visual content. • Great for virtual site tours. • Good for helping to explain complex planning issues using visual content. • Gives a face to a project.	• Technology constraints: speed of access. • Informal style. • Lack of control over comments (YouTube).
Online survey tools such as Survey Monkey	• A quick and effective way to get a snapshot of community sentiment. • Pre-prepare questions. • Consider your promotion – how will the community know about it?	☑	☑	☑		• Good for fast data and community sentiment in relation to emergent planning issues. • Quantitative data. • Relatively cost effective.	• No complexity of data. • No opportunity to interrogate data in more detail.
Hard copy surveys/ questionnaires	• Standard set of open and/or closed questions to a wide range of people. • Conducted through face-to-face interviews, self- completion written forms, over the phone, or electronically via the internet or email. • Technique used to obtain structured responses on specific issues and to obtain quantitative and/or qualitative results.	☑	☑	☑		• Popular method of collecting point-in-time qualitative and quantitative information from a population. • Good way to find out opinions of local people on a particular planning topic in a structured way that can be extensively analysed. • Good way to inform people about the project. • Good way to reach a large number of people and involve those who may not be in a position to engage in other ways. • Input from those who may not attend a public meeting. • Provides a mechanism for extending a mailing list. • Provides a cross section of the	• Response rate can be low. • To get statistically valid results, can be labour intensive and expensive. • Level of detail may be limited. • Less effective in obtaining responses to complex issues. • Effective analysis of data can be labour intensive and requires a high-level of expertise.
Online polling	• A quick and effective way to get a snapshot of community sentiment. • Pre-prepare questions.	☑	☑	☑		• Good for fast data and community sentiment in relation to emergent planning issues. • Quantitative data. • Relatively cost effective.	• No complexity of data. • No opportunity to interrogate data in more detail.

Online deliberative forums	• Recruitment is critical. • Consider the rules of the forum. • Transparency with moderation guidelines. • Consider the pros and cons of an open or closed forum – i.e. if participants need to formally register.	☑	☑	☑		• Useful in explaining planning concepts which participants have a chance to explore in their own time. • Great potential for detailed qualitative data. • Licensing agreements can reduce costs.	• Can be expensive, consider if you require all of the functionality on offer. • What data do you require and in what format? • What are the technical requirements in relation to your existing website? • How will you manage moderation? • Will registration impact your engagement process? • Will it deliver value for money? • Do you need visuals? • How technologically savvy do you need to be to use it?
Gamification	• Gamification is the use of game-thinking and game mechanics in a non-game context to engage users in solving problems.	☑	☑	☑		• Can provide a fun way to encourage community participation and greater community understanding of planning concepts.	• Is it appropriate to your engagement purpose? • Will the concept or idea be compelling enough for people to play it?
Augmented reality	• Utilising existing drawings to create virtual fly-throughs and/or augmented reality to give a clear picture of proposed visual amenities of a project. • With technology costs coming down this can be an effective method for providing visuals. • Look for a technology provider with experience in property and planning. • Provide a clear brief with your intended purpose. For example, is it to provide technical details to support the overall visuals? • Ensure you provide clear timelines and expectations and have any technical data readily available to ensure accuracy of representation.	☑	☑	☑		• A cost effective method for demonstrating what a project will look like on the ground.	• Requires detailed computer-aided design drawings to be meaningful. • Needs to work in conjunction with other methods to capture data. • Quality of finished product can vary greatly.

Other engagement options which could be considered and included as part of a strategic engagement process.

- Direct mail
- Banners, posters and signs
- Blogs
- Community radio
- Market research
- Polling during community events
- Written submissions
- Telephone contact
- Face-to-face meetings with individuals
- Information sessions
- Conversation toolkits
- Deliberative polling (including online)
- Access community networks
- Community workshops
- Online workshops
- World Cafe
- Focus groups
- Site tours
- Expert Reference Group
- Joint Advisory Committees
- Public Art Session
- Tactical urbanism (or experiential
- Community summit
- Online discussion forum

Murrumbidgee COUNCIL

DRAFT Communication Strategy

	Name	Position	Signature	Date
Responsible Officer	**Alison Coe**	**Assistant General Manager – Corporate and Community Services**		
Authorised By	**Craig Moffitt**	**General Manager**		

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Contents

MURRUMBIDGEE COUNCIL

Communication Strategy

Communication Principles

Communicating effectively is an important element of Council operations. Ensuring that the right messages get to those who need to hear it within a timely fashion is a key component of any Communications Strategy. As such, the following principles will apply to all Murrumbidgee Council communications:

- Our communication is planned and pro-active
- Our messages are clear, concise and easy to understand
- We provide our community with an opportunity to express their views and have input into our strategies
- Our internal communications are open and engender trust amongst employees
- We maximise communication effectiveness by using the most appropriate communication channel
- We evaluate the effectiveness of our internal and external communications on an ongoing basis

Key Messages

When Council communicates to the public it is to cover any one of three areas:

- ✓ We are taking a role of leadership (and letting you know what we're going to do about a certain situation)
- ✓ Meeting our commitments (we said we would do this and now we're reporting back to you)
- ✓ We are inviting you, the community to participate in some way

Community and Stakeholder involvement is essential to achieving the outcome of a better informed community, a staff which is actively involved in the change process and two-way communication which is enhanced and encouraged.

External

- Our focus is providing residents with real value for money.
- We will build community partnerships to deliver the best possible outcomes
- What Murrumbidgee Council does today shapes our community's long term future
- We listen to our community – they have a real role to play in shaping their local government
- We rely on our community to help us focus on what is important to ensure we do first things first.

Internal

- All Murrumbidgee Council employees are valued, respected and accountable for their performance.
- We are committed to listening, learning and responding to staff
- Council leaders are visible and accessible.
- Conversations with staff are a priority
- We encourage, acknowledge and celebrate success
- We place a high value on trust in the organisation

Key Stakeholders

To assist in determining which method of communication is best implemented, it is important to take the following steps:

- ✓ Identify all groups and individuals who may be affected by this change
- ✓ Assess the level of impact this change will have on each group and individual
- ✓ Develop/select a two-way communication process
- ✓ A consultation process has been included
- ✓ Determine the key messages that need to be delivered and how they will be delivered

It is important to remember that not all methods of communication will effectively get the right message to the right people, which is why it is often preferable to utilise a number of mechanisms.

Consultation with the Community

The level of community consultation should correspond to the potential level of community impact or concern, and should be tailored to the nature, complexity and impact of the issue, plan or policy.

Community consultation may range from

1. Exchange of discreet information between individuals or stakeholders.
2. Dissemination of information across the wider community
3. Obtaining general community feedback and information
4. Interrogating, engaging or partnering the community.

These levels of consultation form a spectrum of community involvement from providing information through to actively involving the community in Murrumbidgee Council's decision-making.

Consultation with Staff

Consultation is the best means of getting staff on-board with the change. This will allow them the opportunity to understand the new vision of the Council and where it is going, and it will allow staff to have their say.

To ensure consultation is effective, all staff that will be affected by the change will be provided with an explanation of the proposed change and provided with a copy of the issues paper (once it has been agreed to by Manex).

Consultation can take place with an individual staff member, or group of staff and, where they so choose, representative(s). Depending on the circumstances of each case a range of methods of consultation may be pursued, such as:

- Forming a Working Party to examine the proposed changes and make recommendations on them, especially where staff may not have been involved in the initial planning phase. Where a working party is formed, a timetable for its discussions will be provided
- Personal meetings with possibly affected staff, and, where they so choose, their representatives

Communication Planning

Good communication is not an accident. There are seven universal truths which underpin good communication. These are the guiding principles against which our communications will be evaluated:

1. Communication must, in general, be *planned*,
2. Opportunistic media should focus on social media platforms eg. Facebook, Twitter, Instagram and utilise images, videos etc at local events.
3. Messages should be *clear* and *concise* – which means short catchy posts with links back to Council's website.
4. Communication is a *two-way* responsibility – this allows for Council to not only get the message out but receive ongoing input from the community to provide feedback.
5. There must be opportunity for *feedback*,
6. Communication must be *open* and *transparent*,
7. Channels of communication must be *appropriate* to the recipient(s) – to this end, Council will ask the community how it wishes to receive regular and ad hoc information.
8. Communication needs to be *monitored* and *evaluated*.
9. Over-communication is preferable to under-communication and repeat messages are acceptable.

Communications Plan Overview		
Purpose	**Reasoning**	**Process & Responsibilities**
Media Relations/Publicity	• Media engagement is planned wherever possible • Acknowledge the value of the media as a means of communicating with our key stakeholders • Strengthen our relationship with the media, dealing with them in an open, honest and pro-active manner • Deliver clear, consistent messages to our stakeholders • Ensure both Murrumbidgee Council and media representatives have a clear understanding of appropriate communication channels and procedures • Provide a briefing sheet with background and key points	• Mayor and General Manager actively work on building strong, professional and effective relationship with media at all levels, including newspapers, television and radio - think first, "Would people want to know about this? Should people know about this?" • Media releases are distributed on a regular basis, highlighting achievements of council – Releases should be sent when the answer to the questions above is "yes" • Staff responsible for communication to pro-actively identify positive publicity opportunities and prompt work units and Manex • The General Manager and Mayor are well briefed to be Council spokespeople on issues • Media database covers all mediums and is continually updated
Community Engagement	• Ensure statutory obligations are met • Ensure those affected by Council decision have the opportunity to be involved in the decision making process • Ensure community is provided with the information it requires to participate in a meaningful way	• Know the project • Map the stakeholders • Define the issues • Find the right type of engagement to fit the project/issue/event – ensure activity is time & venue appropriate for target audience. • Develop a community engagement plan

Communications Plan Overview		
Purpose	**Reasoning**	**Process & Responsibilities**
Internal Communications	• Ensure staff are well-informed about the changes in their workplace • Encourage the use of clear, concise and easy to understand language throughout the organisation • Build understanding, commitment and loyalty among staff • A common sense of purpose is engendered through keeping people informed	• New Council documents are written in clear, easy to understand language. Training is provided where appropriate • Ensure all staff are able to hear about their workplace in their workplace before they read it in the newspaper or on social media • Put communications and key messages on Manex agenda – this will ensure that decisions made at a Manex level are appropriately communicated to staff. • Work with Manex to actively identify successes and acknowledgements • Ensure key messages are communicated throughout the organisation • Expand Intranet for effective use as an internal communications tool • Deliver better communication results for outdoor staff. For example, attaching important internal emails to payslips, key messages information sheets to be read at weekly toolbox talks. Alternatively, develop and SMS system to advise all staff when critical communication has been issued and/or place printed information in work vehicles, staff pigeon-holes, notice boards, sign-on points.

Communications Plan Overview		
Purpose	**Reasoning**	**Process & Responsibilities**
Community Engagement	• Ensure statutory obligations are met • Ensure those affected by Council decision have the opportunity to be involved in the decision making process • Ensure community is provided with the information it requires to participate in a meaningful way	• Know the project • Map the stakeholders • Define the issues • Find the right type of engagement to fit the project/issue/event – ensure activity is time & venue appropriate for target audience. • Develop a community engagement plan
Website	• Ensure Council's website reflects the organisation and provides regularly updated information • Ensure Council's website has update contact details	• Designate clear areas of responsibility regarding technical and visual aspects of website administration • Develop overall visual design of website homepage • Prepare website style guidelines • Incorporate linkages to Council's social networking/engagement tools
Social Media	• Media engagement is planned wherever possible • Deliver clear, consistent messages to our stakeholders • Provides a forum for engaging the community in on relevant issues • Increase access to information external to Murrumbidgee Council.	• Staff responsible for communication to pro-actively identify positive publicity opportunities and prompt work units and Manex • Links to media releases are distributed on a regular basis. • Promote positive outcomes for the community

Communications Plan Overview		
Purpose	**Reasoning**	**Process & Responsibilities**
Advertising	• Inform community about Council's decisions, events and operations • Invite public engagement on relevant issues • Use advertising to broaden the appeal of Council's brand • Ensure all advertising adheres to Council's corporate branding standards	• Ensure all advertising conforms to Council's consistent style and standards • Encourage the use of clear, easy-to-understand language where possible. Edit unwieldy language where appropriate • Seek advertising opportunities for Council that offer strategic value • Utilise online methods i.e., webpage, Facebook to promote Council activities

How Murrumbidgee Council will communicate

Please note – Murrumbidgee Council's delegated media spokespersons are the Mayor and General Manager

Method- (what channel will Council use?)	When will this be employed?	Why will this method be used?	Who will be the audience?
Council meetings	Monthly	To provide consistent, approved content to the public	Internal & External
Annual Report	Annually	It is a statutory requirement and it is an effective method by which Council summarises its activities for the year	Internal & External
Council/Community Strategic Plan	4-yearly with annual review	Statutory requirement	Internal & External
Website – also Home Page Feature and Home Page Introduction	Ongoing	This method is a contemporary and effective method of communication that will become more popular as the NBN is rolled out.	Internal & External
Surveys and evaluations	As required	Provides a means for anonymous contributions	Internal & External
Customer Service – counter enquiries and phone calls	Daily	An essential (mandatory) method by which Council interacts with its community and key stakeholders	Internal & External
Letters	As required	To be used for specific project based activities eg., roadworks, capital programs, events	Internal & External
E-mail direct to stakeholders	As required	To provide important and sometimes complex information on a regular basis	Internal & External

Method- (what channel will Council use?)	When will this be employed?	Why will this method be used?	Who will be the audience?
Phone	Ongoing	When information is needed in a short space of time and a two way conversation will assist in progressing the matter	Internal & External
Public Exhibition of documents	As required	Statutory requirement	Internal & External
Customer Service Centre foyers for displays/posters/brochures	As required	For community events and non – serious matters	Internal & External
What's On	Ongoing		Internal & External
Fact sheets for media, councillor and staff briefings developed into handouts for resident meetings	As required	To get across an important message and remove ambiguity "Council is in control of the content"	Internal & External
Statement of Vision and Priorities	Adopted 27 April, 2017	To create a united direction for the Council and generate community cohesion through a shared vision	Internal & External
Using the signature panel on Council emails to promote a matter/event	As required	Cost effective and has the potential to reach a large audience	Internal & External

EXTERNAL COMMUNICATION			
Method- (what channel will Council use?)	**When will this be employed?**	**Why will this method be used?**	**Who will be the audience?**
Direct contact between Council and residents/business etc	As required	It is an effective method of communication which can be adapted for the situation. Often this method provides written confirmation of agreed actions or commitments.	External
Rate notice and booklet	Quarterly	Statutory requirement	External
Public meetings/forums/events	As required	This method allows effective face to face forums and active listening	External
Media releases	As required	To reach a broader cross section of the community	External
Responding to media requests	As required	To facilitate Council's ability to state a position on a matter that the media are pursuing	External
Community newsletter	Monthly	Cost effective and reaches a large audience	External
Staff carrying out their jobs and being "observed" by the community	Daily	This method has the ability to create confidence in the community's understanding of work our staff do and also to undermine the confidence that the community may have in staff	External
Mail outs	As required	To provide important and sometimes complex information on a regular basis eg., Levee Bank project	External
School newsletters	As required	For community events and non – serious matters	External
Advertisements	As required	Statutory requirement	External
Display area, posters, brochures	As required	For community events and non – serious matters	External
Debtor accounts – include message/flyer	As required	To create public awareness of a change in policy or promotion of events	External
Community Information Register	To be developed	An opportunity to create a flow of information and allow input into Council planning and implementation processes	External
Direct letters from Council database	As required	Cost effective and reaches a large audience	External
State and Federal member communication	As soon as possible	To provide important and sometimes complex information on a regular basis	External

INTERNAL COMMUNICATION			
Method- (what channel will Council use?)	**When will this be employed?**	**Why will this method be used?**	**Who will be the audience?**
Staff meetings	TBC	To provide important and sometimes complex information in an arena that allows for the free flow of information to and from the organisation	Internal
Toolbox Talks	Weekly/6 weekly	To provide important and sometimes complex information in an arena that allows for the free flow of information to and from the organisation	Internal
Department meetings	TBC	To provide important and sometimes complex information on a regular basis	Internal
Face-to-face with staff	As required/ongoing	To provide important and sometimes complex information on a regular basis	Internal
Regular **ALL OF** staff gatherings	As required	To provide important and sometimes complex information in an arena that allows for the free flow of information to and from the organisation	Internal
Consultative Committee	Bi-monthly	To provide important and sometimes complex information on a regular basis	Internal
Staff Bulletin	Weekly/fortnightly	To provide important and sometimes complex information on a regular basis	Internal
Direct messaging to staff	As required	To provide important and sometimes complex information on a regular basis	Internal

Potential Risks

- Opposition from residents of former Shires eg. Residual feelings in relation to merger.
- Councillors/Staff not aware of requirements/permissions around media coverage and social media comments/posts.
- Opposition/negative comments from residents due to lack of relevant and timely information.
- Staff hear more rumour than fact and act as ill-informed transmitters throughout the community.
- Council viewed as an "alternative" to traditional media advertising/promotion.

Risk Management

Potential Risk	Mitigation options
Opposition from residents of former Shires eg. Residual feelings in relation to merger.	Strong promotional activities with focus on key benefits and aspirational messaging. Creative and innovative methods for communication – not just reliant upon traditional media. Develop relevant and engaging fact sheets and promotional materials. Maintain strong media relations. Targeted information for key stakeholders and interested parties by Councils.
Councillors/Staff not aware of requirements/permissions around media coverage and social media comments/posts.	Council and Staff to be kept abreast of current issues. This information will form the basis of Councils' stance on the matters. Education process undertaken to inform Councillors and Staff of media delegations within the organisation. Councillors and Staff to be informed of social media obligations.
Opposition/negative comments from residents due to lack of relevant and timely information.	Communication and engagement is planned early wherever possible. Relevant and engaging information is provided within Council's communication mechanisms, ie web site, community newsletter, Facebook etc.
Staff hear more rumour than fact and act as ill-informed transmitters throughout the community.	Clearly and widely communicate key Council messages. Implement the Internal Communications Action Plan.

Council viewed as an “alternative” to traditional media advertising/promotion.	Set clear guidelines for what Council “promotes” on its official communications platforms.

Communication Evaluation

- Prepare a monthly publicity report analysing the positive, negative and neutral media coverage of Council. Report to highlight the key issues as identified by the community.
- Prepare monthly Social Media report to highlight top posts, visitor comments and engagement levels.
- Media monitoring to be undertaken internally and utilizing the Department of Premier and Cabinet clipping files (while available).
- Weekly/fortnightly review to be undertaken of Web Page content for accuracy and currency.

Murrumbidgee Council

Risk-Based Drinking Water Management System

September 2016

Review Date: September 2017 (or on system change)

Document Owner: Director of Technical Services

DOCUMENT INFORMATION

Version	Author	Reviewed by	Date	Details
1.0	Tasleem Hasan	Tasleem Hasan	29/9/16	Merger of DWMS' for the former Jerilderie and Murrumbidgee shires

Viridis Consultants Pty Ltd undertook the merger of the DWMS documents, based on review and discussions with relevant council staff and from information present in the original DWMS' for the former councils.

The original DWMS for the former Jerilderie Shire Council was developed by City Water Technology Pty Ltd and Risk Edge Pty Ltd in March 2014. The original DWMS for the former Murrumbidgee Shire Council was developed by Water Futures Pty Ltd in June 2013.

Executive Summary

DWMS Purpose

The NSW *Public Health Act 2010* was passed by Parliament at the end of 2010. The *Public Health Act 2010* (and its supporting regulation) includes the requirement for water suppliers to produce a Quality Assurance Program, which is based on the *Framework for Management of Drinking Water Quality* in the *Australian Drinking Water Guidelines* (NHMRC/NRMMC, 2011). For the purposes of implementation, this quality assurance program is termed a Risk-Based Drinking Water Management System (DWMS).

This document forms Murrumbidgee Council's overall DWMS and is based on the 12 Elements, 32 Components and 76 Actions of the Framework for Management of Drinking Water Quality.

DWMS Overall

This document is the overall DWMS for Murrumbidgee Council and it contains or references the overarching elements common to the different drinking water schemes.

Individual DWMS Plans

Individual DWMS Plans are available for each of the drinking water schemes, Jerilderie, Darlington Point and Coleambally (included as Appendices). The individual DWMS Plans contain system specific information to manage the risks to that particular scheme.

Critical Control Points

Murrumbidgee Council has established critical control points (CCPs) which are referenced in this document and in the individual DWMS Plans.

Incidents and Emergencies

Drinking water quality incidents and emergencies are managed through the Drinking Water Quality Incident and Emergency Response Plan.

Improvement Plan

An improvement plan forms part of the DWMS, and is available as a separate excel spreadsheet.

Contents

Introduction and Background

The *Public Health Act 2010* (NSW) ('the Act') requires drinking water suppliers to establish, and adhere to, a 'quality assurance program' (QAP) that complies with the *Public Health Regulation 2012* (NSW) ('the Regulation'). The Regulation requires water suppliers to implement a QAP consistent with the *Framework for Management of Drinking Water Quality* ('the Framework') in the *Australian Drinking Water Guidelines (ADWG) 2011* (NHMRC/NRMMC 2011). The QAP will be referred to as a Drinking Water Management System ('DWMS') and water utilities in NSW are required to have a DWMS in place by 1 September 2014.

As stated in the ADWG:

> *"The most effective means of assuring drinking water quality and the protection of public health is through adoption of a preventive management approach that encompasses all steps in water production from catchment to consumer."*

The NSW Government has encompassed this philosophy within the recent legislation. The Act includes the following requirement:

> *Section 25 Quality assurance programs*
>
> *(1) A supplier of drinking water must establish, and adhere to, a quality assurance program that complies with the requirements prescribed by the regulations.*

The Regulation states the following:

Part 5 Safety measures for drinking water

> *Clause 34 Quality assurance programs*
>
> *(1) For the purposes of section 25 (1) of the Act, a quality assurance program must address the elements of the Framework for Management of Drinking Water Quality (as set out in the Australian Drinking Water Guidelines published by the National Health and Medical Research Council) that are relevant to the operations of the supplier of drinking water concerned.*
>
> *(2) A supplier of drinking water must provide the Director-General with a copy of its most recent quality assurance program.*
>
> *(3) The Director-General may arrange for the review of a quality assurance program of a supplier of drinking water at any time.*

In developing a management system, water suppliers should undertake a risk assessment from catchment to consumer and develop critical control points to ensure that unsafe water is not released into the distribution system and that treated water is protected from contamination during distribution.

This DWMS forms Murrumbidgee Council's QAP. This DWMS is a risk-based system which has been developed based on the 12 Elements, 32 Components and 76 Actions of the Framework and the *NSW Guidelines for Drinking Water Management Systems 2013* (NSW Health/ DPI Water 2013). The DWMS is supported by a range of procedures, registers, drawings, etc., which are referenced at appropriate points in this document.

Overview of the Framework

The ADWG set out a holistic approach to drinking water management including understanding where sources of contamination may arise and how contamination may find its way to the consumer. The approach is termed the *Framework for Management of Drinking Water Quality* ('the Framework'; Figure 1).

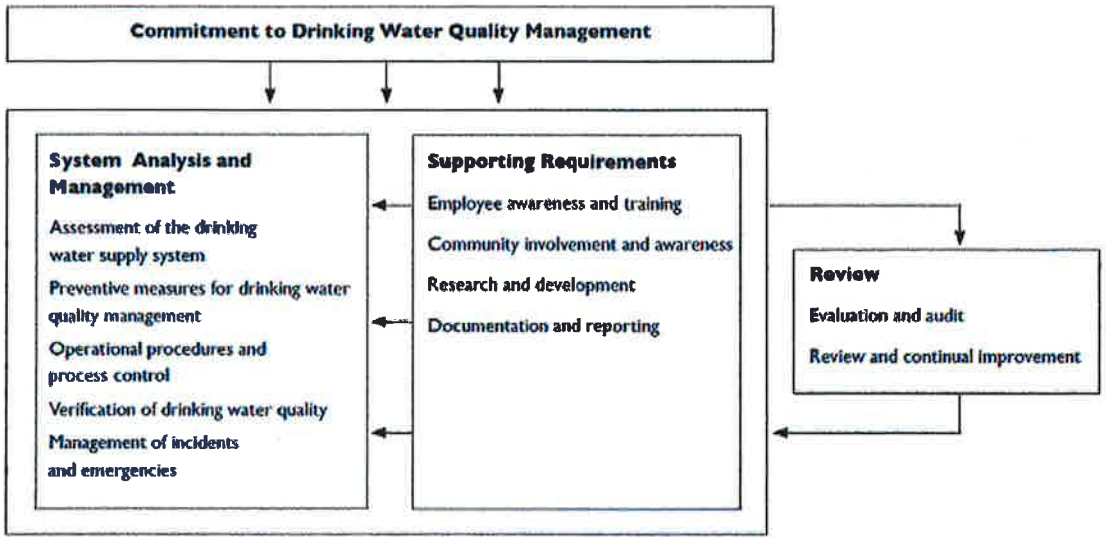

Figure 1: Framework for Management of Drinking Water Quality (NHMRC/NRMMC 2011)

ADWG (2011) sets out six guiding principles for drinking water management as follows:

1. *The greatest risks to consumers of drinking water are pathogenic microorganisms. Protection of water sources and treatment are of paramount importance and must never be compromised.*
2. *The drinking water system must have, and continuously maintain, robust multiple barriers appropriate to the level of potential contamination facing the raw water supply.*
3. *Any sudden or extreme change in water quality, flow or environmental conditions (e.g. extreme rainfall or flooding) should arouse suspicion that drinking water might become contaminated.*
4. *System operators must be able to respond quickly and effectively to adverse monitoring signals.*
5. *System operators must maintain a personal sense of responsibility and dedication to providing consumers with safe water, and should never ignore a consumer complaint about water quality.*
6. *Ensuring drinking water safety and quality requires the application of a considered risk management approach.*

Scope

This DWMS applies to the operation and maintenance of the following drinking water supply systems (described in Section 2.1):

- Jerilderie
- Coleambally
- Darlington Point

Document Control

This DWMS document is owned by the Director of Technical Services. The Director of Technical Services is responsible for ensuring that the DWMS is reviewed annually when the DWMS Annual Report is compiled and on system change.

DWMS Responsibilities and Authorities

MC employees are encouraged to participate in decisions that affect their jobs and areas of responsibility. This participation fosters a sense of ownership for decisions and their consequences. Specific drinking water management responsibilities and authorities are described in position descriptions, which are maintained by MC's Human Resources department. The main responsibilities and authorities related to the DWMS are listed below.

All Managers and Employees

All managers and employees involved in the supply of drinking water are responsible for:

- Understanding, implementing, maintaining and continuously improving the DWMS
- Being aware of:
  - The Drinking Water Quality Policy
  - Characteristics of the water supply system and preventive strategies in place throughout the system
  - Regulatory and legislative requirements
  - Roles and responsibilities of employees and departments
  - How their actions can impact on water quality and public health.

Councillors

Councillors are responsible for:

- Reviewing and approving the Drinking Water Quality Policy as required
- Reviewing and approving MC's budget annually
- Overall responsibility for management of drinking water quality, but this responsibility is delegated to the relevant directors and supervisory staff.

General Manager

The General Manager is responsible for approving new employees on directors' recommendations. In so doing, the General Manager is responsible for ensuring that only appropriately qualified and experienced personnel are employed by MC.

Director of Technical Services

The Director of Technical Services is responsible for:

- Supporting and promoting the Drinking Water Quality Policy and the establishment and continual improvement of a DWMS
- Maintaining oversight of the effectiveness of the DWMS
- Evaluating the need for change
- Ensuring the following key elements of the DWMS are developed and implemented:
  - Processes for the assessment of the drinking water supply system and preventive measures for drinking water quality management, with a focus on critical control points
  - Operational procedures, process control and verification of drinking water quality
  - Management of incidents and emergencies
  - Processes to ensure that employees, including contractors, maintain the appropriate experience and qualifications
  - Processes and communication procedures to increase employees' awareness of and participation in drinking water quality management
  - Processes to identify, communicate and review compliance requirements
  - Processes for identifying all stakeholders who could affect, or be affected by, council decisions or activities on the water supply systems
  - Processes for the systematic evaluation of activities and processes to confirm that objectives are met through internal and external audits
  - Processes to identify and act on drinking water quality improvements, including communication and monitoring of effectiveness of improvements
- Management review of the DWMS and in particular:
  - Reviewing reports from audits, drinking water quality performance and previous management review and authorising implementation of improvements where relevant
  - Considering concerns of consumers, regulatory and other stakeholders
  - Evaluating the suitability of the Drinking Water Quality Policy, objectives and preventive strategies in relation to changing internal and external conditions

Water Operators

Water Operators are responsible for:

- Operation and maintenance of the water treatment facilities
- Operation and maintenance of water testing functions to meet operational and reporting needs
- Primary response to incidents
- Bringing water quality issues to management's attention when they become aware of those issues
- Awareness of their actions in protecting drinking water quality

Element 1 Commitment to Drinking Water Quality Management

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.

MC's drinking water quality policy statement is provided below.

The policy is in the process of being adopted by council to demonstrate compliance with drinking water quality management.

Murrumbidgee Council is committed to managing its water supply effectively to provide a safe, quality product that consistently meets appropriate drinking water standards developed in accordance with the *Australian Drinking Water Guidelines* and other regulatory requirements.

To achieve this, **Murrumbidgee Council** will implement and maintain a *Drinking Water Management System* to effectively manage the risks to drinking water quality.

In partnership with relevant stakeholders, **Murrumbidgee Council** will:

- manage water quality at all points, from catchment (where possible) through to treatment, storage and distribution;
- use a risk-based approach in which potential threats to water quality are identified and balanced;
- develop incident response processes to deal with any water quality issues identified;
- ensure that employees and any contractors involved in the supply of drinking water understand their responsibility and are appropriately trained to implement the *Drinking Water Management System*;
- routinely monitor the quality of drinking water; use effective reporting mechanisms to provide relevant and timely information; and promote confidence in the water supply and its management;
- comply with the regulatory requirements of the Public Health Act 2010 (NSW) and associated Public Health Regulation 2012; and
- continually improve our practices by assessing performance against criteria stated in the *Drinking Water Management System*.

All managers and employees involved in the supply of drinking water are responsible for understanding, implementing, maintaining and continuously improving the *Drinking Water Management System*.

Dated: Signed by Responsible Officer:

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.

Regulatory and formal requirements are communicated to staff as required through meetings. via regular management meetings and toolbox talks, which are minuted as appropriate. Table 1-1 is reviewed annually when the DWMS Annual report is compiled.

Table 1-1: Regulatory and formal requirements

INSTRUMENT	JURISDICTION	TYPE	RELEVANCE
Plumbing and Drainage Act 2011	NSW	Statute	Largely for management of the distribution system including legislative requirements for plumbing and drainage works
Plumbing and Drainage Regulation 2012	NSW	Regulation	Largely for management of the distribution system including legislative requirements for plumbing and drainage works
AS/NZS 3500 Plumbing and Drainage Set	National	Standard	Largely for management of the distribution system including standards for plumbing and drainage issues
Plumbing Code of Australia 2013	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 *Home Building Act 1989* (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 2012	NSW	Regulation	Requirement to prepare a drinking water management system in accordance with the ADWG Framework for Management of Drinking Water Quality. Requirement to keep records of all water carters supplied.
Protection of the Environment Operations Act 1997	NSW	Statute	Environmental protection including licensed discharges.

INSTRUMENT	JURISDICTION	TYPE	RELEVANCE
NSW Water and Sewerage Strategic Business Planning Guidelines	NSW	Guidelines	Prepare Strategic Business plans including a review of the operating environment and IWCM which should identify key water quality issues in the catchment.
NSW Health Drinking Water Monitoring Program	NSW	Guidelines	Free-of-charge testing for water supply system monitoring of indicator bacteria and health-related inorganic chemicals. Includes NSW Health Response Protocols for chemical and microbial quality, treatment failure and *Cryptosporidium* and *Giardia*.

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.

Key stakeholders relevant to drinking water quality management include:

- NSW Health
- DPI Water

Other stakeholders are involved when and as required, for example, vulnerable customers, water testing laboratory, emergency contacts.

The contact details for all stakeholders, including when they are involved/contacted is maintained in an Incidents Contacts and Stakeholders register (excel spreadsheet), which is reviewed annually when the DWMS Annual report is compiled.

Element 2 Assessment of the Drinking Water Supply System

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.

2.1.1 Water Quality Team

The Risk Assessment Team is shown in Table 2-1, other stakeholders are invited as required. When a risk assessment is undertaken, the workshop participants are recorded in the respective Risk Workshop report.

Table 2-1: Risk Assessment Team

ORGANISATION	ROLE
Murrumbidgee Council	Director of Technical Services
	Environmental Services
	Operation Managers – North and South
	Water Operators
NSW Health	Local Public Health Unit Representative
DPI Water	Officer
DWMS Expert Consultant	Workshop Facilitator

The core Water Quality Team for ongoing implementation and maintenance of the DWMS consists of:

- Director of Technical Services
- Operation Managers
- Water Operators

The core Water Quality Team is supported by the local NSW Health Environmental Health Officer and local DPI Water Officer.

2.1.2 Water Supply Systems

Details of the water supply systems and process flow diagrams are included in individual DWMS' for the 3 schemes, refer to Appendices A-C.

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.

Long term historical water quality data relevant for each scheme are analysed prior to the risk assessment workshop, the results of which are captured in the respective Risk Workshop Report. A summary of the issues identified for each water supply system in included in their individual DWMS Plan (refer to Appendices A-C).

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.

The risk assessment methodology adopted was as follows:

Events and hazards were identified for each process step. Risks posed by each of the events were assessed. Participants were asked to identify the:

Hazardous event A hazardous event is one that introduces contaminants (hazards) to the water.

For this risk assessment the hazardous event was for the level of contamination to be unacceptable for treatment through the downstream processes. Examples of a hazardous event might be:

- Cyanobacterial bloom resulting in toxins that cannot be removed by downstream processes
- Distribution reservoir contamination by vermin resulting in pathogens in the distribution system

Hazard	A hazard is a physical, chemical or biological agent in the water with the potential to cause an adverse effect. Examples of hazards might be: • Human-infectious pathogens and nutrients from failing septic tanks • Particles and nutrients from land clearing practices
Controls in place	Controls are practices and equipment that reduce the hazard or the hazardous event. Examples of controls include: • Catchment management programs to reduce nutrients in the river, thereby reducing cyanobacterial blooms • A water treatment plant • A backflow prevention program
Controlled Risk	Controlled or 'residual' risk was assessed by identifying the likelihood and consequence of the hazardous event occurring with the control in place. The risks were assessed as Likelihood (Table 2-2) x Consequence (Table 2-3). A risk assessment matrix (ADWG, 2011) was used to assess risks to the identified end uses (Table 2-4).
Maximum Risk	Likelihood and consequence of the hazardous event occurring if the controls were to fail or considered inadequate.

The results were captured during the workshop via a Microsoft Excel® spreadsheet. The risk assessment will be reviewed comprehensively every 4 years (with the next review due in 2018), unless there is a significant change to the supply scheme (e.g. treatment processes).

Table 2-2: Likelihood Table (ADWG, 2011)

Level	Descriptor	Example Description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur or should occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Table 2-3: Consequence Table (ADWG, 2011)

Level	Descriptor	Example Description
1	Insignificant	Insignificant impact, little disruption to normal operation, low increase in normal operation costs
2	Minor	Minor impact for small population, some manageable operation disruption, some increase in operating costs
3	Moderate	Minor impact for large population, significant modification to normal operation but manageable, operation costs increase, increased monitoring
4	Major	Major impact for small population, systems significantly compromised and abnormal operation if at all, high level of monitoring required
5	Catastrophic	Major impact for large population, complete failure of systems

Table 2-4: Risk Matrix (ADWG, 2011)

Likelihood	Consequences				
	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
A (almost certain)	Moderate	High	Very high	Very high	Very high
B (likely)	Moderate	High	High	Very high	Very high
C (possible)	Low	Moderate	High	Very high	Very high
D (unlikely)	Low	Low	Moderate	High	Very high
E (rare)	Low	Low	Moderate	High	High

Element 3 Preventive Measures for Drinking Water Quality Management

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.
- Document the preventive measures and strategies into a plan addressing each significant risk.

MC's preventive measures were identified and assessed during the Risk Workshops, and have been documented alongside the significant risks that they address in the Risk Registers. Gaps identified in the workshop were noted as actions in the Risk Registers and are included in the Improvement Plan.

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.

Key risks were reviewed during the Risk Workshops and critical control points (CCPs) identified. For a point to satisfy the requirements of a CCP it must:

- Control hazards that represent a significant risk and require elimination or reduction to assure supply of safe drinking water
- Have a parameter (surrogate) that can be measured in a timely manner for the hazardous event
- Be able to have a correction applied in a timely manner in response to a deviation in the process

The CCPs were reviewed in September 2016. They are included in the individual DWMS Plans (refer to Appendices A-C).

Element 4 Operational Procedures and Process Control

4.1 Operational Procedures

- Identify procedures required for processes and activities from catchment to consumer.
- Document all procedures and compile into an operations manual.

The available operational procedures to control risks are included in the individual DWMS Plans (refer to Appendices A-C). Some procedures need to be reviewed and/or developed (formalised), and these are part of the Improvement Plan.

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 operational monitoring conducted at each supply scheme is included in the respective DWMS Plan (refer to Appendices A-C).

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.

MC has a number of corrective actions associated with CCPs, which are summarised in the respective DWMS Plans.

MC communicates operational issues internally via operational meetings. Communication systems for water quality issues also include:

- Informal liaison with local NSW Health Environmental Health Officer
- Informal liaison with local DPI Water Officer

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.

Reliability of MC's monitoring equipment is informally verified against monitoring equipment used by the local DPI Water Officer.

Other details relevant to this section are included in the individual DWMS Plans (refer to Appendices A-C).

4.5 Materials and chemicals

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

MC orders water treatment chemicals and materials from reputable suppliers.

The chemicals used at the different schemes is included in the individual DWMS Plans (refer to Appendices A-C).

Process monitoring at CCPs provides additional assurance for many possible failure modes. For example, incorrectly formulated or dosed chemicals typically do not perform adequately leading to process malfunction and critical limit nonconformities.

Chemical deliveries are attended by trained water treatment plant operators, reducing the risk of delivery error.

Element 5 Verification of Drinking Water Quality

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 are representative and reliable.

MC participates in the NSW Health Drinking Water Monitoring Program. As part of this, MC collects samples for microbiological analysis weekly at various sites in each drinking water reticulation system. MC also collects samples for chemical analysis twice-yearly from various points in each reticulation system.

The sample points are listed in the individual DWMS Plans (refer to Appendices A-C).

Parameters monitored as part of the 'microbiology' analysis suite include:

- *E. coli*
- Free Chlorine
- pH
- Total Chlorine
- Total Coliforms
- Turbidity

Parameters monitored as part of the 'chemistry' analysis suite include:

- Aluminium
- Antimony
- Arsenic
- Barium
- Boron
- Cadmium
- Calcium
- Chloride
- Chromium
- Copper
- Cyanide
- Fluoride
- Fluoride Ratio
- Iodide
- Iodine
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Nitrate
- Nitrite
- pH
- Selenium
- Silver
- Sodium
- Sulphate
- Total Dissolved Solids (TDS)
- Total Hardness as $CaCO_3$
- True Colour
- Turbidity
- Zinc

All samples are sent to Sydney to NSW Health's NATA accredited laboratory and both NSW Health and MC are provided with results from the analyses. Under the NSW Health Drinking Water Monitoring Program, local water utilities are notified of results that exceed a guideline value.

5.2 Consumer Satisfaction

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

Where appropriate, MC Water and Sewer staff respond complaints with urgency by collecting samples for further analysis and/or flushing mains in the vicinity of the complaint.

The process for recording complaints and resolutions will be consolidated between the schemes.

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.

The recording and review of daily operational monitoring results is included in the respective DWMS Plan (refer to Appendices A-C).

Review of the results for the NSW Health Drinking Water Monitoring program is undertaken by the testing laboratory and any exceedence notified to relevant MC staff and the local PHU.

Where non-compliant water quality is identified through short-term evaluation of results, response protocols include those actions listed under Component 5.4 below.

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.

Water quality incidents are managed according to section 6 of this document.

Reactive flushing is undertaken following customer complaint.

MC also relies on guidance documents from external parties for appropriate corrective actions, including the following, which are publically available via the NSW Health website:

- NSW Health Drinking Water Monitoring Program Handbook:
  - http://www.health.nsw.gov.au/environment/water/Pages/Drinking-Water-Quality-and-Incidents.aspx
- NSW Health Response Protocols (which form part of the Drinking Water Quality Incident and Emergency Response Plan, section 6.0):
  - http://www.health.nsw.gov.au/environment/water/pages/drinking-water.aspx

Element 6 Management of Incidents and Emergencies

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.

MC maintains an Incident Contacts and Stakeholders list (excel spreadsheet) in case of water quality incidents/emergencies. The emergency contact list is reviewed annually when the DWMS annual report is compiled.

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.

Incident and emergency response protocols are regarded as a priority. MC uses their Drinking Water Quality Incident and Emergency Response Plan (DWQ IERP) for water quality incident management. These are based on the NSW Health Response Protocols.

Water quality incidents and emergencies are reported to the local NSW Health PHU and DPI Water, as required. The need to issue (and withdraw) a boil water alert is assessed in consultation with the local PHU (explained in the DWQ IERP).

Management of significant incidents and emergencies is covered by council's Disaster Plan.

Element 7 Employee Awareness and Training

7.1 Employee Awareness and Involvement

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

MC communicates water quality issues with employees via three monthly operational meetings. Employees are also encouraged to discuss water quality via:

- Informal liaison with local NSW Health Environmental Health Officer
- Informal liaison with local DPI Water Officer

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.

All MC water and sewer operators have undergone training in water operations and are upgrading their certifications, where required. Operators are also encouraged to attend various conferences and workshops.

For contractors working on the drinking water systems, MC relies on the company reputation and the recommendations of local water authorities to ensure suitable qualifications and experience.

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 on a needs basis for water supply improvements, for example, addition of new chemicals or process, which may be of interest to the community.

Methods of community consultation that MC may use include:

- Community meetings
- Surveys
- Radio and newspaper interviews and reports
- Discussions with local social groups and advocacy groups
- Information in quarterly ratepayer notices
- Public forums
- Social media

8.2 Communication

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

MC receives community feedback about water quality via complaints, as detailed in Section 5.2.

MC also uses the following mechanisms to inform the community about water quality issues:

- Community consultation methods as detailed in Section 8.1
- Community consultation as described in the DWQ IERP

Element 9 Research and Development

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.

The risk assessment process is used as one of the means to initiate or undertake investigative activities or research, as necessary. These are identified when the risk workshop is undertaken and delivered through the implementation of the Improvement Plan respective action. The results from the investigation are used during the risk assessment review.

Other investigative programs include:

- DPI Water Officer reports and implementation of the corrective actions arising from those reports
- One-off samples taken in response to customer requests when considered necessary
- Council commissioned investigations for example, the recent (Aug 2015) Jerilderie WTP Upgrade Investigative Report prepared by Public Works

9.2 Validation of Processes

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

Validation of MC's processes and procedures was undertaken as part of the risk assessment for this DWMS.

The C.*t* values with disinfection parameters for each WTP, where calculated, are included in the respective DWMS Plans (refer to Appendices A-C).

MC will be revalidating processes through CCP implementation and data analysis, which was initiated through this DWMS. The assessment of CCP performance during the compilation of the DWMS Annual report will assist with this.

9.3 Design of Equipment

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

MC relies on consultants and contractors to validate the selection and design of new equipment required for upgrades and process improvements. All new infrastructure must also be approved by DPI Water, in accordance with Section 60 of the *Local Government Act 1993* (NSW), prior to construction.

Element 10 Documentation and Reporting

10.1 Management of Documentations 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.

This DWMS, including the individual DWMS Plans, DWQ IERP and CCP procedures, documents key information relevant to drinking water quality management.

The Director of Technical Services maintains access to the current versions of all documents, and provides it to operators/others as required.

The NSW Health Drinking Water Database is used as a records management system for MC's water quality results that are collected as a part of that program.

The documents developed as part of the DWMS have the review dates stated in them. The Director of Technical Services or delegate ensures that the documents are reviewed when required.

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.

The DWQ IERP includes reporting and communication lines between plant operators and their supervisor. The supervisor also communicates upwardly as required.

Information is reported through the various DPI Water requirements under the NSW Water Supply and Sewerage Strategic Business Planning Guidelines.

Other internal and external reporting includes:

- To Councillors (via Council meetings)
- MSC Management Plan
- MSC Annual Report
- State of the Environment reporting

MC also prepares the DWMS Annual Report annually summarising the implementation of the DWMS and water quality performance. This report is submitted to the local PHU.

Element 11 Evaluation and Audit

11.1 Long-Term Evaluation of Results

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

Long term trending of data was carried out for the risk assessment workshops, and is captured within the Risk Workshop Reports.

MC uses the NSW Drinking Water Database for long-term (12 months) evaluation of distribution water quality results, and includes it in the DWMS Annual report. The performance of CCPs are also evaluated and included in the DWMS Annual report.

11.2 Audit of Drinking Water Quality Management

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

Informal inspections of the system are carried out by operators.

External inspections of the system are also carried out by the local DPI Water Officer during visits. The Officer's findings are used to help direct works.

MC uses the preparation of the DWMS Annual Report as a means to simulate the internal audit. Refer to section 12.1 for details.

The external audit frequency is not yet established by NSW Health, MC will adhere to it when informed. For external audits, MC will engage an independent auditor approved in consultation with the PHU.

Element 12 Review and Continual Improvement

12.1 Review by Senior Executive

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

Review by the senior executive is fundamental to continually improving water quality and consistently delivering a safe quality water supply.

The Director of Technical Services (or designate) is responsible for reviewing the effectiveness of the management system, its implementation and for keeping the DWMS current, in discussions and consultation with relevant staff (e.g. operation Managers, water operators).

The following are reviewed annually and included in the DWMS Annual report:

- any changes to the regulatory and formal requirements table (section 1.2)
- any changes to the stakeholders/emergency contact list
- supply system details, including schematics (in respective DWMS Plans, Appendices A-C). Update schematic, if required
- drinking water quality performance (section 11.1)
- CCP performance (implementation of CCPs and documented response to any exceedances)
- outcomes of drinking water quality incidents and emergencies
- any changes to the risk register
- concerns of consumers (customer complaints)
- audit outcomes (section 11.2)
- improvement plan progress
- any concerns from NSW Health and DPI Water

If the DWMS is changed as a result of this review, then the updated DWMS is submitted to the PHU.

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.

An improvement plan (Excel register) is used by MC for continuous improvements and to address identified needs for full implementation of the DWMS.

It is the responsibility of the Director of Technical Services (or designate) to ensure that the Improvement Plan is implemented, up-to-date and communicated to relevant water staff.

Progress against the Improvement Plan is reviewed by the Director (or designate) as required, and at least annually (refer to section 12.1).

References

NHMRC, NRMMC (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.

NSW Health, NSW DPI Water (2013). NSW Guidelines for Drinking Water Management Systems 2013. NSW Health, NSW Department of Primary Industries – Office of Water, New South Wales, North Sydney.

Appendix A Jerilderie DWMS Plan

Murrumbidgee Council

Jerilderie DWMS Plan

September 2016

Review Date: September 2017 (or on system change)

Document Owner: Director of Technical Services

DOCUMENT INFORMATION

Version	Author	Reviewed by	Date	Details
1.0	Tasleem Hasan	Tasleem Hasan	29/9/16	Resulting from merger of DWMS' for the former Jerilderie and Murrumbidgee shires

Viridis Consultants Pty Ltd undertook the merger of the DWMS documents, based on review and discussions with relevant council staff and from information present in the original DWMS' for the former councils.

The original DWMS for the former Jerilderie Shire Council was developed by City Water Technology Pty Ltd and Risk Edge Pty Ltd in March 2014. The original DWMS for the former Murrumbidgee Shire Council was developed by Water Futures Pty Ltd in June 2013.

Executive Summary

DWMS Purpose

The NSW *Public Health Act 2010* was passed by Parliament at the end of 2010. The *Public Health Act 2010* (and its supporting regulation) includes the requirement for water suppliers to produce a Quality Assurance Program, which is based on the *Framework for Management of Drinking Water Quality* in the *Australian Drinking Water Guidelines* (NHMRC/NRMMC, 2011). For the purposes of implementation, this quality assurance program is termed a Risk-Based Drinking Water Management System (DWMS).

Murrumbidgee Council's overall DWMS is based on the 12 Elements, 32 Components and 76 Actions of the Framework for Management of Drinking Water Quality.

DWMS Overall

The overall DWMS for Murrumbidgee Council contains or references the overarching elements common to the different drinking water schemes.

Jerilderie DWMS Plan

This document is the Jerilderie DWMS Plan. It contains system specific information to manage the risks to this particular scheme.

Critical Control Points

Jerilderie's critical control points (CCPs) and procedures are included in this document.

Incidents and Emergencies

Drinking water quality incidents and emergencies are managed through the Drinking Water Quality Incident and Emergency Response Plan, which is a separate complementary document.

Improvement Plan

An improvement plan forms part of the overall DWMS, and is available as a separate excel spreadsheet.

Contents

Introduction and Background

The *Public Health Act 2010* (NSW) ('the Act') requires drinking water suppliers to establish, and adhere to, a 'quality assurance program' (QAP) that complies with the *Public Health Regulation 2012* (NSW) ('the Regulation'). The Regulation requires water suppliers to implement a QAP consistent with the *Framework for Management of Drinking Water Quality* ('the Framework') in the *Australian Drinking Water Guidelines (ADWG) 2011* (NHMRC/NRMMC 2011). The QAP will be referred to as a Drinking Water Management System ('DWMS') and water utilities in NSW are required to have a DWMS in place by 1 September 2014.

As stated in the ADWG:

> *"The most effective means of assuring drinking water quality and the protection of public health is through adoption of a preventive management approach that encompasses all steps in water production from catchment to consumer."*

The NSW Government has encompassed this philosophy within the recent legislation.

Scope

This DWMS Plan applies to the operation and maintenance of the Jerilderie drinking water scheme.

Document Control

This DWMS document is owned by the Director of Technical Services. The Director of Technical Services is responsible for ensuring that the DWMS is reviewed annually and on system change.

DWMS Responsibilities and Authorities

MC employees are encouraged to participate in decisions that affect their jobs and areas of responsibility. This participation fosters a sense of ownership for decisions and their consequences. Specific drinking water management responsibilities and authorities are described in position descriptions. The main responsibilities and authorities related to this DWMS Plan are listed below.

All Managers and Employees

All managers and employees involved in the supply of drinking water are responsible for:

- Understanding, implementing, maintaining and continuously improving the DWMS
- Being aware of:
  - The Drinking Water Quality Policy
  - Characteristics of the water supply system and preventive strategies in place throughout the system
  - Regulatory and legislative requirements
  - Roles and responsibilities of employees and departments
  - How their actions can impact on water quality and public health.

Water Operators

Water Operators are responsible for:

- Operation and maintenance of the water treatment facilities
- Operation and maintenance of water testing functions to meet operational and reporting needs
- Primary response to incidents
- Bringing water quality issues to management's attention when they become aware of those issues
- Awareness of their actions in protecting drinking water quality

1. Assessment of the Drinking Water Supply System

1.1 Process Flow Diagram

A process flow diagram (PFD) of the Jerilderie water supply system is shown in Figure 1-1.

The diagram is reviewed annually when the DWMS annual report is compiled.

1.2 System Summary

The system description is summarised in Table 1-1.

Table 1-1: Jerilderie Supply System Summary

SYSTEM COMPONENT	DESCRIPTION
Population Served	1070 (Census 2011)
Water Source	Open rural residential, grazing and horticultural catchment Billabong Creek
Raw Water Filters and Storage	Pumped from Billabong Creek at Pump Station approx. 650m upstream of weir. There are two self-cleaning filters of about 100 µm. Pre-screened water is pumped to Steel Raw Water Storage Tower (2.50 ML Capacity) and Gravity fed back to Concrete Storage Tower (0.580 ML Capacity) as required by Water Filtration Plant.
Water Treatment	Gravity main to Treatment Plant Water Treatment Plant: • Soda ash dosing for pH correction • Alum dosing to begin coagulation and flocculation • Powered activated carbon dosing (when required) for taste, odour and toxin removal • Permanganate dosing (when required) for manganese removal • Sedimentation tank for clarification • Gravity single media sand filter for filtration • Chlorine (gas) for disinfection NON-POTABLE Raw water is distributed to Jerilderie via dual reticulation for non-potable uses, not intended for drinking.
Storage After Treatment	Closed / Steel Tower (0.5 ML Capacity) adjacent to Raw Water Tower in Nowranie Street, Jerilderie.
Distribution of Product	Reticulation pipes of various diameters and materials and extend through town for approximately 19.80 km in length
Any Special Controls Required	Backflow prevention and elimination of cross-connections from the dual raw water reticulation system (Existing Meters)

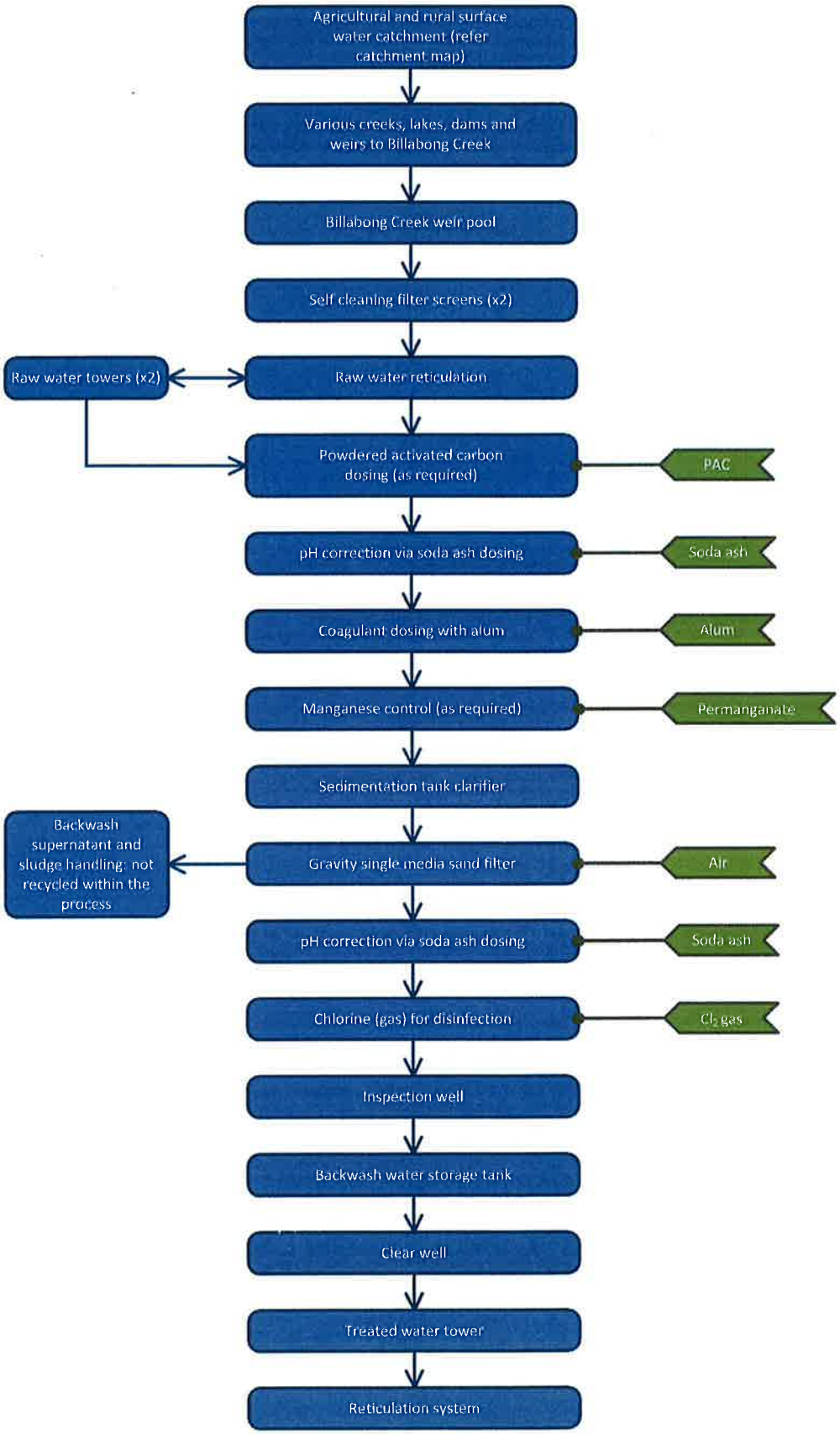

Figure 1–1: Jerilderie Process Flow Diagram

1.3 Detailed System Description

The Water Filtration Scheme was commissioned in 1983. The scheme is supplied from the Billabong Creek, with the raw water pump station located adjacent to the Billabong Creek approximately 400 m ø north of the Water Filtration Plant. Raw water is screened through two self-cleaning filters and then pumped through a 200 mm ø Pipe to a 2.50 ML Steel Water Tower (next to railway station at southern end of the town) and gravity fed back to a 0.58 ML Concrete Water Tower on demand by the Filtration Plant.

Billabong Creek flows through the Township of Jerilderie.

The catchment includes:

- Recreational Activities
- Stock grazing
- Horticulture activities (Wheat, Canola, Rice, Tomatoes, Onions, Olives, Various Cereal Crops, Small Factory and Poultry Farming)
- Jerilderie Township
- Jerilderie Residences including scattered Rural Housing with septic tanks

There are no Upstream Dams on Billabong Creek within the Jerilderie area, however, water is pumped from the Billabong Creek into storage dams located on properties that border the Billabong creek.

Water is pumped upstream of a small weir on the Billabong Creek, through raw water pipelines (200 mm diameter) to a Steel Raw Water Tower of 2.50 ML capacity.

Raw Water is delivered to the Water Treatment Plant by a gravity main through the town's raw water reticulation mains (approx. distance travelled depending on pressure could be 2 km in length) into the 0.58 ML Concrete Water Tower (Storage for the Water Filtration Plant.)

The Water Filtration Plant has an estimated 9.2 L/Sec total peak production capacity at 20 hours per day of 0.662 ML. The treatment plant was constructed and officially opened in 1983. Average daily demand is 0.29 ML/d and peak daily demand is between 0.4 and 0.42 ML/day. The plant does not run continuously; it runs for anywhere between 10 and 13 hours a day. The powdered activated carbon (PAC) dosing system was installed in 2010 to improve taste and odour. There is no fluoridation at the plant.

The treatment steps are listed in the table above in Table 1-1. Raw water is dosed with soda ash and an aluminium chlorohydrate solution. The dosed water is then directed to the sedimentation tank. Sludge collection cones collect settled aluminium chlorohydrate sludge and sludge is drawn off to sludge drying ponds. Following clarification, the water enters a sand filter for final polishing. The backwashing of the filter occurs each day and is manually triggered by the operators when the filter shell loss across the bed is approx. 1 m. The backwash is air scour assisted. It is a manual process and uses approximately 3 KL of water with the waste also discharged to the Settling Ponds (dam). Chlorine is added to filtered water prior to its discharge to the treated water (backwash) and then into the Clear Well Storage before pumped to the Filtered Water Reservoir (0.50 ML). There are duty and standby chlorine cylinders and pumps on hand as standby if required.

Currently, there is no online telemetered monitoring of raw water turbidity, filtered water turbidity or chlorine. There is an inline turbidity meter for measuring filtered water turbidity.

The treated water is transferred from the clear water (backwash tank) to the filtered water tower (0.5 ML), adjacent to the raw water tower at Nowranie St via the treated water reticulation system. The town can be supplied directly from the clear water storage while the pump is operating or via gravity from the tower.

The Tower is roofed and bird-proofed. The tower has telemetered continuously monitored low level alarm.

The existing reticulation system primarily comprises a mixture of 50 mm, 80 mm, 100 mm, 150 mm, and 200 mm diameter pipes primarily of PVC. The total length of the reticulation mains is 19.80 km.

Residual chlorine levels are tested daily and remain greater than 0.1 mg/L, even at the extremities of Town due to the relatively small distribution system.

1.4 Assessment of Water Quality Data

Long term historical water quality data relevant for each scheme are analysed prior to the risk assessment workshop, the results of which are captured in the respective Risk Workshop Report. A summary of the issues identified for Jerilderie is provided below:

Turbidity is sometimes higher than the ADWG target for chlorine disinfection of <1 NTU (based on daily data collected at the treatment plant). *E. coli* detection is rare.

1.5 Hazard Identification and Risk Assessment

The risk assessment details are present in the Risk Workshop Report.

2. Preventive Measures for Drinking Water Quality Management

2.1 Preventive Measures and Multiple Barriers

The preventive measures were identified and assessed during the Risk Workshop and have been documented, alongside the significant risks that they address, in the Risk Register.

2.2 Critical Control Points

Key risks were reviewed during the Risk Workshop and critical control points (CCPs) identified. For a point to satisfy the requirements of a CCP it must:

- Control hazards that represent a significant risk and require elimination or reduction to assure supply of safe drinking water
- Have a parameter (surrogate) that can be measured in a timely manner for the hazardous event
- Be able to have a correction applied in a timely manner in response to a deviation in the process

The CCPs were reviewed in September 2016.

Jerilderie Scheme

	Parameter	Operational Target	Adjustment Limit	Critical Limit
Filtration	Turbidity	<0.5 NTU	>0.8 NTU	>1.0 NTU
Primary Disinfection Chlorine	Free chlorine	1.5-2.0 mg/L	<1.0, >2.5 mg/L	<0.5, >5.0 mg/L
	pH	7.0-7.6	>8.0	>8.5

Operational Target	This is where you should be operating. Aim to keep the system operating at this value.
Adjustment Limit	If you reach this limit, refer to CCP procedure and try to get back to the operational target. Increase monitoring until returned to normal.
Critical Limit	If you reach this limit, you have lost control of your system. Refer to CCP procedure and try to return to operational target as a matter of urgency.

The CCP procedures are provided below, which the operators use.

Jerilderie CCP 1 – Filtration – Post Filter Turbidity

What is the control point?	**Filtration**
What are the hazards?	**Pathogens, turbidity**
What is being measured / when?	**Filtered water turbidity (when plant is running) / daily**
How are the hazards controlled?	**Optimise flocculation, coagulation, settling and filtration processes, investigate system**

Operational Target **<0.5 NTU**	Adjustment Limit >0.8 NTU	**Critical Limit** **>1.0 NTU, for 2 immediate consecutive samples**
• Routine water sampling and testing • Daily checks and visual inspection • Equipment checks • Dosing rate checks • Instrument calibration	• Contact Supervisor • Verify result with grab sample • Inspect filter, backwash if necessary • Inspect clarifier and floc size, carry out jar test if necessary • Inspect dosing systems • Test filtered water turbidity hourly, and other parameters as needed • **Fill in the water quality incident report and inform Supervisor.**	• Contact Supervisor • Full plant analytical investigation • Extended manual backwash • Consider shutting down plant, draining clarifier and then recommencing plant operation • Contact local DPI Water Officer, for advice if required • Consider boil water notice if issue is not resolving • **Fill in the water quality incident report and inform the Supervisor immediately.** The Supervisor to inform NSW Health PHU as soon as possible (and within 24 hours).

Jerilderie CCP 2 – Primary Disinfection – Final Free Chlorine

What is the control point?	**Final Water**
What are the hazards?	**Chlorine sensitive pathogens; excess chlorine; high pH causing ineffective disinfection**
What is being measured / when?	**Free chlorine and pH for final water / daily**
How are the hazards controlled?	**Adjust the chlorine and soda dose**

Operational Target **Free chlorine 1.5-2.0 mg/L** **pH 7.0-7.6**	Adjustment Limit Free chlorine <1.0, >2.5 mg/L pH >8.0	**Critical Limit** **Free chlorine <0.5, >5.0 mg/L** **pH >8.5, for 2 immediate consecutive samples**

• Routine water sampling and testing
• Daily checks and visual inspection
• Equipment checks
• Dosing rate checks
• Instrument calibration
	• Verify result by resampling and retesting
	• If >2.5 mg/L, adjust chlorine dose
	• Sample and test free chlorine hourly
	• If <1.0 mg/L, do following:
	  o Contact Supervisor
	  o Adjust dose if necessary
	  o Inspect dosing system
	  o Sample and test free chlorine hourly, and other parameters as needed
	• **Fill in the water quality incident report and inform Supervisor.**
		• Contact Supervisor
		• Adjust chlorine dose
		• Full plant analytical investigation
		• Sample and test reticulation free chlorine
		• If <0.5 mg/L, consider manual hypo dosing to reservoir
		• If >5.0 mg/L, consider holding water in reservoir until excess chlorine has dissipated (if possible)
		• Consider plant shutdown
		• Contact local DPI Water Officer, for advice if required
		• Consider boil water notice if issue is not resolving
		• **Fill in the water quality incident report and inform the Supervisor immediately**. The Supervisor to inform NSW Health PHU as soon as possible (and within 24 hours).

3. Operational Procedures and Process Control

3.1 Operational Procedures

The CCP procedures are included above in section 2 of this document. Other supporting operational procedures are available for use by operators through the Director of Technical Services or the respective area Operation Manager.

3.2 Operational Monitoring

Operational monitoring is conducted as detailed in Table 3-1. These results are recorded in appropriate recording sheets.

Table 3-1: Jerilderie Operational Monitoring

PROCESS LOCATION	PARAMETER	FREQUENCY
Raw water	Turbidity	Daily
	pH	Daily
	Colour	Daily
Clarified water	pH	Daily
	Turbidity	Daily
Final water	Chlorine – free and total	Daily (refer to CCP2)
	pH	Daily (refer to CCP2)
	Turbidity	Daily (refer to CCP1)
	Colour	Daily
Reservoirs	Reservoir integrity	Every 6 months (reservoir inspection SOP)
Reticulation	Various locations - chlorine residual	Weekly

3.3 Corrective Action

The corrective actions associated with the CCPs are outlined in the CCP procedure in section 2.

Other corrective actions are undertaken as described in the Drinking Water Quality Incident and Emergency Response Plan, which is a separate and complementary document to this DWMS Plan.

3.4 Equipment capability and maintenance

The 2100 P turbidity meter, Cyberscan 500 pH meter and colorimeter are used to for testing water quality parameters. The inline turbidity meter is calibrated annually by a specialist contractor.

Reliability of monitoring equipment is informally verified against monitoring equipment used by the local DPI Water Officer.

3.5 Materials and chemicals

Chemicals and materials used include:

- chlorine gas
- permanganate (if needed)
- soda ash
- polyaluminium chlorohydrate
- powdered activated carbon (if needed)

4. Verification of Drinking Water Quality

4.1 Drinking Water Quality Monitoring

MC participates in the NSW Health Drinking Water Monitoring Program. As part of this, MC collects samples for microbiological analysis weekly at various sites in each drinking water reticulation system. MC also collects samples for chemical analysis twice-yearly from various points in each reticulation system.

The Jerilderie sample points are listed in Table 4-1.

Table 4-1: NSW Health Program Monitoring Sites

SCHEME	SAMPLE SITE LOCATION	NSW HEALTH SITE CODE
Jerilderie Supply System	McGillvrays Shed	001
	Winklers	002
	BP Service Station/Budget Motel	003
	Last House Showgrounds Road	004
	Shire Offices 35 Jerilderie Street	005
	Oaklands Lot 9	006
	Wunnamurra Estate Argoon	007
	Depot East Fence	008
	Last House in McDougall Street	009
	Airfield Rifle Range Road	010
	Wunnamurra Estate Bunyola	011

Parameters monitored as part of the 'microbiology' analysis suite include:

- *E. coli*
- Free Chlorine
- pH
- Total Chlorine
- Total Coliforms
- Turbidity

Parameters monitored as part of the 'chemistry' analysis suite include:

- Aluminium
- Antimony
- Arsenic
- Barium
- Boron
- Cadmium
- Calcium
- Chloride
- Chromium
- Copper
- Cyanide
- Fluoride
- Fluoride Ratio
- Iodide
- Iodine
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Nitrate
- Nitrite
- pH
- Selenium
- Silver
- Sodium
- Sulphate
- Total Dissolved Solids (TDS)
- Total Hardness as $CaCO_3$
- True Colour
- Turbidity
- Zinc

All samples are sent to Sydney to NSW Health's NATA accredited laboratory and both NSW Health and MSC are provided with results from the analyses. Under the NSW Health Drinking Water Monitoring Program, local water utilities are notified of results that exceed a guideline value.

4.2 Short-Term Evaluation of Results

The operational monitoring results are recorded in a log book. Operators review results daily as part of their operations and undertake corrective actions where required.

Review of the results for the NSW Health Drinking Water Monitoring program is undertaken by the testing laboratory and any exceedence notified to relevant MC staff and the local PHU.

4.3 Corrective Action

Water quality incidents are managed according to the Drinking Water Quality Incident and Emergency Response Plan.

Responses to water quality non-conformance can include:

- Resampling
- Increased operational monitoring
- Reactive flushing following customer complaint

5. Management of Incidents and Emergencies

5.1 Communication

The communication and reporting lines are described in the DWQ IERP.

5.2 Incident and Emergency Response Protocols

Incident and emergency response protocols are regarded as a priority. MC uses their Drinking Water Quality Incident and Emergency Response Plan (DWQ IERP) for water quality incident management. These are based on the NSW Health Response Protocols.

Water quality incidents and emergencies are reported to the local NSW Health PHU and DPI Water, as required. The need to issue (and withdraw) a boil water alert is assessed in consultation with the local PHU (explained in the DWQ IERP).

Management of significant incidents and emergencies is covered by council's Disaster Plan.

6. Operator Awareness and Training

MC communicates water quality issues with employees via three monthly operational meetings. Operators are also encouraged to discuss water quality via:

- Informal liaison with local NSW Health Environmental Health Officer
- Informal liaison with local DPI Water Officer

Operators are encouraged to discuss any additional or further training needs with their supervisors.

7. Research and Development

The Jerilderie clear water tank at the WTP provides sufficient contact time to meet the C.*t* value for disinfection.

8. Documentation and Reporting

8.1 Management of Documentations and Records

This DWMS Plan, including the DWQ IERP and CCP procedures, document key information relevant to drinking water quality management for the Jerilderie scheme.

The Director of Technical Services maintains access to the current versions of all documents, and provides it to operators/others as required.

Operators ensure that the correct forms are filled and records are made.

8.2 Reporting

The DWQ IERP includes reporting and communication lines between plant operators and their supervisor. The supervisor also communicates upwardly as required.

MC also prepares the DWMS Annual Report annually summarising the implementation of the DWMS and water quality performance. This report is submitted to the local PHU.

9. Evaluation and Audit

Informal inspections of the system are carried out by operators.

External inspections of the system are also carried out by the local DPI Water Officer during visits. The Officer's findings are used to help direct works.

MC uses the preparation of the DWMS Annual Report as a means to simulate the internal audit. Refer to section 12.1 of the Overall DWMS for details.

The external audit frequency is not yet established by NSW Health, MC will adhere to it when informed. For external audits, MC will engage an independent auditor approved in consultation with the PHU.

Operators maintain appropriate practices and records as described in this DWMS Plan to assist with audit purposes when required.

10. Review and Continual Improvement

The effectiveness of the DWMS will be reviewed by the Director of Technical Services, and need for any change or improvements will be identified, and rectified. For mid to long term improvement actions, these will be included in the Improvement Plan for implementation and monitoring.

The key improvements to the Jerilderie scheme include upgrade of the clarification and filtration process and online monitoring of CCP parameters (telemetered and linked to SCADA).

References

NHMRC, NRMMC (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.

NSW Health Drinking Water Database. Viewed on 10 August 2012. <http://www.drinkingwaterdb.nsw.gov.au/>.

NSW Health, NSW DPI Water (2013). NSW Guidelines for Drinking Water Management Systems 2013. NSW Health, NSW Department of Primary Industries – Office of Water, New South Wales, North Sydney.

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Appendix B Coleambally DWMS Plan

Murrumbidgee Council

Coleambally DWMS Plan

September 2016

Review Date: September 2017 (or on system change)

Document Owner: Director of Technical Services

DOCUMENT INFORMATION

Version	Author	Reviewed by	Date	Details
1.0	Tasleem Hasan	Tasleem Hasan	29/9/16	Resulting from merger of DWMS' for the former Jerilderie and Murrumbidgee shires

Viridis Consultants Pty Ltd undertook the merger of the DWMS documents, based on review and discussions with relevant council staff and from information present in the original DWMS' for the former councils.

The original DWMS for the former Jerilderie Shire Council was developed by City Water Technology Pty Ltd and Risk Edge Pty Ltd in March 2014. The original DWMS for the former Murrumbidgee Shire Council was developed by Water Futures Pty Ltd in June 2013.

Executive Summary

DWMS Purpose

The NSW *Public Health Act 2010* was passed by Parliament at the end of 2010. The *Public Health Act 2010* (and its supporting regulation) includes the requirement for water suppliers to produce a Quality Assurance Program, which is based on the *Framework for Management of Drinking Water Quality* in the *Australian Drinking Water Guidelines* (NHMRC/NRMMC, 2011). For the purposes of implementation, this quality assurance program is termed a Risk-Based Drinking Water Management System (DWMS).

Murrumbidgee Council's overall DWMS is based on the 12 Elements, 32 Components and 76 Actions of the Framework for Management of Drinking Water Quality.

DWMS Overall

The overall DWMS for Murrumbidgee Council contains or references the overarching elements common to the different drinking water schemes.

Coleambally DWMS Plan

This document is the Coleambally DWMS Plan. It contains system specific information to manage the risks to this particular scheme.

Critical Control Points

Coleambally's critical control points (CCPs) and procedures are included in this document.

Incidents and Emergencies

Drinking water quality incidents and emergencies are managed through the Drinking Water Quality Incident and Emergency Response Plan, which is a separate complementary document.

Improvement Plan

An improvement plan forms part of the overall DWMS, and is available as a separate excel spreadsheet.

Contents

Introduction and Background

The *Public Health Act 2010* (NSW) ('the Act') requires drinking water suppliers to establish, and adhere to, a 'quality assurance program' (QAP) that complies with the *Public Health Regulation 2012* (NSW) ('the Regulation'). The Regulation requires water suppliers to implement a QAP consistent with the *Framework for Management of Drinking Water Quality* ('the Framework') in the *Australian Drinking Water Guidelines (ADWG) 2011* (NHMRC/NRMMC 2011). The QAP will be referred to as a Drinking Water Management System ('DWMS') and water utilities in NSW are required to have a DWMS in place by 1 September 2014.

As stated in the ADWG:

> *"The most effective means of assuring drinking water quality and the protection of public health is through adoption of a preventive management approach that encompasses all steps in water production from catchment to consumer."*

The NSW Government has encompassed this philosophy within the recent legislation.

Scope

This DWMS Plan applies to the operation and maintenance of the Coleambally drinking water scheme.

Document Control

This DWMS document is owned by the Director of Technical Services. The Director of Technical Services is responsible for ensuring that the DWMS is reviewed annually and on system change.

DWMS Responsibilities and Authorities

MC employees are encouraged to participate in decisions that affect their jobs and areas of responsibility. This participation fosters a sense of ownership for decisions and their consequences. Specific drinking water management responsibilities and authorities are described in position descriptions. The main responsibilities and authorities related to this DWMS Plan are listed below.

All Managers and Employees

All managers and employees involved in the supply of drinking water are responsible for:

- Understanding, implementing, maintaining and continuously improving the DWMS
- Being aware of:
  - The Drinking Water Quality Policy
  - Characteristics of the water supply system and preventive strategies in place throughout the system
  - Regulatory and legislative requirements
  - Roles and responsibilities of employees and departments
  - How their actions can impact on water quality and public health.

Water Operators

Water Operators are responsible for:

- Operation and maintenance of the water treatment facilities
- Operation and maintenance of water testing functions to meet operational and reporting needs
- Primary response to incidents
- Bringing water quality issues to management's attention when they become aware of those issues
- Awareness of their actions in protecting drinking water quality

1. Assessment of the Drinking Water Supply System

1.1 Process Flow Diagram

A process flow diagram (PFD) of the Coleambally water supply system is shown in Figure 1-1.

The diagram is reviewed annually when the DWMS annual report is compiled.

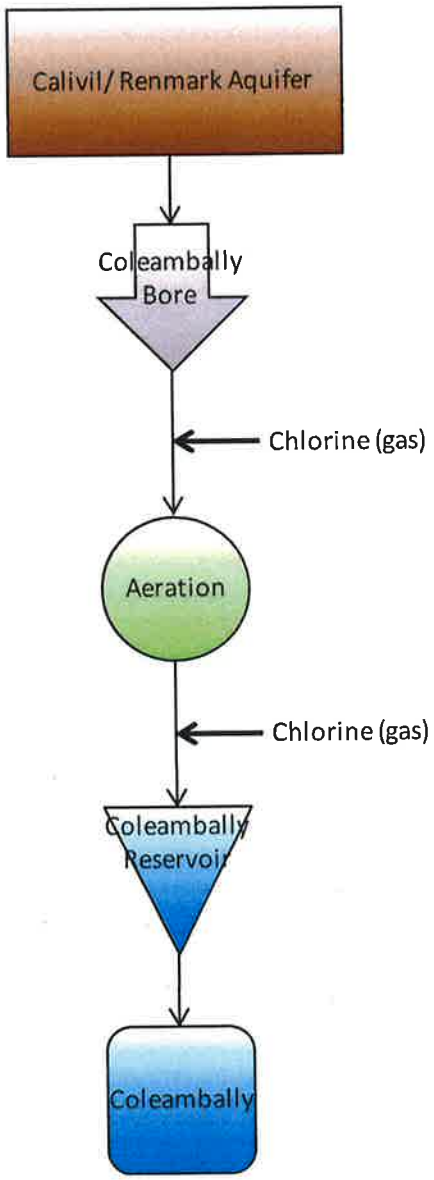

Figure 1–1: Coleambally Process Flow Diagram

1.2 System Summary

The system description is summarised in Table 1-1.

Table 1-1: Coleambally Supply System Summary

SYSTEM COMPONENT	DESCRIPTION
Population Supplied	• Coleambally: 700
Source Water Description	Sources: • Coleambally Bore Location: • Calivil/ Renmark aquifers in Lower Murrumbidgee Groundwater Management Area Water quality: • Electrical conductivity typically <1000 µS/cm
Water Treatment	Raw water from the Coleambally bore is treated as follows: • Chlorination (chlorine gas) for oxidation of dissolved metals and hydrogen sulphide • Aeration for further oxidation of dissolved metals and hydrogen sulphide • Chlorination (chlorine gas) for disinfection
Storage After Treatment	Treated water is pumped to the Coleambally reservoir, from where it flows by gravity to the reticulation.
Distribution of Product	Flow by gravity from reservoirs to the reticulation via pressurised trunk and reticulation mains.
Reservoirs	Coleambally Reservoir: 1 ML
Groundwater Allocation	2,119 ML/annum

1.3 Assessment of Water Quality Data

Long term historical water quality data relevant for each scheme are analysed prior to the risk assessment workshop, the results of which are captured in the respective Risk Workshop Report. A summary of the issues identified for Coleambally is provided below:

Treated water turbidity exceeded the ADWG target for chlorine disinfection of <1 NTU in 33% of samples. Total coliforms were also detected on a number of occasions. Free and total chlorine results were consistently above the ADWG aesthetic limit of 0.6 mg/L, but it was noted that adequate disinfection is considered higher priority than aesthetic acceptability. Occasional exceedances were also recorded for *E. coli* and iron.

1.4 Hazard Identification and Risk Assessment

The risk assessment details are present in the Risk Workshop Report.

2. Preventive Measures for Drinking Water Quality Management

2.1 Preventive Measures and Multiple Barriers

The preventive measures were identified and assessed during the Risk Workshop and have been documented, alongside the significant risks that they address, in the Risk Register.

2.2 Critical Control Points

Key risks were reviewed during the Risk Workshop and critical control points (CCPs) identified. For a point to satisfy the requirements of a CCP it must:

- Control hazards that represent a significant risk and require elimination or reduction to assure supply of safe drinking water
- Have a parameter (surrogate) that can be measured in a timely manner for the hazardous event
- Be able to have a correction applied in a timely manner in response to a deviation in the process

The CCPs were reviewed in September 2016.

Coleambally Scheme

	Parameter	Operational Target	Adjustment Limit	Critical Limit
Primary Disinfection Chlorine	Free chlorine	0.7-1.0 mg/L	<0.6, >1.0 mg/L	<0.5, >5.0 mg/L

Operational Target	This is where you should be operating. Aim to keep the system operating at this value.
Adjustment Limit	If you reach this limit, refer to CCP procedure and try to get back to the operational target. Increase monitoring until returned to normal.
Critical Limit	If you reach this limit, you have lost control of your system. Refer to CCP procedure and try to return to operational target as a matter of urgency.

The CCP procedure is provided below, which the operators use.

Coleambally CCP 1 – Primary Disinfection – Reservoir

What is the control point?	**Final Water**
What are the hazards?	**Chlorine sensitive pathogens; excess chlorine**
What is being measured / when?	**Free chlorine at Coleambally reservoir outlet / daily**
How are the hazards controlled?	**Adjust the chlorine dose**

Operational Target **Free chlorine 0.7-1.0 mg/L**	Adjustment Limit Free chlorine <0.6, >1.0 mg/L	**Critical Limit** **Free chlorine <0.5, >5.0 mg/L, for 2 immediate consecutive samples**

• Routine water sampling and testing
• Daily checks and visual inspection
• Equipment checks
• Dosing rate checks
• Instrument calibration
	• Verify result by resampling and retesting
	• If >1.0 mg/L, adjust chlorine dose
	• Sample and test free chlorine hourly
	• If <0.6 mg/L, do following:
	  ○ Contact Supervisor
	  ○ Adjust dose if necessary
	  ○ Inspect dosing system
	  ○ Sample and test free chlorine hourly, and other parameters as needed
	• **Fill in the water quality incident report and inform Supervisor.**
		• Contact Supervisor
		• Adjust chlorine dose
		• Full analytical investigation
		• Sample and test reticulation free chlorine
		• If <0.5 mg/L, consider manual hypo dosing to reservoir
		• If >5.0 mg/L, consider holding water in reservoir until excess chlorine has dissipated (if possible)
		• Consider bore shutdown
		• Contact local DPI Water Officer, for advice if required
		• Consider boil water notice if issue is not resolving
		• **Fill in the water quality incident report and inform the Supervisor immediately**. The Supervisor to inform NSW Health PHU as soon as possible (and within 24 hours).

3. Operational Procedures and Process Control

3.1 Operational Procedures

The CCP procedure is included above in section 2 of this document. Other supporting operational procedures are available for use by operators through the Director of Technical Services or the respective area Operation Manager.

3.2 Operational Monitoring

Operational monitoring is conducted as detailed in Table 3-1. These results are recorded in an electronic log sheet.

Table 3-1: Coleambally Operational Monitoring

PROCESS LOCATION	PARAMETER	FREQUENCY
Bore	Duty bore number	Daily
	Run/stop status	Daily
Aerator	Pre-dose chlorinator setting	Daily
	Aeration tank chlorine residual	Daily
Distribution Reservoir	Post-dose chlorinator setting	Daily
	Post reservoir - chlorine – free	Daily (refer to CCP1)
	Reservoir integrity	Every 6 months (reservoir inspection SOP)
Reticulation	Town Hall chlorine residual	Weekly
	Police Station chlorine residual	Weekly
	33 Sandpiper Street chlorine residual	Weekly
	25 Bluebonnet Crescent chlorine residual	Weekly
	43 Bencubbin Avenue chlorine residual	Weekly

3.3 Corrective Action

The corrective actions associated with the CCP is outlined in the CCP procedure in section 2.

Other corrective actions are undertaken as described in the Drinking Water Quality Incident and Emergency Response Plan, which is a separate and complementary document to this DWMS Plan.

3.4 Equipment capability and maintenance

The Lovibond MD100 4-in-1 photometer used to measure chlorine in the Coleambally reticulation is calibrated annually by a specialist contractor.

Reliability of monitoring equipment is informally verified against monitoring equipment used by the local DPI Water Officer.

Bores and pumps are serviced annually by specialist contractors. Chlorinators are serviced annually by Orica.

3.5 Materials and chemicals

Chemicals and materials used include:

- Chlorine gas supplied by Orica
- Sodium hypochlorite supplied by Axi-Kem Griffith (as needed)
- Laboratory reagents supplied by Lovibond

4. Verification of Drinking Water Quality

4.1 Drinking Water Quality Monitoring

MC participates in the NSW Health Drinking Water Monitoring Program. As part of this, MC collects samples for microbiological analysis weekly at various sites in each drinking water reticulation system. MC also collects samples for chemical analysis twice-yearly from various points in each reticulation system.

The Coleambally sample points are listed in Table 4-1.

Table 4-1: NSW Health Program Monitoring Sites

SCHEME	SAMPLE SITE LOCATION	NSW HEALTH SITE CODE
Coleambally Supply System	Community Hall, Coleambally	31
	Falcon Rd, Coleambally	32
	Fire Station Rd, Coleambally	33
	Bencubbin East, Coleambally	34
	Calrose Ave, Coleambally	35
	Brolga Pl, Coleambally	41
	Curlew Cres, Coleambally	42
	Kookaburra Ave, Coleambally	43
	Kingfisher Ave, Coleambally	51
	Currawong Cres, Coleambally	52
	Bluebonnet Cres, Coleambally	54
	12 Bellbird St, Coleambally	55
	Robin Cres, Coleambally	56

Parameters monitored as part of the 'microbiology' analysis suite include:

- *E. coli*
- Free Chlorine
- pH
- Total Chlorine
- Total Coliforms
- Turbidity

Parameters monitored as part of the 'chemistry' analysis suite include:

- Aluminium
- Antimony
- Arsenic
- Barium
- Boron
- Cadmium
- Calcium
- Chloride
- Chromium
- Copper
- Cyanide
- Fluoride Ratio
- Iodide
- Iodine
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Nitrate
- pH
- Selenium
- Silver
- Sodium
- Sulphate
- Total Dissolved Solids (TDS)
- Total Hardness as $CaCO_3$
- True Colour
- Turbidity

- Fluoride
- Nitrite
- Zinc

All samples are sent to Sydney to NSW Health's NATA accredited laboratory and both NSW Health and MSC are provided with results from the analyses. Under the NSW Health Drinking Water Monitoring Program, local water utilities are notified of results that exceed a guideline value.

4.2 Short-Term Evaluation of Results

The operational monitoring results are recorded in electronic log sheets. Operators review results daily as part of their operations and undertake corrective actions where required.

Review of the results for the NSW Health Drinking Water Monitoring program is undertaken by the testing laboratory and any exceedence notified to relevant MC staff and the local PHU.

4.3 Corrective Action

Water quality incidents are managed according to the Drinking Water Quality Incident and Emergency Response Plan.

Responses to water quality non-conformance can include:

- Manual dosing of sodium hypochlorite into reservoirs
- Reactive flushing following customer complaint

5. Management of Incidents and Emergencies

5.1 Communication

The communication and reporting lines are described in the DWQ IERP.

5.2 Incident and Emergency Response Protocols

Incident and emergency response protocols are regarded as a priority. MC uses their Drinking Water Quality Incident and Emergency Response Plan (DWQ IERP) for water quality incident management. These are based on the NSW Health Response Protocols.

Water quality incidents and emergencies are reported to the local NSW Health PHU and DPI Water, as required. The need to issue (and withdraw) a boil water alert is assessed in consultation with the local PHU (explained in the DWQ IERP).

Management of significant incidents and emergencies is covered by council's Disaster Plan.

6. Operator Awareness and Training

MC communicates water quality issues with employees via three monthly operational meetings. Operators are also encouraged to discuss water quality via:

- Informal liaison with local NSW Health Environmental Health Officer
- Informal liaison with local DPI Water Officer

Operators are encouraged to discuss any additional or further training needs with their supervisors.

7. Research and Development

Worst, Typical and Best Case effective C.*t* values of disinfection were calculated as part of the development of this DWMS, following the methodology detailed below. All effective C.t values with disinfection parameters for the WTP are listed in Table 7-1.

It shows that there is adequate disinfection C.*t* being achieved.

Table 7-1 Summary of Coleambally Effective C.*t* and Disinfection Parameters

PARAMETER	UNITS	VALUE			DATA SOURCE
		WORST CASE	TYPICAL CASE	BEST CASE	
Effective C.t (pH-corrected)	mg.min/L	28	57	98	Calculated
Effective C.t (no pH-correction)	mg.min/L	94	124	154	Calculated
pH	-	8	7.7	7.47	Coleambally log sheets, Jan-Mar 2013
Free Cl2 residual	mg/L	0.95	1.25	1.56	Coleambally log sheets, Jan-Mar 2013
WTP Production	ML/day	4	4	4	Estimated (WTP capacity)
WTP run time	h/day	22	22	22	Estimated (typical design)
Baffling factor (T10/T)	-	0.3	0.3	0.3	Estimated (typical design)
Contact tank capacity	m^3	1000	1000	1000	Advised by MSC
Effective Contact Time	mins	99	99	99	Calculated

8. Documentation and Reporting

8.1 Management of Documentations and Records

This DWMS Plan, including the DWQ IERP and CCP procedures, document key information relevant to drinking water quality management for the Coleambally scheme.

The Director of Technical Services maintains access to the current versions of all documents, and provides it to operators/others as required.

Operators ensure that the correct forms are filled and records are made.

8.2 Reporting

The DWQ IERP includes reporting and communication lines between plant operators and their supervisor. The supervisor also communicates upwardly as required.

MC also prepares the DWMS Annual Report annually summarising the implementation of the DWMS and water quality performance. This report is submitted to the local PHU.

9. Evaluation and Audit

Informal inspections of the system are carried out by operators.

External inspections of the system are also carried out by the local DPI Water Officer during visits. The Officer's findings are used to help direct works.

MC uses the preparation of the DWMS Annual Report as a means to simulate the internal audit. Refer to section 12.1 of the Overall DWMS for details.

The external audit frequency is not yet established by NSW Health, MC will adhere to it when informed. For external audits, MC will engage an independent auditor approved in consultation with the PHU.

Operators maintain appropriate practices and records as described in this DWMS Plan to assist with audit purposes when required.

10. Review and Continual Improvement

The effectiveness of the DWMS will be reviewed by the Director of Technical Services, and need for any change or improvements will be identified, and rectified. For mid to long term improvement actions, these will be included in the Improvement Plan for implementation and monitoring.

References

NHMRC, NRMMC (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.

NSW Health Drinking Water Database. Viewed on 10 August 2012. <http://www.drinkingwaterdb.nsw.gov.au/>.

NSW Health, NSW DPI Water (2013). NSW Guidelines for Drinking Water Management Systems 2013. NSW Health, NSW Department of Primary Industries – Office of Water, New South Wales, North Sydney.

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Appendix C Darlington Point DWMS Plan

Murrumbidgee Council

Darlington Point DWMS Plan

September 2016

Review Date:	September 2017 (or on system change)
Document Owner:	Director of Technical Services

DOCUMENT INFORMATION

Version	Author	Reviewed by	Date	Details
1.0	Tasleem Hasan	Tasleem Hasan	29/9/16	Resulting from merger of DWMS' for the former Jerilderie and Murrumbidgee shires

Viridis Consultants Pty Ltd undertook the merger of the DWMS documents, based on review and discussions with relevant council staff and from information present in the original DWMS' for the former councils.

The original DWMS for the former Jerilderie Shire Council was developed by City Water Technology Pty Ltd and Risk Edge Pty Ltd in March 2014. The original DWMS for the former Murrumbidgee Shire Council was developed by Water Futures Pty Ltd in June 2013.

Executive Summary

DWMS Purpose

The NSW *Public Health Act 2010* was passed by Parliament at the end of 2010. The *Public Health Act 2010* (and its supporting regulation) includes the requirement for water suppliers to produce a Quality Assurance Program, which is based on the *Framework for Management of Drinking Water Quality* in the *Australian Drinking Water Guidelines* (NHMRC/NRMMC, 2011). For the purposes of implementation, this quality assurance program is termed a Risk-Based Drinking Water Management System (DWMS).

Murrumbidgee Council's overall DWMS is based on the 12 Elements, 32 Components and 76 Actions of the Framework for Management of Drinking Water Quality.

DWMS Overall

The overall DWMS for Murrumbidgee Council contains or references the overarching elements common to the different drinking water schemes.

Darlington Point DWMS Plan

This document is the Darlington Point DWMS Plan. It contains system specific information to manage the risks to this particular scheme.

Critical Control Points

Critical control points (CCPs) are discussed in this document.

Incidents and Emergencies

Drinking water quality incidents and emergencies are managed through the Drinking Water Quality Incident and Emergency Response Plan, which is a separate complementary document.

Improvement Plan

An improvement plan forms part of the overall DWMS, and is available as a separate excel spreadsheet.

Contents

Introduction and Background

The *Public Health Act 2010* (NSW) ('the Act') requires drinking water suppliers to establish, and adhere to, a 'quality assurance program' (QAP) that complies with the *Public Health Regulation 2012* (NSW) ('the Regulation'). The Regulation requires water suppliers to implement a QAP consistent with the *Framework for Management of Drinking Water Quality* ('the Framework') in the *Australian Drinking Water Guidelines (ADWG) 2011* (NHMRC/NRMMC 2011). The QAP will be referred to as a Drinking Water Management System ('DWMS') and water utilities in NSW are required to have a DWMS in place by 1 September 2014.

As stated in the ADWG:

> *"The most effective means of assuring drinking water quality and the protection of public health is through adoption of a preventive management approach that encompasses all steps in water production from catchment to consumer."*

The NSW Government has encompassed this philosophy within the recent legislation.

Scope

This DWMS Plan applies to the operation and maintenance of the Darlington Point drinking water scheme.

Document Control

This DWMS document is owned by the Director of Technical Services. The Director of Technical Services is responsible for ensuring that the DWMS is reviewed annually and on system change.

DWMS Responsibilities and Authorities

MC employees are encouraged to participate in decisions that affect their jobs and areas of responsibility. This participation fosters a sense of ownership for decisions and their consequences. Specific drinking water management responsibilities and authorities are described in position descriptions. The main responsibilities and authorities related to this DWMS Plan are listed below.

All Managers and Employees

All managers and employees involved in the supply of drinking water are responsible for:

- Understanding, implementing, maintaining and continuously improving the DWMS
- Being aware of:
  - The Drinking Water Quality Policy
  - Characteristics of the water supply system and preventive strategies in place throughout the system
  - Regulatory and legislative requirements
  - Roles and responsibilities of employees and departments
  - How their actions can impact on water quality and public health.

Water Operators

Water Operators are responsible for:

- Operation and maintenance of the water treatment facilities
- Operation and maintenance of water testing functions to meet operational and reporting needs
- Primary response to incidents
- Bringing water quality issues to management's attention when they become aware of those issues
- Awareness of their actions in protecting drinking water quality

1. Assessment of the Drinking Water Supply System

1.1 Process Flow Diagram

A process flow diagram (PFD) of the Darlington Point water supply system is shown in Figure 1-1.

The diagram is reviewed annually when the DWMS annual report is compiled.

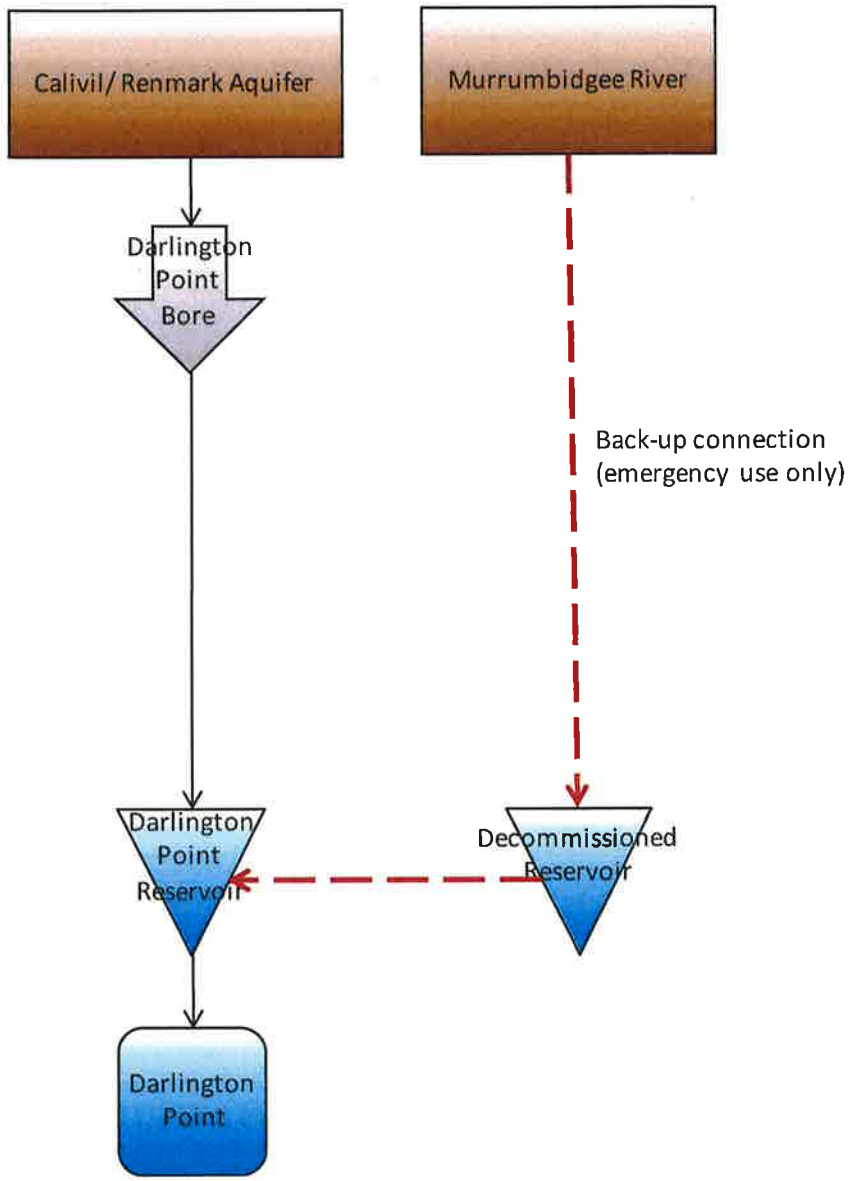

Figure 1–1: Darlington Point Process Flow Diagram

1.2 System Summary

The system description is summarised in Table 1-1.

Table 1-1: Darlington Point Supply System Summary

SYSTEM COMPONENT	DESCRIPTION
Population Supplied	• Darlington Point: 997
Source Water Description	Sources: • Darlington Point Bore Location: • Calivil/ Renmark aquifers in Lower Murrumbidgee Groundwater Management Area Water quality: • Electrical conductivity typically <1000 µS/cm
Water Treatment	Raw water from the Darlington Point bore is not treated before distribution.
Storage After Treatment	Untreated water is pumped to the Darlington Point reservoir, from where it flows by gravity to the reticulation.
Distribution of Product	Flow by gravity from reservoirs to the reticulation via pressurised trunk and reticulation mains.
Reservoirs	Darlington Point Reservoir: 1 ML
Groundwater Allocation	2,119 ML/annum

1.3 Assessment of Water Quality Data

Long term historical water quality data relevant for each scheme are analysed prior to the risk assessment workshop, the results of which are captured in the respective Risk Workshop Report. A summary of the issues identified for Darlington Point is provided below:

Treated water turbidity exceeded the ADWG target for chlorine disinfection of <1 NTU in 46% of samples; although Darlington Point supply is not currently disinfected, the turbidity should be noted for future dosing installations. Total coliforms were also detected on a number of occasions. Occasional exceedances were recorded for *E. coli*, and rare exceedances for true colour iron.

1.4 Hazard Identification and Risk Assessment

The risk assessment details are present in the Risk Workshop Report.

2. Preventive Measures for Drinking Water Quality Management

2.1 Preventive Measures and Multiple Barriers

The preventive measures were identified and assessed during the Risk Workshop and have been documented, alongside the significant risks that they address, in the Risk Register.

2.2 Critical Control Points

Key risks were reviewed during the Risk Workshop and critical control points (CCPs) identified. For a point to satisfy the requirements of a CCP it must:

- Control hazards that represent a significant risk and require elimination or reduction to assure supply of safe drinking water
- Have a parameter (surrogate) that can be measured in a timely manner for the hazardous event
- Be able to have a correction applied in a timely manner in response to a deviation in the process

The CCPs were reviewed in September 2016.

For Darlington Point there were no CCPs established as the supply is currently untreated. However, there are other important operational parameters which need to be monitored, for example, reservoir inspections and integrity.

3. Operational Procedures and Process Control

3.1 Operational Procedures

Supporting operational procedures are available for use by operators through the Director of Technical Services or the respective area Operation Manager.

3.2 Operational Monitoring

Operational monitoring is conducted as detailed in Table 3-1. These results are recorded in an electronic log sheet.

Table 3-1: Darlington Point Daily Monitoring

PROCESS LOCATION	PARAMETER	REFQUENCY
Bore	Duty bore number	Daily
	Run/stop status	Daily
Reservoir	Reservoir integrity	Every 6 months (reservoir inspection SOP)

3.3 Corrective Action

Corrective actions are undertaken as described in the Drinking Water Quality Incident and Emergency Response Plan, which is a separate and complementary document to this DWMS Plan.

3.4 Equipment capability and maintenance

Bores and pumps are serviced annually by specialist contractors.

3.5 Materials and chemicals

No chemicals are currently being used.

4. Verification of Drinking Water Quality

4.1 Drinking Water Quality Monitoring

MC participates in the NSW Health Drinking Water Monitoring Program. As part of this, MC collects samples for microbiological analysis weekly at various sites in each drinking water reticulation system. MC also collects samples for chemical analysis twice-yearly from various points in each reticulation system.

The Darlington Point sample points are listed in Table 4-1.

Table 4-1: NSW Health Program Monitoring Sites

SCHEME	SAMPLE SITE LOCATION	NSW HEALTH SITE CODE
Darlington Point Supply System	Cemetery Lane, Darlington Point	10
	14 Boyd St, Darlington Point	11
	20 McAllister St, Darlington Point	12
	11 DeMamiel St, Darlington Point	13
	5 Chant St, Darlington Point	14
	11 Barwidgee Blvd, Darlington Point	15
	18 Young St, Darlington Point	16
	20 Brooks Cres, Darlington Point	18
	Stock St, Darlington Point	21
	Bridge St, Darlington Point	22
	21 Carrington St, Darlington Point	23
	42 Darlington St, Darlington Point	24
	2 Ryan St, Darlington Point	25
	Narrand St, Darlington Point	27
	28 Uri St, Darlington Point	28

Parameters monitored as part of the 'microbiology' analysis suite include:

- *E. coli*
- Free Chlorine
- pH
- Total Chlorine
- Total Coliforms
- Turbidity

Parameters monitored as part of the 'chemistry' analysis suite include:

- Aluminium
- Antimony
- Arsenic
- Barium
- Boron
- Cadmium
- Calcium
- Chloride
- Chromium
- Fluoride Ratio
- Iodide
- Iodine
- Iron
- Lead
- Magnesium
- Manganese
- Mercury
- Molybdenum
- pH
- Selenium
- Silver
- Sodium
- Sulphate
- Total Dissolved Solids (TDS)
- Total Hardness as $CaCO_3$

- Copper
- Cyanide
- Fluoride
- Nickel
- Nitrate
- Nitrite
- True Colour
- Turbidity
- Zinc

All samples are sent to Sydney to NSW Health's NATA accredited laboratory and both NSW Health and MSC are provided with results from the analyses. Under the NSW Health Drinking Water Monitoring Program, local water utilities are notified of results that exceed a guideline value.

4.2 Short-Term Evaluation of Results

There is no operational water quality testing being done at the moment.

Review of the results for the NSW Health Drinking Water Monitoring program is undertaken by the testing laboratory and any exceedence notified to relevant MC staff and the local PHU.

4.3 Corrective Action

Water quality incidents are managed according to the Drinking Water Quality Incident and Emergency Response Plan.

Responses to water quality non-conformance can include:

- Manual dosing of sodium hypochlorite into reservoirs
- Reactive flushing following customer complaint

5. Management of Incidents and Emergencies

5.1 Communication

The communication and reporting lines are described in the DWQ IERP.

5.2 Incident and Emergency Response Protocols

Incident and emergency response protocols are regarded as a priority. MC uses their Drinking Water Quality Incident and Emergency Response Plan (DWQ IERP) for water quality incident management. These are based on the NSW Health Response Protocols.

Water quality incidents and emergencies are reported to the local NSW Health PHU and DPI Water, as required. The need to issue (and withdraw) a boil water alert is assessed in consultation with the local PHU (explained in the DWQ IERP).

Management of significant incidents and emergencies is covered by council's Disaster Plan.

6. Operator Awareness and Training

MC communicates water quality issues with employees via three monthly operational meetings. Operators are also encouraged to discuss water quality via:

- Informal liaison with local NSW Health Environmental Health Officer
- Informal liaison with local DPI Water Officer

Operators are encouraged to discuss any additional or further training needs with their supervisors.

7. Research and Development

As there is no treatment being undertaken at the moment, C.*t* calculation is not applicable as yet.

8. Documentation and Reporting

8.1 Management of Documentations and Records

This DWMS Plan, including the DWQ IERP and operating procedures, document key information relevant to drinking water quality management for the Darlington Point scheme.

The Director of Technical Services maintains access to the current versions of all documents, and provides it to operators/others as required.

Operators ensure that the correct forms are filled and records are made.

8.2 Reporting

The DWQ IERP includes reporting and communication lines between plant operators and their supervisor. The supervisor also communicates upwardly as required.

MC also prepares the DWMS Annual Report annually summarising the implementation of the DWMS and water quality performance. This report is submitted to the local PHU.

9. Evaluation and Audit

Informal inspections of the system are carried out by operators. External inspections of the system are also carried out by the local DPI Water Officer during visits. The Officer's findings are used to help direct works.

MC uses the preparation of the DWMS Annual Report as a means to simulate the internal audit. Refer to section 12.1 of the Overall DWMS for details.

The external audit frequency is not yet established by NSW Health, MC will adhere to it when informed. For external audits, MC will engage an independent auditor approved in consultation with the PHU.

Operators maintain appropriate practices and records as described in this DWMS Plan to assist with audit purposes when required.

10. Review and Continual Improvement

The effectiveness of the DWMS will be reviewed by the Director of Technical Services, and need for any change or improvements will be identified, and rectified. For mid to long term improvement actions, these will be included in the Improvement Plan for implementation and monitoring.

The main and priority improvement for the Darlington Point scheme for now is to introduce treatment/disinfection for the water supply scheme.

References

NHMRC, NRMMC (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.

NSW Health Drinking Water Database. Viewed on 10 August 2012. <http://www.drinkingwaterdb.nsw.gov.au/>.

NSW Health, NSW DPI Water (2013). NSW Guidelines for Drinking Water Management Systems 2013. NSW Health, NSW Department of Primary Industries – Office of Water, New South Wales, North Sydney.

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Murrumbidgee Council Works Program for 2017/18 Infrastructure Capital & Maitenance

Department: *Infrastructure And Environment* **Last update on:** *17/10/2017* **Version No.:** *1* **Updated by:** *P. Chudek*

Work Type	Program	Description of work	Jul-17				Aug-17				Sep-17				Oct-17				Nov-18				Dec-17				Jan-18				Feb-18				Mar-18				Apr-18				May-18				Jun-18				Target Start Date	Target Finish Date	RESOURCES	Project Supervision	Budget
			WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4	WK1	WK2	WK3	WK4					
HWY RMCC	RMCC	Routine Works - Newell/Kidman Hwy																																																01.07.17	30.06.18	Internal	SG	$522,000.00
	RMCC	Rutine Maitenance Coleambally																																																01.07.17	30.06.18	Internal	SG	$400,000.00
	RMCC	Rutine Maitenance Jerilderie																																																01.07.17	30.06.18	Internal	SG	$539,000.00
Regional Roads	Repair/Block	Maintenance																																																01.07.17	30.06.18	Internal	SG/DG	$375,000.00
	Repair/Block	Bitumen Resealing																																																01.12.17	31.03.18	Contractor	SG/DG	$323,000.00
	Repair/Block	Repair Programme																																																01.10.17	30.04.18	Internal	SG/DG	$308,000.00
Local Roads	Fixing C. Roads	Main Canal Road Resealing																																																01.07.11	31.08.17	Internal	GR	$180,000.00
	Contributions	Carrathool Bridge Approache																																																01.03.17	30.06.18	Internal	SG	$1,000,000.00
	R2R	Reconstruction Programme																																																01.08.17	30.06.18	Internal	SG/DG	$516,000.00
	R2R	Gravel Resheeting																																																01.11.17	31.03.18	Contractor	SG/DG	$420,000.00
	R2R	Resealing																																																01.09.18	30.06.18	Internal	SG/DG	$300,000.00
	Sealed Rural	Maintenance																																																01.07.17	30.06.18	Internal	SG/DG	$429,000.00
	Sealed Rural	Bitumen Resealing																																																01.11.17	31.03.18	Contractor	SG/DG	$300,000.00
	Sealed Rural	Reconstruction Programme																																																01.11.17	30.06.18	Internal	SG/DG	$412,000.00
	Unsealed Rural	Maintenance																																																01.07.17	30.06.18	Internal	SG/DG	$473,000.00
	Unsealed Rural	Gravel Resheeting																																																01.07.17	30.06.18	Internal	SG/DG	$308,000.00
	Maitenance	Trees Maitenance																																																01.07.17	30.06.18	Internal	SG/DG	$45,000.00
Urban Streets	Footpaths	Maintenance																																																01.07.17	30.06.18	Internal	SG/DG	$15,000.00
	Construction	Footpath Replacement																																																01.07.17	30.06.18	Internal	SG/DG	$20,000.00
	Maitenance	Maintenance																																																01.07.17	30.06.18	Internal	SG/DG	$155,000.00
	Construction	Boyd Street Intersection																																																01.01.18	30.08.18	Internal	SG/DG	$250,000.00
Water	Jerilderie	Operation & Maitenance																																																01.07.17	30.06.18	Internal	DG	$286,000.00
		Water Mains Replacment																																																01.07.17	30.06.18	Internal	DG	$20,000.00
		Raw Water Meters																																																01.12.17	30.06.18	Internal	DG	$50,000.00
	Darlington Point	Operation & Maitenance																																																01.07.17	30.06.18	Internal	DG	$102,000.00
		Water Meters Replacement/Installation																																																01.07.17	30.06.18	Internal	DG	$1,000.00
		Main Upgrade / Valves Replacment																																																01.12.17	30.06.18	Internal	SG	$50,000.00
		Mains Dead End Link Ups																																																01.01.18	30.06.18	Internal	SG	$30,000.00
		New Water Tower & Treatement System																																																01.02.18	30.06.18	Contractor	SG	$800,000.00
		Bore No.1 Replacemnt																																																01.02.18	30.06.18	Contractor	SG	$100,000.00
		Building Upgrades																																																01.05.18	30.06.18	Contractor	SG	$50,000.00
	Coleambally	Operation & Maitenance																																															01.07.17	30.06.18	Internal	SG	$112,000.00
		Water Meters Replacement/Installation																																															01.07.17	30.06.18	Internal	SG	$1,000.00
		Main Upgrade / Valves Replacment																																															01.07.17	30.06.18	Internal	SG	$50,000.00
		Upgrade Aeration Tank																																															01.02.18	30.06.18	Contractor	SG	$20,000.00
Sewerage	Jerilderie	Operation & Maitenance																																															01.07.17	30.06.18	Internal	DG	$146,000.00
		Sewer Well Pump Replacment																																															01.02.18	30.04.18	Contractor	DG	$13,000.00
		Sewer Replacment																																															01.07.17	30.06.18	Internal	DG	$30,000.00
	Darlington Point	Operation & Maitenance																																															01.07.17	30.06.18	Internal	SG	$95,000.00
		Treatment Ponds Fencing																																															01.02.18	31.05.18	Contractor	SG	$60,000.00
		Outflow Pump Telementry																																															01.03.18	31.05.18	Contractor	SG	$50,000.00
		Sewer Pump Replacment																																														01.02.18	31.05.18	Contractor	SG	$15,000.00
	Coleambally	Dump Point																																														01.11.17	31.12.17	Internal	SG	$5,000.00
		Operation & Maitenance																																														01.07.17	30.06.18	Internal	SG	$41,000.00
		Sewer Treatement Ponds Landscaping																																													01.02.18	30.06.18	Contractor	SG	$20,000.00
		Sewer Pump Replacment																																													01.11.17	30.06.18	Contractor	SG	$5,000.00
Other	Maitenance	Saleyards																																													01.07.17	30.06.18	Internal	DG	$22,000.00
	Maitenance	Truck Wash																																													01.02.18	30.06.18	Internal	DG	$7,000.00
	Construction	Culvert Replacment North																																													01.07.17	30.06.18	Internal	SG	$80,000.00
	Construction	Kerb& Gutter Replacment																																												01.07.17	30.06.18	Internal	SG	$35,000.00
	Construction	Darlington Point Levee																																												01.07.17	30.06.18	Internal	SG	$1,515,000.00
	Construction	Bus Shelter at Caltex S. Station Jerilderie																																												01.03.18	30.06.18	Internal	DG	$15,000.00
	Construction	Roof over Washdown Jerilderie Depot																																												01.03.18	30.06.18	Internal	DG	$40,000.00
	Construction	Darligton Point Depot Redevelopment																																												01.03.18	30.06.18	Internal	SG	$5,000.00
	Construction	Darlington Point Office Extention																																												01.03.18	30.09.2018	Contractor	SG	$400,000.00
	Private Works	**Construction - Income**																																												01.07.17	30.06.18	Internal	DG	$800,000.00
																																																			Total Budget		**$12,361,000.00**

NOTES **works are in the early stages of planning and the work treatment/method has not yet been determined.**

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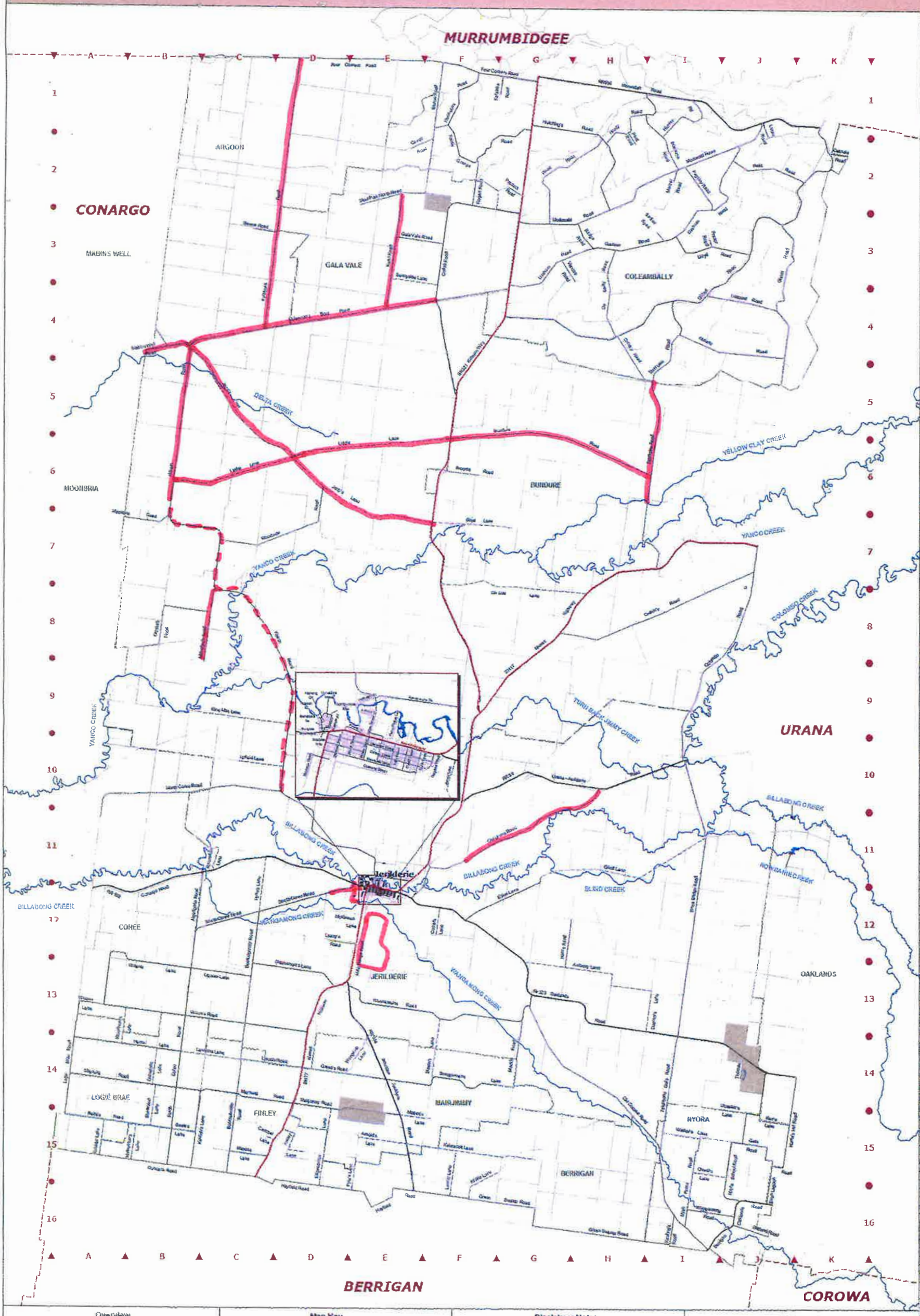
SHIRE OF JERILDERIE: ROADS MAP

Attachment # 8 - Item # 20



INDEX OF ROADS

Display_Name	Length (km)	Grid_Ref
Aladdin Road	5.8	C12
Anthony Lane	3.4	H13
Argoon Avenue	0.1	E11
Arnett's Lane	3.2	E15
Astino Street	0.3	E11
Balleas Road	2.5	J16
Beale'S Lane	1.6	B15
Berrigan-Jerilderie Road	14.9	E14
Berrigan-Oaklands Road	6.5	J16
Betts Street	0.4	E12
Buchanan Road	2.2	I2
Bulbe Street	1.1	E12
Boundoolanilly Road	4.4	C12
Boyd Lane	5.4	F7
Bridge Road	2	H3
Brolgas Road	2.5	F8
Broughshane Lane	0	F14
Brown Street	0.7	E12
Bundoora Avenue	0.3	E11
Bundure Road	14	G5
Cadell Road	17.4	F3
Cadogans Lane	2.4	B14
Cape Road	6.8	F11
Carroll Road	1.6	F2
Carmel Lane	9.5	C15
Colen's Lane	1.9	F12
Columbo Road	15.9	J8
Conargo Road	18.3	C11
Corobong Street	0.4	E12
Coreea Street	0.7	E12
Crockett Road	7.4	B8
Crosby Road	3.9	H4
Crutch's Road	14	I8
Daniel's Lane	2.8	I13
De Salis Road	6	H4
Duncans Road	10.6	B15
Edgecombe Lane	5.2	D15
Elcoe Road	8.7	F1
Elliott Lane	5.9	G12
Forte Grange Road	4.3	F2
Frenchmans Road	18.1	D2
Fiesta Road	5.2	J2
Four Corners Road	6	F7
Fraser Road	9.5	I5
Gain Road	3.4	J15
Gala Vale Road	3.2	E3
Gilbert Road	33.2	H
Glenn Road	6.7	J3
Goolgumbla Dip	0.4	E11
Graham Road	6.5	G3
Green Swamp Road	15.3	G16
Green's Road	4.7	D14
Hanks Road	3.3	G12
Homestead Road	4.5	F1
Hardy Road	2.6	H1
Harris Lane	7.2	B14
Harrick Rd Road	6.1	J15
Hayfield Road	8.8	D15
Hennessies Lane	2.4	B15
Hunter Road	4.6	I1
Hutching's Road	10.3	H2
Hyett's Lane	3.7	C11
Inders Bridge Road	18.9	E2
James Lane	3	D15
Jerry's Lane	21.2	D6
Kelliher's Road	2	I16
Kelleycott Lane	8.5	F15
Kennedy Street	0.5	E12
Kerrish's Lane	5.2	B15
Kerr's Lane	2.4	J15
Kerslake Road	1.2	G1
Kidman Way	44.7	F5
Kiewarra Crescent	0.1	E11
Kiolo Road	7.7	E3
Kwala Lane	3.1	F15
Lawton's Lane	4.1	C14
Leahy's Road	1.3	D12
Leaney Lane	3.1	F15
Leonard Road	10	J4
Liddle Lane	10.8	E6
Lipman Lane	4.1	C13
Lincoln Road	4.2	C14
Lloyd Road	5.7	I3
Logie Brae Road	7.1	A14
Lucas Road	1	J1
Lyfield Lane	2.9	C10
Mabins Well Road	1.6	B4
Macdie Road	4.6	G14
Mahonga Street	1.8	E12
Maigaley Road	7.2	D14
Malacca Lane	2.6	C15
Matthews Avenue	0.2	E12
Mayoung Road	15.2	B14
Mcdonald Road	4	G3
Mcdougal Street	0.4	E11
Mcgee's Lane	2.1	E15
Mcleish's Lane	2	J15
Mckinnon Lane	9.6	E12
Mcliarty Road	7.5	J4
Mckenzie's Bore Road	21.3	E4
Mcpherson's Lane	5.9	D13
Mercer Road	0.5	I2
Mitherpeo's Road	5	C8
Moonbria Road	3.2	B7
Morendah Road	19.9	I1
Meadows Mews	0.1	E11
Myall Plains Road	6.1	I15
Newell Highway	21.7	D13
Nine Mile Lane	6.2	B9
North Conargo Road	13.5	B10
Newcastle Street	1.6	E12
Nyora School Road	11.2	J15
Oneill Street	0.4	E12
O'neill's Lane	2.5	I15
Oaklands Road	31.9	G13
Oakvale Road	1.2	K2
Old Conowra Road	6.8	G13
Old Urana Road	13.4	G11
Peet Road	8.9	H2
Powell Street	0.3	E12
Preston Road	1.1	G2
Pugsley Road	3.5	I2
Pump Station Lane	0.5	E12
Pyle's Lane	2.3	E15
Railway Lane	2.4	A15
Rifle Range Road	5.1	E12
Riverdale Lane	2	C11
Rogart Road	3.1	F2
Rolfe Road	7.3	K15
Sadlier Road	0.8	I3
Sargood Street	0.3	E12
Sherwood Lane	2.8	B14
Showground Road	1	E11
Six Mile Lane	9.9	G8
Sloman Street	0.6	E12
Sloane Road	1.8	C3
Smith Street	0.4	E12
South Conroe Road	6.8	D12
Steidl's Lane	4	F14
Stud Park North Road	6.7	E2
Sunnyside Lane	3.2	E3
Swan Lagoon Road	8.7	J15
Telephone Gate Road	7.7	I14
Thomas Road	1	K14
Thurrowa Road	17	I5
Tip Road	0.7	E12
Urana-Jerilderie Road	18.1	B10
Vonnes Road	1.8	G3
Walsh's Lane	4.8	I15
Wahoona Way	0.2	E12
Wangamong Road	3.2	I16
Wilkins Lane	9.3	B12
Wilkins Lane	1.7	A13
Wilkins Road	13.8	C13
Wilson Road	15.5	D8
Wongyarra Lane	3	E14
Wood Road	8.5	B2
Wood Street	0.4	E12
Woodbank Lane	2	K13
Woodside Road	9	D2
Woolshearers Road	8	K13
Yallowa Court	0.1	E11

Overview

Map Key

Grid Dividers · Roads · Waterways · Shire Boundaries · State Forest · Property

N

0 5 10

kilometres

Disclaimer Notes

Jerilderie Shire (the Shire) does not warrant or represent that the above information is free from errors or omissions. A person using the information should conduct independent enquiries to verify the accuracy of the information.

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