South Australian Murray-Darling Basin

Natural Resources Management Plan

Volume B Board Business and Operational Plan
2019-20 to 2021-22
Version Control

<table>
<thead>
<tr>
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South Australian Murray Darling Basin Natural Resources Management Plan

I, David Speirs, Minister for Environment and Water, hereby adopt this Natural Resources Management Plan Volume B; Business and Operational pursuant to section 80(3) (a) of the Natural Resources Management Act 2004

Hon David Speirs

Minister for Environment and Water

/ /
Foreword

Sharon Starick - Presiding Member

The landscape of the Murray-Darling Basin is one of national and international renown, characterised by the mighty River Murray, Lower Lakes and Coorong, extensive native vegetation on public and private lands, Ramsar sites, rangelands and a huge diversity of native species.

The region is an incredibly important food bowl to the state, producing premium wine, food and fibre for both the domestic and export markets as well as making a significant contribution to the state's economy. Healthy soils, good quality water and healthy landscapes are vital in sustaining this production, now and for our children and their children.

The productive and natural environments are interlinked and dependent on each other. They support our diverse regional economy including primary production, tourism and industries and make our region a great place to live.

No entity or individual alone can deliver all that is needed to have a healthy, productive landscape. It is only by working together we can secure a healthy environment that supports a diverse and flexible economy and the well-being of our communities, ecosystems, soils and water resources.

The people in our region are our most valuable asset. They have proven to be resilient and innovative during times of hardship such as drought. By continuing to embrace change and new approaches to business we will be ready to take on future challenges and opportunities.

A new opportunity is the proposed reform for the management of natural resources in South Australia. The state government has announced that it will introduce a new Landscape SA Bill into South Australian Parliament in the first quarter of 2019, to replace the Natural Resources Management Act 2004.

The new legislation is intended to strengthen community-led delivery of natural resources management at local and whole of landscape scales. The focus is on empowering communities and land managers to be directly responsible for the sustainable management of their region’s natural resources, with an emphasis on soil quality, water management, and pest plant and animal control.

The South Australian Murray-Darling Basin Natural Resources Management Board welcomes the government’s reform agenda and aims to capitalise on the opportunities to strengthen the delivery of practical on ground works that address local priorities.

As a Board, we want our community to continue to be excited about the management of natural resources, actively making a difference at home, in business, locally and region-wide. There is great potential for our community to be more involved in making decisions for the region. Working with and influencing the Board, government and business will create a better economic, environmental, social and cultural future for the South Australian Murray-Darling Basin.
Acknowledgements

The Business and Operational Plan would not be possible without the valuable contribution of many committed individuals and organisations in the South Australian Murray-Darling Basin (SAMDB) region over many years. Special thanks go to the individuals, whose expertise, guidance, general assistance and advice has been pivotal throughout the review and amendment of the plan and includes:

- Community members who provided comments, ideas, and feedback on the Business and Operational Plan.
- South Australian Murray-Darling Basin Natural Resources Management Board (SAMDB NRM Board) and the Natural Resources Management Group members for strategic direction and oversight
- Natural Resources SAMDB staff for technical advice and administrative support
- Department for Environment and Water (DEW) staff for information, knowledge, technical advice, guidance and support.

Recognition of Aboriginal people

The Board acknowledges that for traditional owners, the land, waters and all living things are connected and are part of the cultural landscape formed during the creation. Aboriginal people’s interests in being involved in natural resources planning and implementation processes are also respected.

The Natural Resources Management Plan for the SAMDB region seeks to enable partnerships between traditional owners, the Board and other stakeholders based on mutual respect and trust. Traditional owners seek partnerships to protect and maintain their culture, cultural sites and the natural resources of land and water through the involvement of Aboriginal people. In order for this to happen, the traditional owners’ rights, interests and obligations to speak and care for their traditional lands, in accordance with their customary laws, customs, beliefs and traditions, needs to be recognised and respected.

There are differences between traditional owner groups and other Aboriginal people in the region and their preferred approaches for engagement. The Ngarrindjeri, represented by the Ngarrindjeri Regional Authority, have entered into the Kungun Ngarrindjeri Yunnan Agreement with the State Government of South Australia. The First Peoples of the River Murray and Mallee Region were recognised as native title holders and have entered into an Indigenous Land Use Agreement. Both of these agreements identify a consultation and negotiation framework, the preferred approach to engagement and collaboration between the parties that aims to strengthen the on-going relationship.

Under the terms of these agreements, the SAMDB NRM Board recognises and promotes traditional owners and Aboriginal people’s role in and knowledge of the conservation and ecologically sustainable use of the region’s biodiversity.
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1. Introduction

Management of the state’s natural resources is about to undergo significant reform. Through the intended introduction of the Landscape SA Bill to the South Australian Parliament in the first quarter of 2019, it is anticipated that a number of changes will be made to the way we plan for and implement the management of natural resources across the state. While the new Landscape SA legislation is being developed, the South Australia Murray-Darling Basin Natural Resources Management Board (the Board) will continue to operate in accordance with the *Natural Resources Management Act 2004* (the Act).

The Board is established under the Act by the Minister for Environment and Water through the appointment of community members from across the South Australian Murray-Darling Basin (SAMDB) region. The Board is the peak body responsible for ensuring the region’s natural resources are managed appropriately.

The Board is responsible, under the Act, for developing a Strategic Natural Resources Management Plan (NRM Plan) for the region. To support the NRM Plan, a more localised Regional Action Plan has also been developed. The NRM Plan and Regional Action Plan (RAP) were developed and are delivered in partnership with the community and stakeholders, to encourage sustainable use of natural resources in the region.


The Board is one of many contributors to the implementation of these plans. To determine which parts of the RAP the Board will deliver, the Board must take a view across the whole region and make choices about the areas and issues which will be their primary focus over the next 3 -5 years. These choices are represented as a set of strategic directions and regional focus areas.

The Board’s strategic directions and regional focus areas guide the development of this document. The Board’s Business and Operational Plan, which is a requirement of the Act, outlines how the Board will invest funds raised via the NRM levies and other sources for the next 3 years (2019-20 – 2021-22).

The purpose of the Business and Operational Plan is two-fold:

1. Sections 4, 5 and 6 represent the business element and outline the implementation program and supporting income proposal that is the Board’s contribution to implementing the NRM Plan and the RAP for the region.

2. Section 8 represents the operational element and outlines the Board’s approved policies for water affecting activities. The Board has a statutory function under Section 75(3)(k) of the Act to set out matters that should be taken into account when a relevant authority is exercising a power to grant or refuse permits under Chapter 7 Part 2 of the Act. The water affecting activities section has been included in the Business and Operational Plan to ensure these policies are reviewed regularly and can be modified as required.

Once the new Business and Operational Plan for 2019-20 to 2021-21 is finalised, it will not undergo another review until the Landscape SA Act is in place.
1.1 Landscape SA Reform

The state government is currently undertaking significant reforms to change the way that natural resources are managed. The focus of the reforms include:

- decentralised decision making
- a simple and accessible system
- community and land owners at the centre
- a whole of landscape approach
- back to basics – a renewed focus on the issues that matter most to regional communities including soil, water and pest plants and animals.

As part of the reforms, the government intends to repeal the *Natural Resources Management Act 2004* and develop a new *Landscapes SA Act* to support natural resources management across the state.

The Board welcomes the government’s reform agenda and aims to capitalise on the opportunities to strengthen the delivery of practical on ground works that address local priorities. The Board is working with the government to support the reforms and ensure existing knowledge, systems and processes that are working well are appropriately transitioned under the new legislation.

While the development of the new legislation progresses, the Board has drafted a three year Business and Operational Plan that could cover the period 1 July 2019 through to 30 June 2022. The draft plan has been developed in line with current legislative requirements and the government’s priorities for natural resources management.

Once the new legislation is enacted, regional plans and business plans may need to be updated. Any change to planning processes will be managed to ensure future planning is simple, accessible and transparent. Future plans will continue to build on the excellent level of community input to the planning process, and we do not intend to unnecessarily duplicate recent engagement.
2. The Region

The SAMDB region is one of eight natural resources regions in South Australia. It also forms the south-western portion of the Murray-Darling Basin catchment which the River Murray, South Australia’s most substantial and important surface water resource, flows through. The region covers over 5.6 million hectares and extends from the Victorian and New South Wales borders to the catchment boundary along the Mount Lofty Ranges, from the Rangelands in the north to the Murray Mallee and Murray Mouth in the south, and up to 14 kilometres into the Southern Ocean (Figure 1). The region supports a population of approximately 125,000 people and is one of South Australia’s most ecologically diverse and agriculturally productive regions. More detail about the natural resources of the region is described in the NRM Plan and the RAP.

The NRM Plan describes the region in term of districts, broadly categorised by their ecological, social and economic characteristics. The RAP further divides the region into 11 subregions (Figure 1), this finer scale represents the different social-ecological systems (SESS) across the districts and the region. These are dynamic systems where people and environmental ‘assets’ such as soil, water and biodiversity, interact and influence one-another. They are shaped by social and environmental influences. (Figure 2). The Board uses this scale in planning their priorities for investment.

The use of social-ecological systems in planning instead of purely biophysical or administrative boundaries in the RAP recognises:

- people manage resources, and people are part of the social-ecological system
- understanding common motivations and social influences can improve NRM planning and build community capacity to adapt and flourish in changing times
- different environmental and social influences in NRM planning will help us better target NRM programs to NRM needs and community capacity to do NRM
- people and landscape systems are dynamic and frequently changing so the resources that support the variety of different systems can shift between more desirable and less desirable states.
Figure 2.1: NRM Districts and subregions (social-ecological systems) of the South Australian Murray-Darling Basin

Figure 2.2: Social-ecological systems recognise the interactions between people and the environment. Change can come from within, or from outside the system.
3. Targets and Outcomes

As a major partner in the delivery of the Strategic NRM Plan, the Board is committed to the long-term vision for the future of the SAMDB region. The vision of a healthy living landscape meeting the social, environmental, economic and cultural needs of the community, and ensuring the rights and wellbeing of future generations is supported by three goals that outline what stakeholders in the region are aiming to achieve by 2030 (20 years from the adoption of the first NRM Plan).

These goals recognise the link between people, production and conservation, and are as follows:
1) People taking responsibility for natural resources and making informed decisions
2) Sustainable management and productive use of land, water, air and sea
3) Improved condition and resilience of natural systems

The resource condition targets, introduced in 2010 to support the vision and goals, describe the desired condition of natural resources in 2030. The 20-year resource condition targets (Table 3.1) assist with evaluating the region’s collective performance towards achieving the shared vision and goals over the long term.

Table 3.1: Resource Condition Targets

<table>
<thead>
<tr>
<th>Resource Condition Targets</th>
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<tbody>
<tr>
<td>W1 All water resources are managed sustainably by 2030</td>
</tr>
<tr>
<td>W2 Improve water quality to meet regional water needs by 2030</td>
</tr>
<tr>
<td>W3 Water is available and managed to enhance and maintain the ecological function and resilience of water dependent ecosystems by 2030</td>
</tr>
<tr>
<td>B1 Increase the ecological function and resilience of native ecosystems by 2030</td>
</tr>
<tr>
<td>B2 Native species and ecological communities at lower or no greater risk of extinction by 2030</td>
</tr>
<tr>
<td>L1 Protect and improve soil and land to support the productive capacity and natural resources of the region by 2030</td>
</tr>
<tr>
<td>A1 Reduce net greenhouse gas emissions in the SA Murray-Darling Basin in line with State targets by 2030</td>
</tr>
<tr>
<td>A2 All natural resource managers have capacity to adapt to climate change impacts by 2030</td>
</tr>
<tr>
<td>P1 People have the capacity to manage natural resources sustainably by 2030</td>
</tr>
<tr>
<td>P2 Increase protection and preservation of Aboriginal culture through participation of Aboriginal people by 2030</td>
</tr>
<tr>
<td>P3 All planning, policy and investment decisions consider natural resources management (ecological, social and economic) by 2030</td>
</tr>
</tbody>
</table>
4. Board Values, Mission and Guiding Principles

A set of values, a mission statement, and guiding principles are used by the Board to guide how it works with its regional community and in developing and delivering the Business Plan.

Values

- **Collaboration and Connection** - *We create solutions together through shared responsibility*
- **Integrity** - *We act honestly, fairly and consistently*
- **Tenacity** - *We are courageous, determined and never give up on finding a way*
- **Innovation** - *We approach our work with energy, creativity and a healthy dose of perspective.*

**The Board’s Mission**

Advancing natural resources management with and for the SAMDB community.

**Guiding Principles**

1. **Work together for success**
   Partnering with the community, government and industries to reach goals and targets for our region.

2. **Build knowledge**
   Sound decision making using an evidence based approach to managing natural resources is supported by increased awareness and knowledge that is valued by the region.

3. **Strive for balance**
   Undertaking natural resources management activities that support a healthy economy that is meeting social and environmental objectives.

4. **Think innovatively**
   Using creativity and leadership to manage our natural resources for the future.

5. **Manage holistically**
   Ensuring integrated landscape management by managing landscape components and processes together rather than dealing with issues in isolation.

6. **Work within the limits to ensure the future**
   Working within the sustainable limits to protect the capacity of our resources to provide services for the wellbeing of current and future generations.

7. **Prevent rather than cure**
   Preventing the degradation of natural resources by dealing with causes is preferable to rehabilitation and treating symptoms.

8. **Continuous improvement and adaptive management**
   Past success should be built upon, while past mistakes and new information should be considered as opportunities for learning and informing the iterative processes that support future decisions. A precautionary approach should be taken where there is insufficient scientific or technical evidence on which to base a decision.
5. Investment proposal

The development of the Board’s work program has been based on the guidance provided in the NRM Plan, the RAP and the Board’s strategic directions and focus areas.

The investment will be delivered through a range of approaches, including direct investment, contracts for works and services, and grants to community organisations. The investment is complementary to that of other organisations and individuals within the region which collectively advances progress towards the goals of the NRM Plan for the region.

5.1 The Board’s focus and strategic directions

The Board contributes to the implementation of the NRM Plan and RAP through five strategic directions:

1. Managing our biodiversity assets to improve resilience of ecosystems into the future for all while achieving landscape scale ecological change.

2. Managing water resources for the benefit of multiple users including the environment in a changing climate.

3. Working with landholders towards sustainable production systems.

4. More people doing more NRM better – through behavioural and generational change.

5. Building increased understanding of the adaptive capacity of the region.

Each strategic direction covers a suite of focus areas and collectively these will be the Board’s primary focus for the next 3-5 years, highlighting areas they believe are of the highest need and can make the biggest difference. The choices reflect the Board’s desire to:

- take current resource condition and trends into account and protect what we already have
- understand and manage drivers of change to address causes and where possible, practice prevention rather than cure
- be aware of opportunities when they present and seek to take advantage of them
- work together for maximum collective impact, acknowledging the expertise and input that others contribute, and leveraging investment
- balance the triple bottom line of environmental, economic and social impact
- maximise past investment choices and best use of available external resource.

The Board is also committed to:

6. Leadership, best practice and continuous improvement

This direction and the suite of regional core services that underpin it, supports the Board to adaptively manage and continue to improve delivery, ensuring quality services and work to achieve the NRM plan outcomes.
### Table 5.1: Investment proposal

<table>
<thead>
<tr>
<th>Strategic directions</th>
<th>Focus Areas</th>
<th>2019/2020</th>
<th>2020/2021</th>
<th>2021/2022</th>
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</thead>
</table>
| Managing biodiversity assets to improve resilience of ecosystems into the future for all, while achieving landscape scale ecological change. | • Restore and improve ecological functions at a landscape-scale, especially in the Upper Murray  
• Maintain condition of key regional assets (such as Billiat Conservation Park, Ngarkat Conservation Park and their surrounds) including reducing risks to threatened species from inappropriate fire regime through active fire management, addressing total grazing pressure and site-scale restoration, especially in the Southern Murray Mallee – Lowan Mallee  
• Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss), focused on Rockleigh to Monarto, Burra to Kapunda, Prospect Hill, Western Murray Mallee and Northern Murray Mallee areas  
• Promote and support sustainable grazing of native pastures for production and biodiversity outcomes predominately in the Central, Northern Ranges and Pastoral zone.  
• Secure the future of prioritised (by staff team) threatened species and threatened ecological communities by implementing recovery plans, addressing habitat decline and species-specific threats. | 2,802,835 | 2,692,965 | 2,723,838 |
| Managing water resources for the benefit of multiple users including the environment in a changing climate | • Improving the ecological function of wetlands along the River Murray corridor through the management of environmental water  
• Continue to optimise irrigation in key irrigation districts to provide water for the environment and improve productivity, focused on the Upper Murray and river corridor  
• Ensure the use of water resources in prescribed areas is managed within sustainable limits – intermediate focus will be on the Eastern Mount Lofty Ranges water allocation plan (WAP) and the River Murray WAP  
• Deliver the requirements under the Basin Plan and National Water Initiative to all water allocation plans, intermediate focus will be on issues related to the Eastern Mount Lofty Ranges water resource plan (WRP) and the River Murray WRP  
• Engage the indigenous community in water planning and identification of their interests in water planning (focusing on current WAP engagement)  
• Promote sustainable use of water resources in urban and high growth areas of Eastern Mount Lofty Ranges and Southern Fleurieu  
• Integrated water management to improve aquatic and terrestrial health of catchments in the Eastern Mount Lofty Ranges and Southern Fleurieu | 3,080,993 | 3,112,361 | 3,158,484 |
| Working with landholders towards sustainable production systems | • Work with industry and farming groups to demonstrate and promote best practice management of emerging threats (seepage below the root zone, herbicide resistance, nitrogen leaching, soil acidification, reduced soil health) in broad acre farming districts.  
• Work with industry and farming groups to demonstrate and promote best practice management of soil acidity in areas identified in the RAP.  
• Promote and support sustainable grazing of native pastures for production and biodiversity outcomes, predominately in the Central, Northern Ranges and Pastoral zone.  
• Continue to optimise irrigation in key irrigation districts to provide water for the environment and improve productivity, focused on the Upper Murray and river corridor  
• Demonstrate and promote best management practices to reduce soil erosion risks in dryland farming systems, focusing in the Southern and Northern Murray Mallee  
• Maintain landholder awareness and encourage management of emerging weeds across the region  
• Facilitate landholder networks and collaboration for improved vertebrate pest management in the Southern and Northern Murray Mallee | 2,712,263 | 2,835,621 | 2,862,729 |
## Strategic directions

### More people doing more NRM better – through behavioural and generational change
- Build and maintain partnerships with key stakeholders including different sectors of government, non-government organisations, community, farming and industry groups.
- Engage and strengthen the capacity of Aboriginal communities and groups to manage natural resources, and support their leadership in the protection of cultural values and assets.
- Create positive behaviour change and build leadership capacity through increased knowledge, skills and participation in NRM (including young people).
- Facilitate and support landholder and community networks to collaborate and share knowledge that empowers them to effectively manage the region’s natural resources.
- Encourage and support the community’s contribution in NRM decision making, including their provision of data and evidence.
- Provide opportunities for the broader community (including young people) to connect with nature.

### Building increased understanding of the adaptive capacity of the region
- Improve the capacity of land managers to adapt to change.
- Incorporate climate adaptation into NRM planning to ensure actions are climate-ready.

### Leadership, best practice and continuous improvement
- Statutory planning including the Strategic NRM Plan, Board’s Business Plan, and water allocation plans.
- An effective monitoring, evaluation and reporting framework to assess the impact of the Strategic NRM Plan.
- Monitoring, evaluation, reporting and improvement delivered at the program and project scale.
- Contractual obligations that come with external funding are delivered
- Continuously improve the information management systems that support evidence based decision making
- Regular communication of Board business through all types of media (including social media)
- Management of the Board’s brand through the maintenance of communications platforms and compliance with communications-related protocols and obligations (including those associated with external funding).
- Support for the region’s volunteers including core training, volunteer recognition and small grants.

<table>
<thead>
<tr>
<th>Strategic directions</th>
<th>Focus Areas</th>
<th>2019/2020</th>
<th>2020/2021</th>
<th>2021/2022</th>
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<td>More people doing more NRM better – through behavioural and generational change</td>
<td></td>
<td>6,679,519</td>
<td>6,340,052</td>
<td>6,600,051</td>
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<td>Building increased understanding of the adaptive capacity of the region</td>
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<td>159,047*</td>
<td>165,666*</td>
<td>166,981*</td>
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<tr>
<td>Leadership, best practice and continuous improvement</td>
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<td>2,035,044</td>
<td>2,136,151</td>
<td>2,164,972</td>
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<td><strong>Total Expenditure</strong></td>
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<td><strong>17,469,701</strong></td>
<td><strong>17,282,816</strong></td>
<td><strong>17,677,053</strong></td>
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* While the direct investment in the “Building increased understanding of the adaptive capacity of the region” Strategic Direction appears to be relatively low, the delivery of action is integrated across the implementation plan and therefore the investment is attributed to the other Strategic Directions.
Figure 5.1: Map of focus areas across the SAMDB Region

**Central Ranges/Lower Northern Ranges**
- Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss) in Illura to Kapunda areas.
- Promote and support sustainable grazing of native pastures for production and biodiversity outcomes.

**Lower Murray and Plains**
- Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss) in Renmark to Monarto area.
- Work with industry and farming groups to demonstrate and promote best practice management of emerging threats (seepage below the root zone, herbicide resistance, nitrogen leaching, soil salification, reduced soil health) in broad acre farming districts.

**Eastern Mount Lofty Ranges, Southern Flinders**
- Ensure the use of water resources (prescribed areas) is managed within sustainable limits—intermediate focus will be on the DULK WAP.
- Deliver the requirements under the Basin Plan and National Water Initiative to all water allocation plans, intermediate focus will be on issues related to the EMUL WAP.
- Engage the Indigenous community in water planning and identification of their interests in water planning (focusing on current WAP engagement).
- Promote the sustainable use of water resources in urban and high growth areas.
- Integrated water management to improve septic health of catchments.
- Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss) in Prospect Hill area.
- Work with industry and farming groups to demonstrate and promote best practice management of soil acidity in areas.

**Meningie Talford Basin**
- Work with industry and farming groups to demonstrate and promote best practice management of emerging threats (seepage below the root zone, herbicide resistance, nitrogen leaching, soil salification, reduced soil health) in broad acre farming districts.

**Pastoral**
- Promote and support sustainable grazing of native pastures for production and biodiversity outcomes.

**Upper Murray**
- Restore and improve ecological functions at a landscape scale.

**Upper Murray – River Corridor**
- Restoration of wetlands along the River Murray corridor through the management of environmental water.
- Continue to optimise irrigation in key irrigation districts to provide water for the environment and improve productivity.
- Ensure the use of water resources in prescribed areas is managed within sustainable limits—intermediate focus will be on the River Murray WAP.
- Deliver the requirements under the Basin Plan and National Water Initiative to all water allocation plans, intermediate focus will be on issues related to the River Murray WAP.
- Engage the Indigenous community in water planning and identification of their interests in water planning.

**Southern Murray Mallee and Southern Murray Mallee**
- Demonstrate and promote best management practices to reduce soil erosion risks in dryland farming systems.
- Work with industry and farming groups to demonstrate and promote best practice management of emerging threats (seepage below the root zone, herbicide resistance, nitrogen leaching, soil salification, reduced soil health) in broad acre farming districts.
- Facilitate landholder networks and collaboration for improved vertebrate pest management.
- Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss) in Western Murray Mallee and Northern Murray Mallee areas.

**Southern Murray Mallee**
- Maintain condition of key regional assets (such as Billit, Ngarlea and their surrounds) including reducing risks to threatened species from inappropriate fire regime through active fire management, addressing total grazing pressure and site-scale restoration.
5.2. Alignment of investment to the government’s Landscape SA reform priorities

The new legislation is intended to strengthen community–led delivery of natural resources management at a whole of landscape scale. The focus is on empowering communities and land managers to be directly responsible for the sustainable management of their region’s natural resources with an emphasis on soil quality, water management, and pest plant and animal control.

The table below highlights how the Board’s investment proposal aligns with the government’s priorities.

**Table 5.2: Alignment of Board’s investment to the government’s reform priorities.**

<table>
<thead>
<tr>
<th>Government’s Priorities</th>
<th>The Board’s Focus Areas</th>
</tr>
</thead>
</table>
| Soil Quality            | • Work with industry and farming groups to demonstrate and promote best practice management of soil acidity  
                          | • Demonstrate and promote best management practices to reduce soil erosion risks in dryland farming systems  
                          | • Improve the capacity of land managers to adapt to change |
| Water Management        | • Improving the ecological function of wetlands along the River Murray corridor through the management of environmental water  
                          | • Continue to optimise irrigation in key irrigation districts to provide water for the environment and improve productivity  
                          | • Ensure the use of water resources in prescribed areas is managed within sustainable limits.  
                          | • Deliver the requirements under the Basin Plan and National Water Initiative to all water allocation plans.  
                          | • Engage the indigenous community in water planning and identification of their interests in water planning  
                          | • Promote sustainable use of water resources in urban and high growth areas  
                          | • Integrated water management to improve aquatic and terrestrial health of catchments |
| Pest plant and Animal control | • Work with industry and farming groups to demonstrate and promote best practice management of emerging threats  
                                 | • Educate landholders to maintain awareness and encourage management of emerging weeds across the region  
                                 | • Facilitate landholder networks and collaboration for improved vertebrate pest management |
| Other Stewardship priorities | • Promote and support sustainable grazing of native pastures for production and biodiversity outcomes  
                                 | • Restore and improve ecological functions at a landscape-scale  
                                 | • Maintain condition of key regional assets (such as Billiat Conservation Park, Ngarkat Conservation Park and their surrounds) including reducing risks to threatened species from inappropriate fire regime through active fire management, addressing total grazing pressure and site-scale restoration  
                                 | • Maintain condition and improve the level of protection of biodiversity hotspots (prevent loss).  
                                 | • Build and maintain partnerships with key stakeholders  
                                 | • Facilitate and support landholder and community networks to collaborate and share knowledge that empowers them to effectively manage the region’s natural resources.  
                                 | • Encourage and support the community’s contribution in NRM decision making, including their provision of data and evidence. |
6. Income proposal

The Board expects to receive funds to deliver the Implementation Program from a range of sources. These include the regional NRM levy, the NRM water levy and various state and Australia Government funding programs.

Table 6.1: Funding sources for the implementation of the Business Plan

<table>
<thead>
<tr>
<th>INCOME PROPOSAL</th>
<th>Adopted Budget</th>
<th>Estimated Budget</th>
<th>Estimated Budget</th>
<th>Estimated Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018-19</td>
<td>2019-20</td>
<td>2020-21</td>
<td>2021-22</td>
</tr>
<tr>
<td>NRM Levies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 1 regional NRM levy</td>
<td>14,051,780</td>
<td>14,429,170</td>
<td>14,818,198</td>
<td>15,218,130</td>
</tr>
<tr>
<td>Division 2 NRM water levy</td>
<td>5,767,000</td>
<td>5,920,700</td>
<td>6,080,000</td>
<td>6,244,000</td>
</tr>
<tr>
<td>Other Income</td>
<td>8,284,780</td>
<td>8,508,470</td>
<td>8,738,198</td>
<td>8,974,130</td>
</tr>
<tr>
<td>Animal and plant control contracts</td>
<td>267,913</td>
<td>280,000</td>
<td>280,000</td>
<td>280,000</td>
</tr>
<tr>
<td>Interest</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Other</td>
<td>26,913</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants - State Government</td>
<td>20,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Impact of Orchard Covers - PIRSA</td>
<td>20,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Grants - Australian Government</td>
<td>2,989,353</td>
<td>2,760,531</td>
<td>2,184,618</td>
<td>2,178,922</td>
</tr>
<tr>
<td>National Landcare Program Regional Land Partnerships – Core Services</td>
<td>439,796</td>
<td>446,883</td>
<td>449,433</td>
<td>443,737</td>
</tr>
<tr>
<td>National Landcare Program Regional Land Partnerships – Project Services</td>
<td>1,785,111</td>
<td>1,735,185</td>
<td>1,735,185</td>
<td>1,735,185</td>
</tr>
<tr>
<td>Commonwealth On-Farm Further Irrigation Efficiency (COFFIE) Program</td>
<td>31,011</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Working on Country</td>
<td>570,476</td>
<td>578,463</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>162,959</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Income</td>
<td>17,368,046</td>
<td>17,469,701</td>
<td>17,282,816</td>
<td>17,677,052</td>
</tr>
</tbody>
</table>

Note: The information in this table is based on known funding sources. The Board may receive further funding from the Australian Government across the life of this Business Plan.
6.1 NRM levies

The NRM levy is the primary source of funding for the management of the region’s natural resources. Funds raised through the NRM levy contribute to achieving the region’s vision of a healthy living landscape meeting the social, environmental, economic and cultural needs of the community and ensuring the rights and wellbeing of future generations. The NRM levy also provides a unique opportunity to leverage significant amounts of external funding from government programs into the region.

Section 92 of the Natural Resources Management Act 2004 (the Act) enables the Board to specify the amount to be contributed by constituent councils (Division 1 regional NRM levy) towards the cost of performing its functions under the Act. Section 101 of the Act enables the Minister to declare a water levy or levies that will return an amount as stated in the NRM plan (Division 2 NRM water levy).

The NRM levy is collected from rate payers and water licence holders throughout the SAMDB region as follows:

- **Division 1 Regional NRM Levy** – collected by councils as part of rates notices to rate payers
- **Division 2 NRM Water Levy** - collected by Department for Environment and Water.

The levy proposal, outlined in the table below, is a continuation of the levy collected in the region during 2018-19 and has been adjusted to reflect the increase in consumer price index (CPI). The levy proposal conforms to the Government’s reform agenda for natural resources management which includes limiting proposed levy increases to CPI into the future.

**Table 6.2**: Funds proposed to be raised through the NRM levies.

<table>
<thead>
<tr>
<th></th>
<th>2019-20 ($)</th>
<th>2020-21 ($)</th>
<th>2021-22 ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division 1 regional NRM levy</td>
<td>5,920,700</td>
<td>6,080,000</td>
<td>6,244,000</td>
</tr>
<tr>
<td>Division 2 NRM water levy</td>
<td>8,508,470</td>
<td>8,738,198</td>
<td>8,974,130</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14,429,170</strong></td>
<td><strong>14,818,198</strong></td>
<td><strong>15,218,130</strong></td>
</tr>
</tbody>
</table>
6.2 Basis for the NRM levy

In setting the NRM levies, the Board uses the following principles:

**Fairness**
- User/beneficiary pays – people who are the beneficiaries of natural resources and their management in the region should pay accordingly
- Shared responsibility - the responsibility to achieve ecologically sustainable development is a shared responsibility between the public sector, the private sector and the community

**Efficiency**
- Certainty – the levy arrangement should deliver a certain outcome for the managers of the natural resources of the region and the ‘users’ of the natural resources, so that they can plan and budget accordingly
- Resource use efficiency – the basis for determining the levy should encourage efficient and sustainable use and the protection and enhancement of the region’s natural resources
- Administrative efficiency – the levy collection and management procedures should operate at minimum cost

**Governance**
- Accountability – the natural resource managers financed by the levy (i.e. the Board) should be publicly accountable for their use of funds
- Transparency – the process for calculating the levy and the amount paid by users should be readily observable, subject to individual user confidentiality constraints
- Reasonable basis – costs incurred in managing the natural resources of the region should be contained at an economic level.

6.2.1 Division 1—regional NRM levy

The Act provides a range of options as the basis for calculating the regional NRM levy. Based on the principles established by the Board, the value of rateable land was used to determine the regional NRM levy.

Table 6.3 outlines each council’s share of the total regional NRM levy and the average regional NRM levy charged per property in that council area.

Table 6.3 also indicates the amount each council can claim to offset the costs related to the collection of the regional NRM levy.
Table 6.3: Indicative council share of regional NRM levy, average regional NRM levy per property and council levy collection fee in 2019-20

<table>
<thead>
<tr>
<th>Council</th>
<th>Indicative council share of total levy ($)</th>
<th>Average levy per property ($)</th>
<th>Council levy collection fee ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide Hills</td>
<td>6,252</td>
<td>133.03</td>
<td>2,623.41</td>
</tr>
<tr>
<td>Alexandrina</td>
<td>1,356,473</td>
<td>86.36</td>
<td>6,587.75</td>
</tr>
<tr>
<td>Barossa</td>
<td>65,750</td>
<td>87.43</td>
<td>2,801.87</td>
</tr>
<tr>
<td>Berri Barmera</td>
<td>312,808</td>
<td>46.81</td>
<td>4,303.21</td>
</tr>
<tr>
<td>Coorong</td>
<td>202,931</td>
<td>52.30</td>
<td>3,593.67</td>
</tr>
<tr>
<td>Goyder</td>
<td>183,193</td>
<td>47.50</td>
<td>3,587.85</td>
</tr>
<tr>
<td>Karoonda East Murray</td>
<td>64,535</td>
<td>43.28</td>
<td>2,988.93</td>
</tr>
<tr>
<td>Loxton Waikerie</td>
<td>461,454</td>
<td>51.63</td>
<td>4,873.78</td>
</tr>
<tr>
<td>Mid Murray</td>
<td>551,128</td>
<td>48.20</td>
<td>5,505.85</td>
</tr>
<tr>
<td>Mount Barker</td>
<td>1,483,142</td>
<td>96.44</td>
<td>6,504.47</td>
</tr>
<tr>
<td>Murray Bridge</td>
<td>771,907</td>
<td>62.36</td>
<td>5,744.81</td>
</tr>
<tr>
<td>Onkaparinga</td>
<td>4,500</td>
<td>140.61</td>
<td>2,619.61</td>
</tr>
<tr>
<td>Renmark Paringa</td>
<td>334,147</td>
<td>57.25</td>
<td>4,089.06</td>
</tr>
<tr>
<td>Southern Mallee</td>
<td>118,658</td>
<td>60.14</td>
<td>3,110.94</td>
</tr>
<tr>
<td>Victor Harbor</td>
<td>3,822</td>
<td>191.08</td>
<td>2,616.57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,920,700.00</strong></td>
<td><strong>66.97</strong></td>
<td><strong>61,552</strong></td>
</tr>
</tbody>
</table>
6.2.2. Division 2—NRM water levy

The Act provides a range of options for calculating the NRM water levy. For the River Murray Prescribed Watercourse, option 7 (the share of the water that makes up the relevant water resource) will be applied by the Board as the basis for calculating the NRM water levy. For all other prescribed water resources within the SAMDB region, option 2 (the quantity of water allocated) will be applied as the basis for calculating the NRM water levy.

The NRM water levy will be payable by persons authorised by a water licence to take water from the prescribed resources identified in Table 6.4 either:

- at the rate indicated in Table 6.4 or
- A levy of $200, whichever is the greater.

The levy does not apply where the water is taken for domestic purposes or for the watering of stock not subject to intensive farming. The levy will also not apply where the water is allocated to Taking LABA (Flood Delivery) in the Eastern Mount Lofty Ranges. The levy for water allocated as Taking LABA (Flood) in the Eastern Mount Lofty Ranges will only be applied at the rate indicated in Table 6.4 (the levy of $200 will not apply).

Table 6.4: NRM water levy rates

<table>
<thead>
<tr>
<th>PRESCRIBED RESOURCE</th>
<th>2019-20</th>
<th>2020-21</th>
<th>2021-22</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate</td>
<td>Rate</td>
<td>Rate</td>
</tr>
<tr>
<td>River Murray Metropolitan Consumptive Pool (Class 6)</td>
<td>2.059 cents per unit share</td>
<td>2.115 cents per unit share</td>
<td>2.172 cents per unit share</td>
</tr>
<tr>
<td>All Purposes Consumptive Pool (Class 2) water access entitlements</td>
<td>2.059 cents per unit share</td>
<td>2.115 cents per unit share</td>
<td>2.172 cents per unit share</td>
</tr>
<tr>
<td>River Murray All Purposes Consumptive Pool (Class 3 and Class 5) water access entitlements</td>
<td>0.662 cents per unit share</td>
<td>0.680 cents per unit share</td>
<td>0.698 cents per unit share</td>
</tr>
<tr>
<td>River Murray All Purposes Consumptive Pool (Class 3 (Qualco Sunlands)) water access entitlements</td>
<td>0.630 cents per unit share</td>
<td>0.647 cents per unit share</td>
<td>0.665 cents per unit share</td>
</tr>
<tr>
<td>Angas Bremer</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Mallee – reticulated</td>
<td>2.059 cents per kilolitre</td>
<td>2.115 cents per kilolitre</td>
<td>2.172 cents per kilolitre</td>
</tr>
<tr>
<td>Mallee</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Mineral Sands Mining</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Peake, Sherlock &amp; Roby</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Marne Saunders</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Eastern Mount Lofty Ranges</td>
<td>0.662 cents per kilolitre</td>
<td>0.680 cents per kilolitre</td>
<td>0.698 cents per kilolitre</td>
</tr>
<tr>
<td>Taking LABA (Flood)</td>
<td>0.158 cents per kilolitre</td>
<td>0.162 cents per kilolitre</td>
<td>0.166 cents per kilolitre</td>
</tr>
</tbody>
</table>
6.3. Other Income

6.3.1. Interest

It is anticipated that interest of $100,000 will be received annually during the life of this plan.

6.3.2. Cost recovery

The Board will continue to implement a cost recovery program to partially offset the costs of pest plant and animal programs implemented throughout the region. It is estimated that the Board will recover approximately $180,000 annually during the life of this plan.

6.3.3. State NRM fund

The State Natural Resources Management Fund is a recurrent budget allocation that supports business operations and the necessary administration of the Natural Resources Management Act 2004 (the Act). Allocation of these funds is agreed to by all regional NRM Boards in line with a set of principles that include capacity to access other funds, financial position, funding justification, and funding certainty. Following assessment in line with these principles, the Board will not receive funding from the South Australian Government from the Natural Resources Management Fund during the life of this plan.

6.3.4. National NRM programs

The National Landcare Program Phase 2 is a key part of the Australian Government’s commitment to natural resource management, of which the Australian Government is investing around $1 billion. The majority of the investment will be delivered over a period of five years—from July 2018 to June 2023—while some elements of the program began during the 2017-18 financial year.

With its investment in the next phase of the National Landcare Program, the Australian Government aims to work in partnership with state and territory governments, industry, communities and individuals to protect and conserve Australia’s water, soil, plants, animals and ecosystems, as well as support the productive and sustainable use of these valuable resources.

The Australian Government has selected 47 organisations nationally to deliver the $450 million Regional Land Partnerships program. The Board has been selected to deliver services within the SA Murray-Darling Basin Management Unit. In selecting the Board, the Australian Government will provide approximately $430,000 annually to support the delivery of core services in the SA Murray-Darling Basin Management Unit. In addition, the Australian Government will invest in projects within the SA Murray-Darling Basin Management Unit to protect threatened ecological communities, restore globally-important wetlands, support the recovery efforts for species identified under the Australian Government’s Threatened Species Strategy, improve soil health on farms and provide support to farmers.

6.3.5. Physical resources

The Board owns office buildings at Cambrai, Lameroo and Burra, and sheds at Burra, Cambrai, Karoonda, Lameroo, Murray Bridge, Loxton, Paruna and Waikerie. The head office is located in Murray Bridge. These and other leased buildings support the activities of the Department for Environment and Water field and project staff assigned to the Board. The Board does not plan to purchase any additional land or infrastructure assets during the life of the Business and Operational Plan.
7. Leadership in NRM

7.1. The Board
The Board is a statutory board formed under the provisions of The Natural Resources Management Act 2004. The Board comprises nine members from the general community who are appointed by the Minister for Environment and Water for their skills and knowledge in natural resources management. The Board is also supported by members representing state agencies and local governments in the region. Current members of the Board are listed on the Natural Resources SAMDB website www.naturalresources.sa.gov.au/samurraydarlingbasin.

The Board contracts the services of Natural Resources SAMDB (a regional branch of DEW) to deliver the Implementation Program of this plan. The Regional Director works with the Board and DEW to oversee program implementation.

7.2. NRM Groups
Under the provisions of the NRM Act, the Board identified the following four areas within the region for the operation of NRM groups:

- Ranges to River
- Mallee and Coorong
- Rangelands
- Riverland.

Each NRM group consists of up to seven members appointed by the Board on the basis of their knowledge, skills and experience. The NRM groups strengthen the Board’s connection to the community, industry and local government. They are the primary mechanism for raising awareness of local issues, priorities and actions, and add value to regional decision making and program delivery by facilitating two-way communication with key stakeholders. The NRM groups are provided with executive and technical support from Natural Resources SAMDB staff assigned to the Board.

7.3. Committees
Three committees have been established by the Board that contribute to the implementation of its business. These are the Finance and Risk Committee, the NRM Group Coordination Forum, and the River Murray Advisory Committee (RMAC). RMAC provides advice to the Board and the minister on the review, development and implementation of the River Murray Water Allocation Plan and other issues relating to this water resource. The Board also establishes specialist advisory committees when needed.

The Board also contributes to the operations of the Box Flat Dingo Control Committee. This is a joint activity with the South East Natural Resources Management Board. The committee has responsibility for baiting and monitoring works for wild dogs and foxes in the Box Flat area including the conservation parks. The activities of this committee will continue to be supported by the Board.
8. Water Affecting Activities

8.1. General policies

Section 75(3)(k) of the Act requires an NRM plan to set out matters that should be taken into account when a relevant authority is exercising a power to grant or refuse permits under Chapter 7 Part 2 of the Act.

A permit is required for water affecting activities (WAAs) contained within section 127(3) of the Act, and may be required for activities listed in section 127(5) of the Act. Table 8.1 sets out the activities that require a permit in the SAMDB NRM region, subject to the exclusions set out in the Act and below. Table 8.1 also identifies the relevant authority for assessing permit applications for each type of activity.

A number of activities are excluded from requiring a permit under section 129 of the Act; this includes some activities which are approved under other legislation, such as the Environment Protection Act 1993 or the Development Act 1993. Some activities are also excluded from requiring a permit under section 127(7) of the Act. In addition, the Board has identified some instances where activities that would otherwise require a permit are excluded. These activities are shown in Table 8.1 (columns ‘WAAs excluded from requiring a permit – general exclusions’ and ‘WAAs excluded from requiring a permit – specific exclusions’), and discussed further in sections 8.1.2 and 8.1.3 in some cases.

The steps in assessing a WAA permit application are as follows:

1. Ascertain the nature and scope of the WAA with reference to section 127(3) and 127(5) of the Act.

2. Precisely define the affected site and determining if it is affected by a water allocation plan (WAP).

3. Ensure sufficient information has been provided by the applicant to enable the relevant authority to make an informed decision.

4. Determine if the WAA permit application qualifies as an exclusion. If the application does not qualify, it will be assessed via the ‘on merit’ process.

5. ‘On merit’ applications will be assessed against the WAA permit policies contained in this plan, and/or the relevant WAP as appropriate.

Public notification is not required for any WAA permit applications in the SAMDB region.
8.1.1. Best Practice Operating Procedures

The Board has determined a process for granting exemptions for local government and other statutory authorities for particular Water Affecting Activities that would otherwise require a permit.

An exemption to requiring a permit may be granted when all of the following points are met:

- Where the Council or authority is able to present to the Board a Best Practice Operating Procedure (BPOP) in relation to the WAA; and
- The person proposing to undertake the activity has obtained written approval from the Board to undertake the activity or activities in accordance with the BPOPs; and
- The activity is undertaken in accordance with the BPOPs

Further information on the development of a BPOP will be available on the Natural Resources SAMDB website.

8.1.2. Current Recommended Practice

A Current Recommended Practice (CRP) sets out what the Board considers to be the most appropriate approach, methodology and/or design for undertaking particular water affecting activities. In addition, a CRP may further clarify the standards required to discharge the specific duty pursuant to section 133 of the Act.

In some instances, a CRP may negate the requirement for a WAA permit (see Table 8.1). The Board requires to be notified prior to the commencement of an activity undertaken in accordance with a CRP in such cases. A list of approved CRPs is published on the Natural Resources SAMDB website.

8.1.3. Undertaken as part of an NRM endorsed work plan

An exemption from requiring a WAA permit will be provided for some activities where the Board has a contract with an applicant/financial deed pursuant to section 42 of the Act that specifies that there is an exclusion from requiring a WAA permit, for a specific work plan. All Board endorsed work plans will follow any relevant Current Recommended Practice for that WAA activity.

8.1.4. Water allocation plan interface

A water allocation plan may set out additional policies that the relevant authority will take into account when considering an application for a WAA permit. The policies in a water allocation plan may be different to the policies in the Regional NRM Plan. To the extent that a water allocation plan includes different policies, the policies in the regional NRM Plan will not apply to that prescribed water resource.
<table>
<thead>
<tr>
<th>Act definitions of water affecting activities</th>
<th>Examples of WAAs</th>
<th>WAAs excluded from requiring a permit – general exclusions</th>
<th>WAAs excluded from requiring a permit – specific exclusions</th>
<th>Relevant authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>127(3)(a) Drilling, plugging, backfilling or sealing of a well</td>
<td>Well drilling or closure</td>
<td>As specified in the Act</td>
<td>None—all applications assessed on merit</td>
<td>Minister</td>
</tr>
<tr>
<td>127(3)(b) Repairing, replacing or altering the casing, lining or screen of a well</td>
<td>Well maintenance or upgrade</td>
<td>As specified in the Act</td>
<td>None—all applications assessed on merit</td>
<td>Minister</td>
</tr>
<tr>
<td>127(3)(c) Draining or discharging water directly or indirectly into a well</td>
<td>Managed aquifer recharge</td>
<td>As specified in the Act</td>
<td>None—all applications assessed on merit</td>
<td>Minister</td>
</tr>
<tr>
<td>127(3)(d) The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts—(i) water flowing in a prescribed watercourse; or (ii) water flowing in a watercourse in the Mount Lofty Ranges Watershed that is not prescribed; or (iii) surface water flowing over land in a surface water prescribed area or in the Mount Lofty Ranges Watershed</td>
<td>Dam, wall or other structure; Piping a watercourse; Channelling a watercourse; Stormwater harvesting/treatment wetland</td>
<td>As specified in the Act</td>
<td>Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 127(5)(d)</td>
<td>Board</td>
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<tr>
<td>127(5)(a)</td>
<td>Dam, wall or other structure; Piping a watercourse; Channelling a watercourse; Stormwater harvesting/treatment wetland</td>
<td>As specified in the Act</td>
<td>Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 127(5)(d)</td>
<td>Board</td>
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<td>The erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is not prescribed or flowing over any other land that is not in a</td>
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<tr>
<td>Act definitions of water affecting activities</td>
<td>Examples of WAAs</td>
<td>WAAs excluded from requiring a permit – general exclusions</td>
<td>WAAs excluded from requiring a permit – specific exclusions</td>
<td>Relevant authority</td>
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<td>surface water prescribed area or in the Mount Lofty Ranges Watershed</td>
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<tr>
<td>127(5)(b) The erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse</td>
<td>Buildings or structures &lt;10m²; Pump house; Horse shelter; Culvert; Crossing point or bridge; Fencing</td>
<td>As specified in the Act</td>
<td>Activity that is proposed to be undertaken beyond the 1-in-100 year average recurrence (ARI) flood level, where flood mapping is available, or a distance of 10 metres or more from the banks of the nearest watercourse where flood mapping is not available</td>
<td>Board</td>
</tr>
<tr>
<td>S127(5)(c) Draining or discharging water directly or indirectly into a watercourse or lake</td>
<td>Stormwater from buildings; Pipes; Culverts; Side entry pits</td>
<td>Activity that is undertaken in accordance with a Board endorsed Current Recommended Practice addressing the activity</td>
<td>Activity that involves draining or discharging water of better quality than the receiving waters at a rate not exceeding 1 ML/y</td>
<td>Board</td>
</tr>
<tr>
<td>S127(5)(d) Depositing or placing an object or solid material in a watercourse or lake</td>
<td>Island in dam in a watercourse; Ripraps; Rocks; Tyres; Snags; Filling a watercourse</td>
<td></td>
<td></td>
<td>Board</td>
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<tr>
<td>S127(5)(e) Obstructing a watercourse or lake in any other manner</td>
<td>Planting vegetation</td>
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<td></td>
<td>Board</td>
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<tr>
<td>S127(5)(f) Depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake</td>
<td>Levee; Depositing fill</td>
<td></td>
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<td>Board</td>
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<td>S127(5)(g) Destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse</td>
<td>Removal or destruction of trees, shrubs, grasses</td>
<td>As specified in the Act</td>
<td></td>
<td>Board</td>
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<tr>
<td>127(5)(h) Excavating or removing rock, sand or soil from— (i) a watercourse or lake or the floodplain of a watercourse; or (ii) an area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake</td>
<td>Desilting dam in a watercourse; Desilting wetlands, swamps and springs; Realignment or alteration of a watercourse; Groundwater access trench (GAT) construction</td>
<td>Activity where the proponent has written authorisation to carry out the activity in accordance with Board endorsed Best Practice Operating Procedures (BPOP) addressing the activity</td>
<td>Desilting a dam in some circumstances, provided it is carried out consistently with principle 48, and does not involve a WAA pursuant to 127(5)(d)</td>
<td>Board</td>
</tr>
<tr>
<td>127(5)(i) Using water in the course of carrying on a business in an NRM region at a rate that exceeds the rate prescribed by an NRM plan if the water has been brought into the region by means of a pipe or other channel</td>
<td>Use of imported water for irrigation; Use of imported water for industrial purposes</td>
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<tr>
<td>s127(5)(j) Using effluent in the course of carrying on a business in an NRM region at a rate that exceeds a rate prescribed by an NRM plan</td>
<td>Use of treated effluent (e.g. Community Waste Management System (CWMS)) for irrigation. Use of treated</td>
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</tbody>
</table>

Activity that is undertaken as part of a Board endorsed Current Recommended Practice addressing the activity and notification has been received by the Board prior to commencement.

Activity that is undertaken as part of a Board endorsed work plan that specifies that there is an exclusion from requiring a WAA.

Where imported water is used on the land at a rate of up to 1 ML/ha/y; or up to 1 ML/y for non-irrigated activities.

Where effluent is used on the land at a rate of up to 1 ML/ha/y; or up to 1 ML/y for non-irrigated activities.

Where the water is sourced from an SA Water owned or operated mains water supply network.

Where effluent is used on the land at a rate of up to 1 ML/ha/y; or up to 1 ML/y for non-irrigated activities.

Where a person or business undertaking a WAA is legally obligated to comply.

Minister

Minister
<table>
<thead>
<tr>
<th>Act definitions of water affecting activities</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>effluent for industrial purposes</td>
<td>permit for that activity</td>
<td>with a mandatory code of practice for the use of effluent that is consistent with the principles in this plan (for example, but not limited to, the EPA Code of Practice for Milking Shed Effluent 2003)</td>
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</table>

### 8.2 Whole of SAMDB NRM region water affecting activity permit policies

The general objectives and principles which all 'on-merit' WAA applications will be assessed against within the SAMDB NRM Region are outlined below.

For the purposes of section 8.2 and 8.3:

- Any terms used that are defined in the Act carry the meaning given by the Act; and
- Any terms used in this plan that are defined in the ‘Water affecting activity definitions’ section (section 8.4) carry the meanings given in that section, unless otherwise specified, or where used in a general sense.

Terms that are given in italics are defined in section 8.4. Italics are generally only used the first time a term is used within a principle. Note that commonly used terms defined in section 8.4 are generally not italicised for the sake of visual clarity.

#### 8.2.1 Objectives

A. Support development and use of water resources in a sustainable and equitable manner to maximise productive use, while providing for the needs of natural ecosystems and other water uses, in the long-term.

B. Prevent activities which could lead to unacceptable deterioration in the quality and quantity of water resources.

C. Minimise adverse impacts of activities on other natural resources and the community.

D. Protect aquifer integrity, and geomorphology of watercourses, lakes and floodplains.

E. Protect the long-term integrity of ecological functions and dependent biodiversity.
8.2.2. Principles

1. A WAA must be undertaken in such a way that, in both the short-term and the long-term, it ensures:
   a) maintenance or improvement of water quality
   b) capture of water is within sustainable limits
   c) equitable sharing of the water available for consumptive use
   d) maintenance of natural hydrological and hydrogeological systems, and environmental water requirements
   e) preservation of water-dependent ecosystems
   f) protection against the risk of harm to public and private assets and public safety from flooding
   g) continued monitoring of potential impacts from the activity where appropriate.

2. A WAA must not:
   a) cause or exacerbate soil erosion or bank destabilisation of a watercourse or lake, or erosion of a floodplain
   b) be located in ecologically sensitive areas where the activity will or is likely to have a significant detrimental impact
   c) have adverse impacts on water resources, other natural resources, or communities at both local and regional levels
   d) have adverse impacts on biodiversity and habitat preservation, water-dependent ecosystems, environmental water requirements and migration of aquatic biota
   e) cause or exacerbate unnatural waterlogging or rising watertables
   f) cause unacceptable deterioration in the quality of surface water, underground water or water in a watercourse or lake
   g) create or exacerbate the incidence or intensity of local or regional flooding or increase the flood risk to public and private assets, communities or individuals
   h) impact on authorised devices or activities for scientific purposes
   i) cause damage to the integrity of an aquifer or aquifers.
8.3. Objectives and principles for specific water affecting activities

In addition to the general objectives and principles set out in section 8.2, the relevant authority will consider the following objectives and principles when determining whether to grant or refuse a permit for an activity that will be assessed 'on merit', and when considering best practice operating procedures.

8.3.1. Taking water - section 127(2)

Section 127(2) of the Act provides that a person must not take water from a watercourse, lake or well that is not prescribed or take surface water from land that is not in a surface water prescribed area in contravention of an NRM plan that applies in relation to that water.

The following principles apply to the taking of water in the Noora Groundwater Management Area – Zone 11A North (as defined by the Groundwater (Border Agreement) Act 1986, and shown in Figure 8.1).

These principles will only have effect in the event that the regulation prescribing wells within the Noora Groundwater Management Area – Zone 11A North is revoked.

Objective

F. To ensure compliance with limits and reporting requirements as stated in relevant State and Commonwealth legislation.

Principles

3. The total volume of water taken from wells within the Noora Groundwater Management Area – Zone 11A North shall not exceed the permissible annual volume as determined by the Review Committee from time to time.

4. Water taken from wells within the Noora Groundwater Management Area – Zone 11A North (refer to Figure 8.1) must be taken through a meter supplied, installed and maintained in accordance with the South Australian Licensed Water Use Meter Specification, as may be amended from time to time.

5. If a person takes water from any well within the Noora Groundwater Management Area – Zone 11A North, the annual groundwater extraction volume data must be provided to the Minister’s delegate when requested.

6. Principles 3-5 do not apply to water that is taken for:

   a) domestic purposes or for watering stock (other than stock subject to intensive farming);
   b) native title purposes;
   c) road-making, where the water has a salinity greater than 5,000 total dissolved salts measured in mg/L;
   d) fire-fighting;

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1 At the time of writing these principles, the major extraction of groundwater in Border Zone 11A North is for salt interception schemes (SIS) for the purpose of River Murray salinity management. All current and future SIS wells are metered for State salinity reporting requirements.
e) application of chemicals for the control of pest plants and animals; and
f) application of chemicals to non-irrigated crops or non-irrigated pasture.

8.3.2. Constructing, backfilling or repairing wells—section 127(3)(a) and (b)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 127(3)(a): drilling, plugging, backfilling or sealing of a well; and
- 127(3)(b): repairing, replacing or altering the casing, lining or screen of a well;

referred to here as the ‘activity’ or ‘activities’.

Objectives

In addition to the general objectives outlined in section 8.2.1;

G. Ensure the integrity of headworks are maintained.
H. Ensure wells are constructed in the correct aquifer system.

Principles

In addition to the general principles outlined in section 8.2.2;

7. Well construction must be in accordance with the General Specification for Well Construction, Modification and Abandonment in South Australia (or any subsequent or related policy), as provided by the relevant authority.

8. The equipment, materials and method used for the activity shall not adversely affect the quality of the underground water resource.

9. Aquifers shall be protected during the activity to prevent adverse impacts on the integrity of an aquifer.

10. Where a well passes through two or more aquifers, an impervious seal must be made and maintained between the aquifers to prevent leakage between aquifers.

11. Wells drilled for the drainage or discharge of water into a well shall be pressure cemented along the full length of the casing.

12. The activity shall not adversely affect the quality, quantity and accessibility of water for supply from existing wells operated by other landholders.

13. The activity shall not adversely affect water-dependent ecosystems.

14. The activity shall not significantly increase local drawdown.

15. Where the volume of water taken from wells within the Noora Groundwater Management Area – Zone 11A North has reached or exceeded the permissible annual volume as determined by the Review Committee from time to time, no further well drilling permits shall be granted, if to do so is likely to result in a net increase in volume of groundwater extracted from the Noora Groundwater Management Area – Zone 11A North.

16. A well may be deepened provided that it does not penetrate a different aquifer.

17. Despite principles 12-15, a replacement well may be drilled provided that:

   a) the original well is backfilled in accordance with a permit issued pursuant to section 127(3)(a) of the Act;
b) the replacement well is within 20 metres of the original well; and

c) the replacement well takes water only from the same aquifer as the original well.

### 8.3.3. Drainage or discharging water into a well—section 127(3)(c)

The objectives and principles that follow apply specifically to an activity under section 127(3)(c) of the Act, comprising draining or discharging water directly or indirectly into a well.

In addition to the objectives and principles outlined in this section, the requirements of the Environment Protection Act 1993, and associated relevant policies such as the Environment Protection (Water Quality) Policy, should be considered.

**Objectives**

1. In addition to the general objectives outlined in section 8.2.1; Ensure the integrity of headworks are maintained.

2. Ensure the sustainable operation and management of managed aquifer recharge schemes (also known as aquifer storage and recovery schemes).

**Principles**

In addition to the general principles outlined in section 8.2.2;

18. Water that is drained or discharged into a well must comply with the Environmental Protection Act 1993 and any associated policy.

19. A permit to drain or discharge water into a well will not be issued unless a risk assessment is undertaken to the satisfaction of the relevant authority.

   This risk assessment must be consistent with the National Water Quality Management Strategy—Australian Guidelines for Water Recycling: Managing Health & Environmental Risks, Phase 1 2006 and Phase 2 2009, and other related documents current at the time, including:

   a) an investigation into the sustainability of the drainage or discharge site, including but not limited to, tests for transmissivity, maximum injection pressures and calculated likely impacts on the integrity of the well and confining layers, and impacts of potentiometric head changes to other underground water users

   b) an appropriate operation or management plan demonstrating that operational procedures and monitoring regimes are in place to protect the integrity of the aquifer, minimise the wastage of water and protect the discharge site on an ongoing basis

   c) a water quality assessment which identifies hazards in the source water

   d) a report on the consequences and impacts to the ambient underground water resource where the water quality characteristics (salinity and chemistry composition) of the water to be discharged differs to that of the ambient underground water.

20. Water that is drained or discharged into a well only by means of gravity is exempt from meeting the requirements of principle 19 a).

21. Roof runoff that is drained or discharged into a well via a closed system of capture and transport is exempt from meeting the requirements of principles 19 a), b) and d), provided that the system is equipped with a mechanism to divert first flush water.

22. Further to principle 19 b), continuation of draining and discharge is dependent on an annual report that addresses
the impacts to the ambient underground water at the draining or discharge site. Roof run-off captured in a closed system and then drained or discharged into a well is exempt from this principle.

23. For the purposes of principles 18 and 19, the relevant concentrations, levels or amounts shall be measured in sufficient representative samples of:

a) the water to be drained or discharged

b) ambient underground water collected from the proposed point of injection, or as near as possible to the proposed point of injection.

For the purpose of this principle, 'sufficient representative samples' means suitable samples, collected with equipment appropriate for the substance, material or characteristic to be measured and taken at suitable locations and times to accurately represent the quality of the relevant water.

24. The draining or discharging of water directly or indirectly into a well must not degrade ecosystems dependent on the underground water or detrimentally affect the ability of other persons to lawfully take from that underground water.

25. The headworks for the draining or discharge of water shall be constructed so that extraction, draining and discharge operations can be metered without interference.

26. The headworks for the draining or discharge of water shall be constructed so that water cannot leak if the well becomes clogged.

27. Wells constructed for the draining or discharge of water at pressures greater than gravity must be pressure cemented along the full length of the casing. This does not exempt the need to follow the general specifications for well construction.

8.3.4. Water diversion and collection—sections 127(3)(d) and 127(5)(a)

The objectives and principles that follow apply to an activity under the following sections of the Act:

- 127(3)(d): the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects of diverts—
  (i) water flowing in a prescribed watercourse; or
  (ii) water flowing in a watercourse in the Mount Lofty Ranges Watershed that is not prescribed; or
  (iii) surface water flowing over land in a surface water prescribed area or in the Mount Lofty Ranges Watershed; and

- 127(5)(a): the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts, water flowing in a watercourse that is not in the Mount Lofty Ranges Watershed and that is not prescribed or flowing over any other land that is not in a surface water prescribed area or in the Mount Lofty Ranges Watershed.
Note – Basin Plan limits for non-prescribed surface water management zone

This section includes principles that contribute to meeting South Australia’s responsibilities under the Commonwealth’s Basin Plan. The SAMDB NRM region includes part of the South Australian Non-Prescribed Areas surface water sustainable diversion limit (SDL) resource unit, a planning unit within the Basin Plan’s South Australian Murray Region water resource plan area (see Figure 8.2). This surface water SDL resource unit also includes parts of the South Australian Arid Lands and South East NRM regions.

The Basin Plan sets a sustainable diversion limit for this SDL resource unit that caps allowable surface water taking in the area. The allowable future dam development capacity within the sustainable diversion limit for this SDL resource unit has been apportioned across the three NRM regions by agreement between the regions’ NRM Boards. The NRM Boards have also agreed to be open to re-negotiating the apportionment of available dam development capacity in future.

The dam capacity limit that applies to the part of the SA Non-Prescribed Areas SDL resource unit in the SAMDB NRM region applies to the total dam capacity, including existing dam capacity and future dam development. The existing dam capacity in the part of the SAMDB NRM region within this SDL resource unit prior to the adoption of this plan is estimated to be 16,295 ML.

Note: Catching and holding dams

Dams have traditionally been constructed across watercourses and drainage paths to directly capture water for a variety of purposes.

A dam that directly catches runoff or flow typically inhibits all flow until the dam is filled. Once filled, water spills over and flows further downstream. Such catching dams have been shown to reduce the rate and volume of streamflow, and change the pattern of streamflow, from natural undeveloped conditions. Catching dams may create problems for both other users and ecosystems downstream as they can reduce flow duration and total yield, and lengthen periods of no flows. There is little flexibility in the management of catching dams as they generally capture all runoff or flow until full.

Greater flexibility is provided by holding dams, where water is stored in a holding dam after being diverted from a catchment area or watercourse via a mechanism like a weir, pump or channel, rather than directly capturing runoff or flow with the dam. This is because the mechanism used to divert runoff or water from a watercourse can be varied more easily to allow capture of water at different times or flow rates.
Objectives

In addition to the general objectives outlined in section 8.2.1;

K. Ensure that dams, walls or any other water collection or diversion mechanisms are sited, constructed and operated in a manner which:

a) protects the rights of downstream water users (including the environment) to access those water resources; and

b) maintains amenity.

Principles

In addition to the general principles outlined in section 8.2.2;

Siting

28. A dam, wall or other structure for the storage, collection or diversion of water must not:

a) be constructed in areas prone to erosion

b) contribute to dryland salinity or intrusions of saline underground water into watercourses

c) be constructed or enlarged in ecologically sensitive areas, where this will cause or be likely to cause significant detrimental impacts.

29. Catching dams must not be constructed or enlarged in or across watercourses with a stream order of three or higher, except in exceptional circumstances where the proponent can demonstrate, to the relevant authority’s satisfaction, that there is no reasonably practical alternative approach on the property to collect or access sufficient water to meet the reasonable requirements of the proponent.

30. In all other cases, holding dams should be constructed in preference to catching dams, unless it is not reasonably practical to do so.

Non-prescribed surface water management zone

31. A dam, wall or other structure that collects or diverts water must not be constructed or enlarged in the non-prescribed surface water management zone if that activity would cause the total volume of dam capacity in that zone to exceed the non-prescribed surface water management zone limit of 38,600 ML.

32. For the purposes of principle 31:

a) the non-prescribed surface water management zone is shown in Figure 8.3.

b) the dams and their capacities in the non-prescribed surface water management zone considered to exist prior to 30 June 2009 are given in Topography Water Bodies dataset Number 902 archived by the Department for Environment, Water and Natural Resources for the purposes of Basin Plan compliance.

Sub-catchment limits

33. A dam must not be constructed or enlarged if that activity would cause the total volume of dam capacity in a sub-catchment zone shown in Figure 8.4 to exceed (or further exceed) the sub-catchment dam capacity limit specified in column 7 of Table 8.2 for that zone (where relevant).

34. When the sub-catchment dam capacity limit for a sub-catchment zone has been reached or exceeded, any other
methods of surface or watercourse water diversions or harvest shall not be permitted in that zone, if it may result in a net increase in the volume of water to be collected or diverted.

Property limits

35. A dam must not be constructed or enlarged if that activity would cause the total volume of dam capacity on a property to exceed (or further exceed) the property dam capacity limit for that property.

The property dam capacity limit for a given property is calculated as follows:

\[ 0.3 \times (30\% \text{ of}) \times \text{the area of the property (km}^2\) \times \text{long term average rainfall between the months of May and November (mm)} \times 0.1 \times (10\% \text{ run-off coefficient}) \]

Exception to limits

36. Principles 33, 34 and 35 do not apply where the diversion is solely for the purpose of improving water quality, and/or mitigating flooding, prior to returning the diverted water to the same watercourse or drainage path within three days (or other period as determined by the relevant authority), with loss of water volume only allowed via minimised evaporation and seepage from the water body.

37. Principles 33, 34 and 35 do not apply to authorised structures for the specific purpose of measuring streamflow. For the purpose of this principle, an 'authorised structure' means a structure authorised by the Board, a local government authority or the Minister.

38. Where a dam (the 'original dam') has been washed away, a permit may be granted to construct a replacement dam of the same capacity as the original dam, despite principles 33, 34 and 35, provided that:

a) the capacities of the original and replacement dams are demonstrated to the relevant authority’s satisfaction; and

b) the replacement dam is constructed in the same location as the original dam, or on a part of the same property that is hydrologically continuous with the original dam within the property.

39. New dam capacity may be allowed in addition to the limits set out in principles 33, 34 and 35 to collect additional runoff generated from human-made areas of low permeability (such as hard surfaces created by urban or industrial development), provided that:

a) it can be demonstrated to the relevant authority’s satisfaction by a suitably qualified expert that collecting the additional runoff will not compromise the provision of water requirements of water-dependent ecosystems and existing consumptive users; and

b) pre-development runoff and recharge from the site is returned to the environment:

i. as close as reasonably practical to the natural flow path;

ii. as soon as reasonably practical following precipitation, unless detained on-site for water quality remediation and/or mitigation of flooding, in which case the pre-development runoff and recharge must be returned to the environment within three days of collection or diversion (or other period as determined by the relevant authority);

iii. in a manner that maintains the natural flow regime and aquifer recharge;

iv. in a manner that does not cause significant detrimental impacts to the environment, including but not limited to erosion and detrimental impacts to stream bed and bank stability

40. For the purposes of principle 39:
Flow regime

41. A dam, wall or other structure that collects or diverts surface water flowing over land or water from a watercourse must include a device that ensures any water present at or below the threshold flowrate will:

a) not be collected or diverted; or

b) be bypassed around the dam, wall or other structure, or otherwise returned to the same watercourse or surface water drainage path immediately downstream of the dam, wall or other structure as soon as reasonably practical AND the water will be of an equivalent or better quality.

42. For the purposes of this plan:

a) the threshold flow rate (in litres/second) is calculated by multiplying:

   the unit threshold flow rate (in litres/second/km²), by the area of catchment area (in km²) above the point where the water is diverted from the watercourse or drainage path

b) The unit threshold flow rate is determined as follows:

   i. where the dam, wall or other structure lies within a sub-catchment zone as shown in Figure 8.4, the unit threshold flow rate is that given for that zone in Table 8.2, column 8; or

   ii. in all other cases, the unit threshold flow rate will be determined by the relevant authority.

43. A device that will achieve the outcomes required by principle 41 shall:

a) be designed and constructed to ensure its correct operation is automated and, as far as reasonably practicable, cannot be manually overridden

b) not be obstructed or tampered with in any way

c) be maintained in such a condition that it continues to be effective in meeting principle 41.

Dam design features

44. Dams, walls, or other structures for the collection, storage or diversion of water should, where appropriate and practicable, be designed and constructed to incorporate a range of features to improve water quality and enhance ecological values. Such features include, but are not limited to:

a) an irregular edge

b) a variety of depths to increase habitat for a variety of plants and animals

c) well vegetated edges

d) minimal stock access

e) an upstream silt trap for catching dams (one-tenth the size of the dam)
f) provision for aquatic biota migration where appropriate

g) provision of an island at least 0.5 metres above the maximum dam water level in water at least 0.5 metres deep.

**Dam construction**

45. The erection, construction, enlargement, modification or removal of a dam, wall or other structure to collect or divert water must be undertaken in a manner that minimises the removal or destruction of riparian and in-stream vegetation (e.g. via inundation of area).

46. The erection, construction, enlargement, modification or removal of a dam, wall or other structure to collect or divert water must be undertaken in a manner that prevents silt or sediments from entering the watercourse, including but not limited to the use of erosion and sediment control measures such as diversion drains, revegetation, straw bale barriers, filter fences, sediment traps and detention basins.

47. The erection, construction, enlargement, modification or removal of a dam, wall or other structure to collect or divert water must ensure a minimum 20-year design life in accordance with best practice guidelines (endorsed by the Board) for all watercourse flow conditions up to the 100-year average recurrence interval (0.01 annual exceedance probability) flow rate for the proposed location.

**Dam maintenance**

48. A WAA permit is not required where the desilting of a dam meets all of the following provisions:

a) desilting only involves the removal of unconsolidated material deposited since construction of the dam or material deposited since the dam was previously desilted;

b) desilting does not enlarge the dam capacity or increase the dam wall height beyond their original dimensions;

c) the dam is not on a watercourse with a stream order of 3 or higher;

d) the excavated material is not placed in or near a watercourse, floodplain or lake;

e) the excavated material does not:

i. adversely affect native vegetation;

ii. impede the natural flow of surface water;

iii. re-enter any water body; or

iv. facilitate the spread of pest plants or pathogenic material; and

v. appropriate measures are taken to minimise water quality impacts arising from desilting.

### 8.3.5. Building or structure in a watercourse, lake or floodplain—section 127(5)(b)

The objectives and principles that follow apply specifically to an activity under section 127(5)(b) of the Act, comprising the erection, construction or placement of any building or structure in a watercourse or lake or on the floodplain of a watercourse.

**Objectives**

As per the general objectives outlined in section 8.2.1.
**Principles**

In addition to the general principles outlined in section 8.2.2;

49. Construction and placement of structures—including roads—in a watercourse, floodplain of a watercourse, lake, wetland or area subject to inundation:

   a) shall be designed to minimise the risk of erosion resulting from the construction and location of the structure;

   b) must not adversely affect the provision of environmental water requirements (e.g. by impeding flows);

   c) must not adversely affect the migration of aquatic biota;

   d) must not result in flooding, either upstream or downstream; and

   e) must not be constructed where it, or any debris collected by it, would increase the risk of damage to property or the risk to safety of persons.
50. Structures that impede the flow of water must be designed to bypass or otherwise return water present at or below the threshold flow rate in accordance with principles 41–43.

51. Principle 50 does not apply to structures authorised by the Minister or the relevant authority for the specific purpose of measuring stream flow, or for managing water flow to assist with maintenance, rehabilitation or restoration of locally indigenous water-dependent ecosystems, habitats, communities or species.

8.3.6. Drainage or discharge of water into a watercourse or lake—section 127(5)(c)

The objectives and principles that follow apply specifically to an activity under section 127(5)(c) of the Act, comprising draining or discharging water directly or indirectly into a watercourse or lake.

In addition to the objectives and principles outlined in this section, the requirements of the Environment Protection Act 1993, and associated relevant policies such as the Environment Protection (Water Quality) Policy, should be considered.

Objectives

In addition to the general objectives outlined in section 8.2.1;

L. Manage drainage or discharge water such that contaminants are contained and managed on-site to minimise the conveyance of contaminants into watercourses or lakes.

Principles

In addition to the general principles outlined in section 8.2.2;

52. Drainage or discharge of water into a watercourse or lake must only be undertaken where suitable protective measures have been provided to minimise degradation in the quality of the receiving water. Suitable protective measures may include, but are not limited to:

a) detention basins to regulate the rate, volume and quality of water discharged

b) reuse of drainage or discharge water that occurs under conditions that would not present a risk to public or environmental health

c) litter traps

d) pre-treatment of the water before discharge

e) a requirement that the quality of water drained or discharged into a watercourse lake or floodplain is of a quality similar to or better than that of the receiving water environment

f) discharge into the receiving waters occurs at times of naturally high flow.

53. All treatment devices must be appropriately managed to ensure that they continue to function according to their design, particularly in the removal of accumulated sediment and litter.

54. The rate, location and timing of discharge or drainage of water must occur such that:

a) the geomorphology of the watercourse or lake is protected;

b) water-dependent ecosystems (including their environmental water requirements), and migration of aquatic biota, are not adversely affected;
c) the flow capacity of the watercourse or lake is considered; and

d) there is no increase in the risk of flooding.

55. Storage of any contaminated water must only be undertaken in storage vessels with no natural catchment that are constructed to prevent leakage or overflow of any contaminated water.

Note: Waste stream from desalination processes

The discharge of a waste stream (brine and other chemicals) from desalination processes directly or indirectly to a watercourse or lake would be considered under this section of these policies for the control of WAAs.

8.3.7. Management of obstructions—sections 127(5)(d), (e) and (f)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 127(5)(d): depositing or placing an object or solid material in a watercourse or lake;
- 127(5)(e): obstructing a watercourse or lake in any other manner; and
- 127(5)(f): depositing or placing an object or solid material on the floodplain of a watercourse or near the bank or shore of a lake to control flooding from the watercourse or lake.

Objectives

As per the general objectives outlined in section 8.2.1.

Principles

In addition to the general principles outlined in section 8.2.2;

56. Any object or solid material to be used in the control or prevention of watercourse erosion must be designed with consideration of the local-scale and catchment scale landscape and hydrological processes.

57. The depositing or placing of an object or solid material in a watercourse or lake, or obstructing a watercourse in any other manner, must not:

a) cause or increase erosion;

b) cause detrimental offsite impacts, for example, but not limited to, flooding;

c) adversely affect water-dependent ecosystems; or

d) adversely affect the migration of aquatic biota.

58. Objects or solid materials or other obstructions that impede the flow of water must be designed to bypass or otherwise return water present at or below the threshold flow rate in accordance with principles 41-43.

59. Principle 58 does not apply to structures authorised by the Minister or the relevant authority for the specific purpose of measuring stream flow, or for managing water flow to assist with maintenance, rehabilitation or restoration of locally indigenous water-dependent ecosystems, habitats, communities or species.

60. Depositing or placing an object or solid material on the floodplain of a watercourse, or near the bank or shore of a lake, to control flooding from the watercourse or lake shall not:
a) adversely affect the natural flow of a watercourse
b) increase the risk of flooding (upstream or downstream), or
c) cause or increase erosion.

61. Depositing or placing an object or solid material on the floodplain of a watercourse, or near the bank or shore of a lake, to control flooding from the watercourse or lake should:
   a) provide for the needs of ecosystem processes (including the migration of aquatic biota); and
   b) minimise the impact or risk of flooding on human communities.

8.3.8. Management of vegetation removal and excavation—sections 127(5)(g) and (h)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 127(5)(g): destroying vegetation growing in a watercourse or lake or growing on the floodplain of a watercourse; and
- 127(5)(h): excavating or removing rock, sand or soil from—
  (iv) a watercourse or lake or the floodplain of a watercourse; or
  (v) an area near to the banks of a lake so as to damage, or create the likelihood of damage to, the banks of the lake.

Note: Native vegetation controls

In most cases, destruction of, damage to and removal of native vegetation requires approval under the South Australian Native Vegetation Act 1991. Issuing a water affecting activity permit does not negate the need to comply with the provisions of the Native Vegetation Act 1991.

Objectives

As per the general objectives outlined in section 8.2.1.

Principles

In addition to the general principles outlined in section 8.2.2;

62. Alteration to the alignment of a watercourse, or destruction of vegetation within a watercourse, lake or floodplain shall only occur where it is for the protection of existing infrastructure or rehabilitation of a watercourse, lake or floodplain, and the activity does not result in any of the following:
   a) increased erosion
   b) increased flooding
   c) bed and bank instability
   d) downstream sedimentation
   e) destruction of significant habitat for native fauna
f) decline in water quality

g) alteration to the natural flow regime of a watercourse.

63. The excavation and removal of rock, sand or soil, or destruction of vegetation within a watercourse, lake or floodplain, must not adversely affect either:

a) the ecology of a watercourse, lake or floodplain, or

b) migration of aquatic biota.

8.3.9. Use of imported water and effluent—sections 127(5)(i) and (j)

The objectives and principles that follow apply specifically to an activity under the following sections of the Act:

- 127(5)(i): using water in the course of carrying on a business at a rate that exceeds one megalitre per hectare per year, or one megalitre per year for non-irrigated activities, if the water has been brought into the region by means of a pipe or other channel (‘imported water’); and

- 127(5)(j): using effluent in the course of carrying on a business at a rate that exceeds one megalitre per hectare per year, or one megalitre per year for non-irrigated activities.

In addition to the objectives and principles outlined in this section, the requirements of the Environment Protection Act 1993, and associated relevant policies such as the Environment Protection (Water Quality) Policy, should be considered where relevant.

Objectives

In addition to the general objectives outlined in section 8.2.1;

M. Ensure that effluent is used in such a manner that risks to public health are minimised.

N. Protect the productive capacity of the land.

Principles

In addition to the general principles outlined in section 8.2.2;

64. A permit is not required for the use of imported water and effluent where the water or effluent is used on the land at a rate of up to one megalitre per hectare per year, or up to one megalitre per year for non-irrigated activities.

65. A permit is not required where a person or business undertaking a WAA is legally obligated to comply with a mandatory code of practice for the use of effluent that is consistent with the principles in this plan (for example, but not limited to, the EPA Code of Practice for Milking Shed Effluent 2003 or its successors).

66. The use of effluent must be undertaken in a manner that minimises risks to human health.

67. The use of imported water or effluent must not cause a rise in underground water levels that would adversely affect land, public and private assets, other water resources or natural resources and their beneficial uses.

68. The use of imported water or effluent must not adversely affect the natural flow regime or ambient quality of the receiving waters.

69. The use of imported water or effluent must not adversely affect the productive capacity of the land by impacts including, but not limited to, increasing salinity, water logging, sodicity, toxicity, nutrient concentrations or watertables.
70. The use of imported water or effluent must not adversely affect the condition, biodiversity or extent of a water-dependent ecosystem.

71. Any dams constructed for the storage of chlorine-treated imported water or effluent must be constructed so as to prevent:
   a) leakage from the dam through the soil
   b) overflows from the dam onto the surface of the land surrounding the dam
   c) overflow from the dam into a watercourse or lake.

72. Any dams constructed for the storage of chlorine-treated imported water or effluent must not be located in a watercourse, floodplain, lake, or drainage path.

73. The use of imported water or effluent will not be permitted where its use will adversely affect the environment.
Figure 8.1: Noora Groundwater Management Area – Zone 11A North
Figure 8.2: The South Australian Non-Prescribed Areas surface water sustainable diversion limit (SDL) resource unit, a planning unit within the Basin Plan's South Australian Murray Region water resource plan area.
Figure 8.3: Non-prescribed surface water management zone map
Figure 8.4: Sub-catchment zone map
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<th>Sub-catchment zone area (ha)</th>
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<th>30% of May-November runoff (mm)</th>
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<td>30% of May-November runoff (mm)</td>
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<td>Unit threshold flow rate (L/s/km²)</td>
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</table>
8.4 Water affecting activity definitions

Terms that are defined in the Act have the meaning as given by the Act. Definitions given for such terms in this section are provided for information, and the definition given in the Act takes precedence in the event of inconsistency.

**Allotment:** has the same meaning as in the *Real Property Act 1886.*

**Ambient underground water:** in relation to draining or discharging water into a well, means the underground water that occurs at the proposed site of injection in the relevant aquifer, prior to the commencement of the proposed drainage or discharge of water into a well.

**Annual exceedance probability (AEP):** the probability that a given flow or rainfall event will be exceeded in any one year.

**Average recurrence interval (ARI):** the average value of the periods between exceedances of a given flow or rainfall event.

**Catching dam:** a dam, wall or other structure placed on or constructed across a watercourse or drainage path for the purpose of holding back and storing the natural flow of that watercourse or the surface water flowing along that drainage path.

**Catchment area:** the catchment area of a particular point means all of the land, determined by natural topographic features, from which runoff has the potential to naturally drain to that point.

**Community Wastewater Management System (CWMS):** an effluent collection, treatment and disposal/reuse system for a community.

**Contaminants (and indicators of contaminants):** may include, but are not limited to, nutrients, metals, biological organisms (for example, *Escherichia coli*), temperature, dissolved oxygen, colour, turbidity, suspended sediments, leachate, hydrocarbons, and litter.

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Sub-catchment zone code</th>
<th>Sub-catchment zone area (km²)</th>
<th>Average annual rainfall (mm)</th>
<th>Average May-November rainfall (mm)</th>
<th>Average May-November runoff</th>
<th>10% of May-November runoff (mm)</th>
<th>30% of May-November runoff (mm)</th>
<th>Sub-catchment dam capacity limit (ML)</th>
<th>Unit threshold flow rate (L/s/km²)</th>
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<td>46</td>
<td>14</td>
<td>442</td>
<td>7</td>
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</table>
Desilting: the removal of unconsolidated material deposited in a dam since construction, or material deposited since the dam was previously desilted.

Detention basin: a pond or basin constructed for the temporary detention of water to provide time for suspended sediments and other heavy pollutants to settle before discharge into a watercourse, lake, or other water storage, and/or to regulate the rate and volume of water discharged.

Domestic wastewater: has the same meaning as in section 3(1) of the Act, meaning water used in the disposal of human waste, and water used for personal washing, and water used for washing clothes or dishes, and water used in a swimming pool.

Drainage path: the path that surface water naturally flows along over land.

Effluent: has the same meaning as in section 3(1) of the Act, meaning domestic wastewater or industrial wastewater.

Environmental water requirements: those water requirements that must be met in order to sustain the ecological values of ecosystems that depend on the water resource, including their processes and biodiversity, at a low level of risk.

Geomorphic characteristics: features of a landform or landscape including, but not limited to, bed and banks of a watercourse, floodplain of a watercourse or lake, cliffs, soils, rocks and other mineral forms.

Groundwater access trench (GAT): shallow trenches excavated to allow direct access to underground water.

Headworks: any assembly on top of a well and located between the well casing and the water delivery system.

Holding dam: a dam that is not constructed across a watercourse and is primarily designed to hold water from a source other than the catchment area of the dam. Other water sources may include, but are not limited to, underground water and water diverted or pumped from a watercourse or drainage path that is not in the catchment area of the dam. Holding dams may capture a limited volume of surface water from the catchment area of the dam (up to 5% of its total capacity).

Hydrologically continuous: two or more points in the landscape directly connected by the same drainage path or watercourse.

Industrial wastewater: has the same meaning as in section 3(1) of the Act, meaning water (not being domestic wastewater) that has been used in the course of carrying on a business (including water used in the watering or irrigation of plants) that has been allowed to run to waste or has been disposed of or has been collected for disposal.

Non-prescribed surface water management zone: the area identified as the non-prescribed surface water management zone in Figure 8.3

Property: an allotment or contiguous allotments owned or occupied by the same person, persons or body, and operated as a single unit. Allotments will be considered to be contiguous if they abut at any point, or are separated only by a road, street, lane, footway, court, alley, railway, thoroughfare, easement, right-of-way, watercourse, channel or a reserve or similar open space.

**Stream order**: a method of classifying the size of a part of a watercourse, based on the hierarchy of connecting watercourse segments. The Strahler stream ordering system is used in this plan. The most upstream part of a watercourse is a first order stream. Two first order watercourses join together to become a second order watercourse. Two second order watercourses join together to become a third order watercourse and so on. For the purposes of determining stream order for this plan, the network of watercourses is defined in the basis of current 1:50,000 topographic maps produced by the State Government.

**Structure (in relation to a body of water or watercourse)**: something built or constructed, including, but not limited to, a ford, causeway, culvert, fence, jetty, boat mooring, weir or retaining wall.

**Sub-catchment zone**: a zone defining the area within which the total allowable dam volume is limited. The zone boundary is based upon the sub-catchment boundary, with adjustments to align the sub-catchment boundary to the nearest practicable allotment boundaries. These zones are shown in Figure 8.4.

**Threshold flow rate**: the flow rate at or below which water must not be taken, or if taken is to be returned to the same watercourse or drainage path immediately downstream of the structure, as soon as reasonably practical (in accordance with principles 41, 50 and 58). The value of the threshold flow rate for a given location is calculated in accordance with principle 42.

**Transmissivity**: a parameter indicating the ease of underground water flow through a metre width of aquifer section.

**Unit threshold flow rate**: used to determine the threshold flow rate in accordance with principle 42. The unit threshold flow rate is determined as follows:

a) where the dam, wall or other structure lies within a sub-catchment zone as shown in Figure 8.4, the unit threshold flow rate is that given for that zone in Table 8.2, column 8; or

b) in all other cases, the unit threshold flow rate will be determined by the relevant authority.

**Water-dependent ecosystems**: those parts of the environment, the species composition and natural ecological processes, that are determined by the permanent or temporary presence of flowing or standing water, above or below ground. The in-stream areas of rivers, riparian vegetation, springs, wetlands, floodplains, estuaries, lakes and aquifer ecosystems are all water-dependent ecosystems.
Natural Resources Centres

Berri
PO Box 1374
2 Wade Street
Berri SA 5343
08 8580 1800

Murray Bridge
PO Box 2343
110A Mannum Road
Murray Bridge SA 5253
08 8532 9100