



Goulburn Broken

STRATEGIC
DIRECTIONS
STATEMENT

2022



Integrated Water
Management Forums



Environment,
Land, Water
and Planning

ACKNOWLEDGEMENTS

The Goulburn Broken Integrated Water Management Forum proudly acknowledges Victoria's Aboriginal communities and their rich culture and pays its respects to their Elders past and present. The forum also recognises the intrinsic connection of Traditional Owners to Country and acknowledges their contribution to the management of land, water and resources. We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches us. We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

This Strategic Directions Statement has been developed by the Goulburn Broken Integrated Water Management Forum, which includes the following organisations:



This publication has been endorsed by all Goulburn Broken IWM Forum partners with the exception of those who have abstained. All partners listed in this publication were engaged in its development and are committed as project delivery partners. Each Forum partner also acknowledges their mutual commitment to increase the integration of Traditional Owner priorities and values into future opportunities for integrated water management in the Goulburn Broken region.

The new Department of Energy, Environment and Climate Action (DEECA) was established on 1 January 2023. This department includes the previous functions of the Department of Environment, Land, Water and Planning, excluding the Planning portfolio and those areas supporting it which are now part of the new Department of Transport and Planning.

© The State of Victoria Department of Energy, Environment and Climate Action January 2023.

Creative Commons

This work is licensed under a Creative Commons Attribution 4.0 International licence, visit the Creative Commons website (<http://creativecommons.org/licenses/by/4.0/>). You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, and the Victorian Government and Department logos.

ISBN 978-1-76176-044-0 (print)
ISBN 978-1-76176-041-9 (pdf/online/MS Word)

Disclaimer

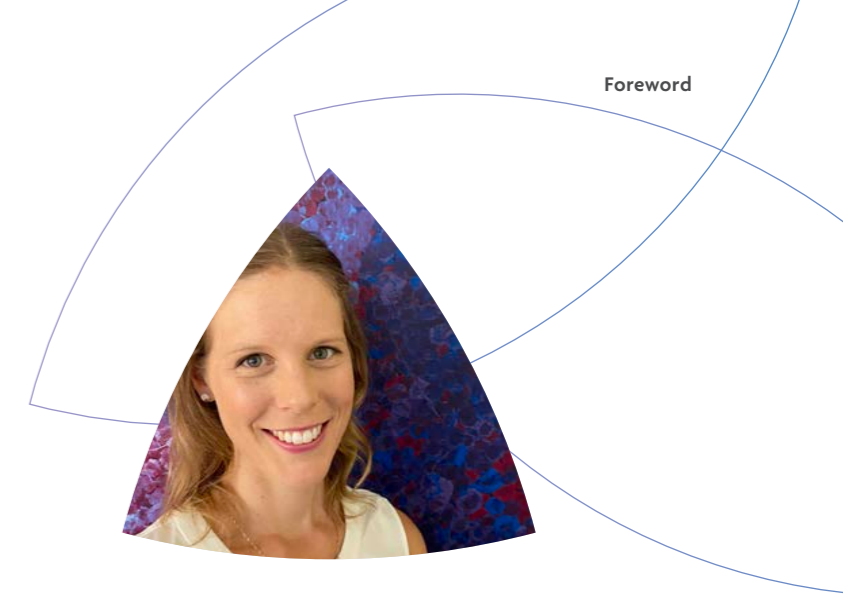
This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

To receive this document in an alternative format, phone the Customer Service Centre on 136 186, email customer.service@deeca.vic.gov.au, or contact National Relay Service on 133 677. Available at DEECA website www.deeca.vic.gov.au. This document is also available on the internet at www.delwp.vic.gov.au.

Cover photo: Victoria Park Lake. Credit: Greater Shepparton City Council

TABLE OF CONTENTS

Foreword	1	Implementing Kilmore Creek Landscape Master Plan	23
Executive summary	2	Sunday and Dry Creeks Landscape Master Plan	24
Vision.....	2	IWM Plans for Kilmore Development Areas ...	24
Building resilience to challenges.....	2	Kilmore Recycled Water Scheme	25
IWM opportunities.....	3	Corop Lakes Complex Integrated Water Project	26
Better together: integrating water management in Victoria	6	Planning for a Green Avenel	27
What is integrated water management?.....	7	Greening Euroa – Stage 3	28
How are we delivering IWM state-wide?	8	Horseshoe Lagoon Master Plan	28
Strategic outcomes	9	Eastbank Lake Project – Gross Pollutant Trap Options Analysis	29
Strategic Directions Statement – how IWM is happening in the region.....	10	Recycled Water for Kilmore's Recreation Areas	30
Water in the Goulburn Broken region	11	Enabling IWM with Developers	30
A changing region.....	13	Nagambie Green Spaces	31
Water issues are more prominent and complex	13	Gough's Bay Water-Sensitive Town Plan	31
Urban population growth and land use is changing.....	13	Baddaginnie Wastewater Improvement	32
Biodiversity under pressure.....	13	Revitalising Ford Creek – IWM Icon Project	32
Agriculture is changing.....	13	Greater Shepparton City Council Area IWM Plan	33
Progress so far	14	Broken Creek Master Plan	34
Water reviving culture in Horseshoe Lagoon ..	16		
Helping small towns make big decisions.....	18		
IWM opportunities.....	20		
Thornton Stormwater Upgrade	22		



FOREWORD

We are a region committed to the health and prosperity of our communities.

Our region is vast and diverse. It spans from the fringes of Melbourne in the south to the irrigation districts of the north and west and the foothills of the alpine region in the east. The Goulburn Broken region is situated in Yorta Yorta Country to the north and Taungurung Country to the south, encompassing natural assets that hold significant cultural and ecological value. The region also supports a wide variety of land uses and industries, including agriculture, tourism and recreation.

Our original Strategic Directions Statement (SDS) was released in 2018. Built off the back of strong regional partnerships, the genuine enthusiasm and commitment of our forum members to supporting the health and prosperity of our regional communities remains as strong. Our achievements to date, including projects such as 'Greening Euroa', have improved the resilience of our towns and we've identified further opportunities to explore integrated water management (IWM) – many of which are included in this revised SDS.

The forum has also provided a platform for Traditional Owners to voice their connection to Country and water, helping to achieve outcomes such as the revitalisation of Horseshoe Lagoon, which is an area of significant cultural value to the Taungurung people.

Our region is not alone in dealing with the impacts of the COVID-19 pandemic. While there have been economic difficulties and a need to adapt, it has brought about a new awareness of what really matters to people; rallying community spirit to strengthen support of our local communities, build our local capacity and resilience, and reconnect with our natural assets that are, quite literally, at our doorstep.

The last few years have also seen an unprecedented level of growth across our regional towns. Whether this is a direct impact of the pandemic, or people are simply placing more value on the lifestyle benefits of regional living, we are nonetheless seeing new challenges in how we, as a region, can support sustainable development in our towns – particularly in relation to water.

While each town faces its own unique challenges, our region is seeing the impacts of increased climate variability, drought and more-frequent bushfires and flooding. The role that water can play to improve the resilience of towns is becoming increasingly evident; and how we manage water in a drying climate is a key focus of many regional groups and strategies. IWM is one piece of this puzzle, and forms part of the wider efforts to address climate change and water security.

The combined challenges of a drying climate, development pressures and sustainable water management make collaboration more important than ever, to identify innovative solutions for water resources that align with Traditional Owner visions for Country. Through our past projects, we have built ourselves a strong foundation from which to pursue these opportunities, and I acknowledge the efforts of all those that have helped deliver on these key outcomes. I have every confidence that we will continue to meet these challenges with the same level of commitment and passion that we have in the past.

Regan Flanagan

Chair, Goulburn Broken IWM Forum

EXECUTIVE SUMMARY

The *Integrated Water Management Framework for Victoria* (2017) is designed to help regional stakeholders work together, ensuring the water cycle contributes to the liveability of towns and cities in Victoria, with communities at the centre of decision making.

The Goulburn Broken Integrated Water Management Forum is one of 10 regional integrated water management (IWM) forums across Victoria that are realising the local implementation of the framework.

Vision

The forum's vision is to work together through sustainable water management to enhance urban landscapes and maximise amenity, environment, and economic outcomes for our communities.

The forum brings together regional leaders in sustainable water management, representing Traditional Owners, local governments, statutory authorities and government agencies.

This Strategic Directions Statement (SDS) articulates the collaborative intent and shared agreement of all stakeholders involved in the forum. It describes the water security challenges and opportunities in the region, sets the strategic direction for the next three to five years, and outlines the ways in which IWM is and will be applied through joint projects that connect water back into the water cycle. Just as IWM is an iterative process, this SDS also provides the first update on progress since the initial SDS (2018) and includes case studies exemplifying how IWM is happening in the region.

This SDS has been developed to complement the region's Sustainable Water Strategy, Goulburn Valley Water's Urban Water Strategy, the Goulburn Broken Regional Catchment Strategy, and other strategic plans of forum member organisations.

Building resilience to challenges

The forums experience since establishment has highlighted the need to focus IWM efforts on key challenges of:

- climate change, which is already impacting the region through extreme weather, reduced rainfall and hotter temperatures
- population growth, with more people moving to and visiting the Goulburn Broken region
- changing landscapes that are seeing declines in biodiversity and shifts in land use.

The forums IWM opportunities have been identified and designed to meet these challenges - by seeing them as opportunities for positive change.

Victoria Park Lake, Shepparton. Credit: Shepparton Shire Council



Figure 1: Locations of IWM opportunities across the Goulburn Broken region. Locations are approximate or representative.

IWM opportunities

Eighteen opportunities have been identified across the region, the locations of which are shown in Figure 1. The forum has identified regional themes that embody the goals and benefits of these opportunities.

Sustainable development

1. Thornton Stormwater Upgrade
2. Implementing Kilmore Creek Landscape Master Plan
3. Sunday and Dry Creeks Landscape Master Plan
4. IWM Plans for Kilmore Development Areas
5. Kilmore Recycled Water Scheme

Green spaces and natural resources

6. Corop Lakes Complex Integrated Water Project
7. Planning for a Green Avenel

8. Greening Euroa – Stage 3
9. Horseshoe Lagoon Master Plan
10. Eastbank Lake Project – Gross Pollutant Trap Options Analysis
11. Recycled Water for Kilmore's Recreation Area
12. Enabling IWM with Developers
13. Nagambie Green Spaces

Small town domestic wastewater

14. Gough's Bay Water-Sensitive Town Plan
15. Baddaginnie Wastewater Improvement

Resilient adaptable towns

16. Revitalising Ford Creek – IWM Icon Project
17. Greater Shepparton City Council Area IWM Plan
18. Broken Creek Master Plan

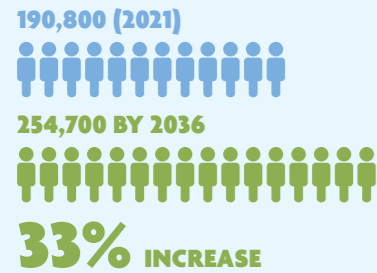
Goulburn Broken Integrated Water Management Forum

Strategic Directions Statement 2022 summary

We work collaboratively with partners across the water cycle to find new ways to share resources and conserve water for multiple community and environmental benefits.

We work to meet the water needs of a changing region.

POPULATION GROWTH



CHANGE IN RAINFALL BY 2040
DECREASE BY 13.6%
WITH MORE-INTENSE RAINFALL IN SOME YEARS.



TEMPERATURE
AN INCREASE OF 0.7-1.6°C
IN GOULBURN BROKEN BY 2040*

* Population data: source: Victoria In Future 2019
 * Temperature and rainfall range are highest and lowest predictions for Campaspe and Loddon catchments. Predictions represent the annual average relative to the year 1995. Source: Guidelines for Assessing the Impact of Climate Change on Water Availability in Victoria, November 2020.

1. Thornton Stormwater Upgrade

Directing stormwater and greywater through constructed wetlands to purify the water before it enters the Goulburn River.

2. Implementing Kilmore Creek Landscape Master Plan

Implementing the master plan, which highlights the importance of the Kilmore Creek Precinct, and presents a vision for it to become the primary recreational open space and environmental corridor in Kilmore.

3. Sunday and Dry Creeks Landscape Master Plan

Improving recreational access and the ecological function of Sunday and Dry Creeks.

4. IWM Plans for Kilmore Development Areas

Creating a framework to embrace natural waterways and implement innovative water efficiency within new developments.

5. Kilmore Recycled Water Scheme

Supplying recycled water from the Kilmore Wastewater Management Facility to irrigate public recreational areas and the Kilmore Racing Club.

6. Corop Lakes Complex Integrated Water Project

Increasing the resilience of the Corop region through enhancing the economic, environmental and cultural values of the Corop Lakes Complex.

7. Planning for a Green Avenel

Securing continued liveability and sustainability through planning for green blue spaces, passive recreation and diverse water supplies in a growing township.

8. Greening Euroa – Stage 3

Improving drought resilience and enhancing liveability by keeping community spaces green with recycled water.

9. Horseshoe Lagoon Master Plan

Creating a plan to preserve the ecological, recreational, and cultural values of Horseshoe Lagoon.

10. Eastbank Lake Project – Gross Pollutant Trap Options Analysis

Preventing pollution from entering the Goulburn River for healthier waterways and improved amenity in Shepparton.

11. Recycled Water for Kilmore's Recreation Areas

Reducing reliance on potable water by irrigating recreation areas with recycled water.

12. Enabling IWM with Developers

Developing a framework for working with property developers to facilitate opportunities for IWM projects – in collaboration with the Great South Coast IWM Forum.

13. Nagambie Green Spaces

Ensuring the township has green and liveable open spaces and Nagambie Lake has improved water quality - even during significant dry periods.

14. Gough's Bay Water-Sensitive Town Plan

Realising the town's vision to be a best-practice, self-contained, water-sensitive town that will serve as a model for other small towns in the region.

15. Baddaginnie Wastewater Improvement

Improving wastewater management systems in Baddaginnie.

16. Revitalising Ford Creek – IWM Icon Project

Developing Ford Creek into a focal point and central spine for connectivity throughout the township, while preventing local flooding.

17. Greater Shepparton City Council Area IWM Plan

A single overarching plan to address water management, green spaces and climate change resilience.

18. Broken Creek Master Plan

Enhancing recreational and community-based connections with Broken Creek by creating walking tracks, bridges and waterfront community spaces.



BETTER TOGETHER: INTEGRATING WATER MANAGEMENT IN VICTORIA

The first water custodians

The clans of the First Nations have been living in balance with the natural environment in Victoria, practising their culture, caring for Country and waterways, and maintaining sophisticated water management systems for tens of thousands of years.

More than 6,000 years ago, the Gunditjmara worked with the waterways along the Budj Bim lava flow in south-western Victoria, engineering an extensive and sophisticated aquaculture system to trap, store and harvest 'kooyang' – short-finned eel. That system still lives and operates, and the Budj Bim Cultural Landscape is now an UNESCO World Heritage List site.

In the Goulburn Broken region, people of the Yorta Yorta Nation and the Taungurung have managed and cared for Country for tens of thousands of years. Their Ancestors developed management strategies that have been handed down to be used today. For the Taungurung, the 'First People of the rivers and mountains', 'Our waterways are the lifeblood of Country; they are the blood and tears of our ancestors.' In the words of Yorta Yorta people, 'We are freshwater people that maintained and occupied a landscape containing floodplains and grasslands that continue to provide an abundance of natural resources that are easily accessible throughout the seasons.' The forum recognises the diversity of their cultures and the deep connections they have with Victoria's lands and waters, and values partnerships with them for the health of people and Country.

Pressures emerge and evolve

The current water supplies and liveability of towns and cities owe much to the collaborative work done to date by water corporations, local and state government, communities and catchment management authorities. We now have opportunities for transformative change, unlocked by stronger than expected population growth and the community's willingness to adapt to the threats of climate change and natural disasters. We also have the benefits of experience and established relationships. Together, we can make decisions today that we will celebrate in the future.

Integrated water management considers all parts of the water cycle as an integrated system to optimise the environmental, cultural, social and economic outcomes for our communities.

Working together

While everyone has a responsibility to conserve and protect water, there are a number of key groups charged with making decisions about water within each region. These groups include:

- Traditional Owner groups, who have a deep knowledge of and connection to the region's waterways, other water resources and Country
- water corporations, which manage the water storage, water supply and wastewater services
- local governments, which manage surface water drainage, protect local waters from degradation and pollution, oversee onsite domestic wastewater planning, regulate local development, and undertake strategic planning for future growth
- catchment management authorities, who, through partnerships, improve the resilience of the catchment's people, biodiversity and water resources.

IWM is an approach that can be applied at multiple scales from water planning at the local park, right up to the whole of catchment. IWM can connect climate change adaptation, planning and open space, water security and other strategies, so that collaborators can add value to each other's projects.

The decisions these groups make individually, can have significant impacts on the quality and availability of the water for others in the catchment and further downstream. So, it makes sense they collaborate towards common goals to maximise water saving and re-use and share the benefits (Figure 2).

IWM is an approach that can be applied at multiple scales from water planning at the local park, right up to the whole of catchment. IWM can connect climate change adaptation, planning and open space, water security and other strategies, so that collaborators can add value to each other's projects.

What is integrated water management?

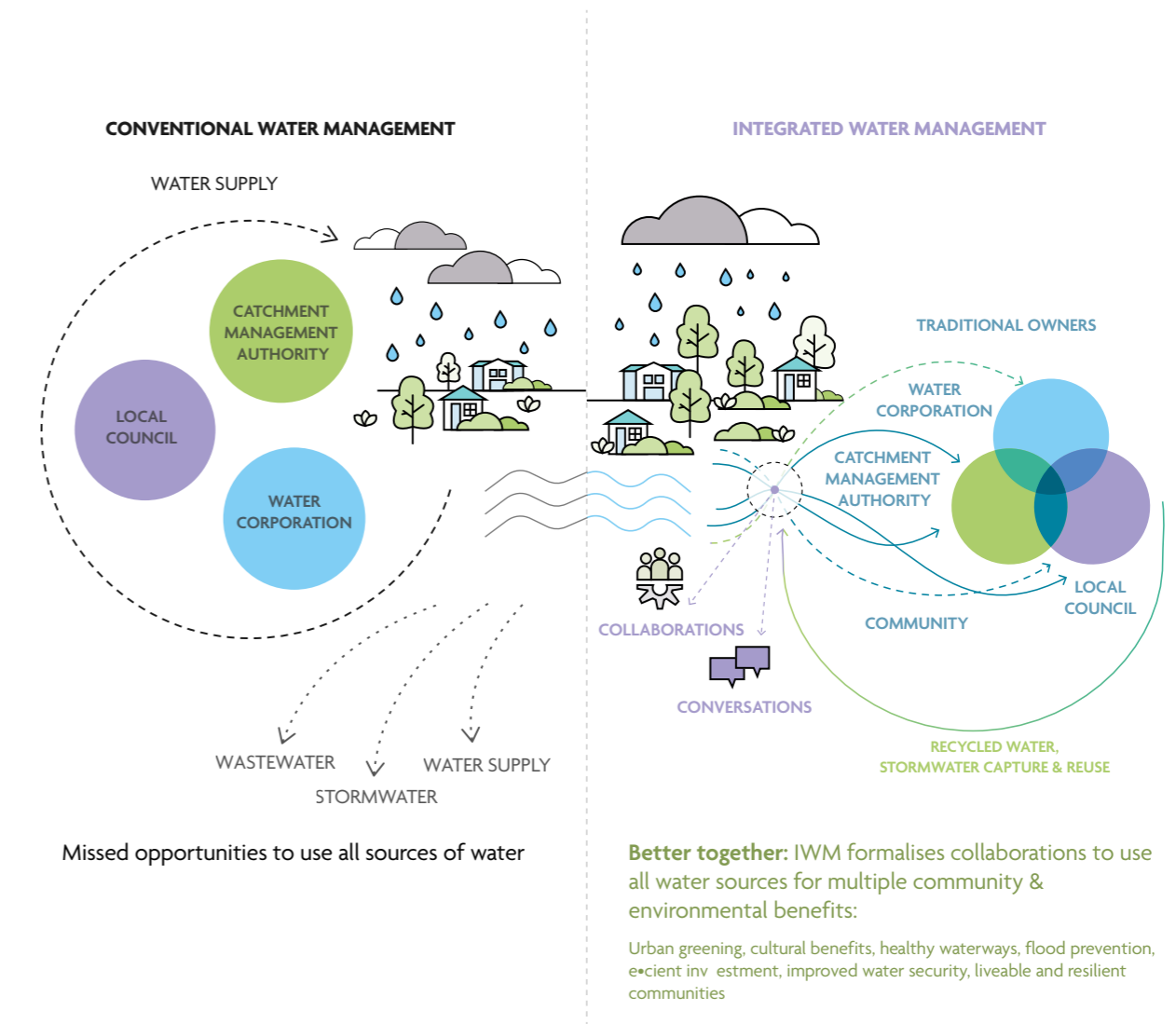


Figure 2: How does IWM work? Conventional water management saw a more siloed approach to water management, with a single supply source and two discharge systems to move stormwater and wastewater away as quickly as possible, resulting in missed opportunities to use all sources of water. The IWM approach brings water managers together to plan and deliver new opportunities to provide broader benefits to the community. Listening to and consulting with Victorian communities about how they want water managed is critical to informing IWM decision making. Communities are directly consulted on IWM plans and through existing catchment management authority, water corporation and local government strategies.

1 North Central Regional Catchment Strategy www.northcentral.rcs.vic.gov.au/our-region/traditional-owners-of-the-region

How are we delivering IWM state-wide?

To facilitate IWM across Victoria, the Victorian Government's Department of Environment, Land, Water and Planning (DELWP) supported the establishment of IWM forums across 10 regions of Victoria (Figure 3). These forums bring together leaders of the local water sector to explore, prioritise and oversee the development of local IWM opportunities. Prioritised opportunities are managed and implemented by dedicated working groups and are captured within individual IWM plans. Where appropriate, the forums involve other organisations and groups that are not part of the water sector but have direct or indirect interests in water management and land use planning, such as community and Indigenous groups, planning authorities, Department of Transport, developers, educational institutions, or large landholders.

Being collaborative, IWM builds on existing partnerships and planning processes, and aims to break down silos between independently operating water decision-makers – encouraging forum members to consider the water cycle of their own service delivery, and the interdependencies or overlaps with other members (Figure 2). Forum members consider waters in rivers, streams and bays, wastewater, drinking water, stormwater, and water treatment processes.

While collaboration can take more time and effort, working together achieves better outcomes for the environment, society, and the economy by finding mutually beneficial ways to share water, assets, and costs.

Tree planting, Kilmore. Credit: Goulburn Valley Water



Figure 3 : IWM forum regions of Victoria, which are based around water corporation boundaries

Strategic outcomes

The *Integrated Water Management Framework for Victoria* (2017) proposed several strategic water-related outcomes that will deliver on the vision in the State water plan, *Water for Victoria* (2016), to 'build resilient and liveable cities and towns'. These strategic outcomes provide a way to identify the multiple economic, social and environmental benefits that can come from a single initiative. The original framework included five such strategic outcomes that have since been expanded to seven. The identification of strategic outcomes will continue to evolve as the water management context changes and the sector innovates.

Proposed project opportunities are assessed and prioritised against how well and how many of these strategic outcomes they meet.

To find out more about how Victoria is applying IWM through the *Integrated Water Management Framework for Victoria* (2017), visit: www.water.vic.gov.au

The strategic outcomes are:

-  **safe, secure and affordable supplies in a changing future** – indicated by the amount of water conserved or alternative water volume supplied to meet an identified demand.
-  **effective and affordable wastewater systems** – ensuring environmental and public health standards are met, while maximising resource recovery.
-  **manage flood risks** – resilience to existing and future flood risk.
-  **healthy and valued waterways and waterbodies** – indicated by the ecological health of riparian areas, hydrology and water quality.
-  **healthy and valued landscapes** – maximising the connectivity, accessibility, greening and vegetation, cooling, aesthetic and/or recreational values of landscapes.
-  **Traditional Owner and community values reflected in place-based planning** – ensuring that different communities are considered and included in planning and design and provided with water-systems literacy to enable their involvement.
-  **jobs, economic opportunity and innovation** – recognising that water management is an integral part of economic growth.

Low-emission solutions

The forum will also consider IWM opportunities that minimise the release of greenhouse gas emissions by reducing energy consumption.

Strategic Directions Statement – how IWM is happening in the region

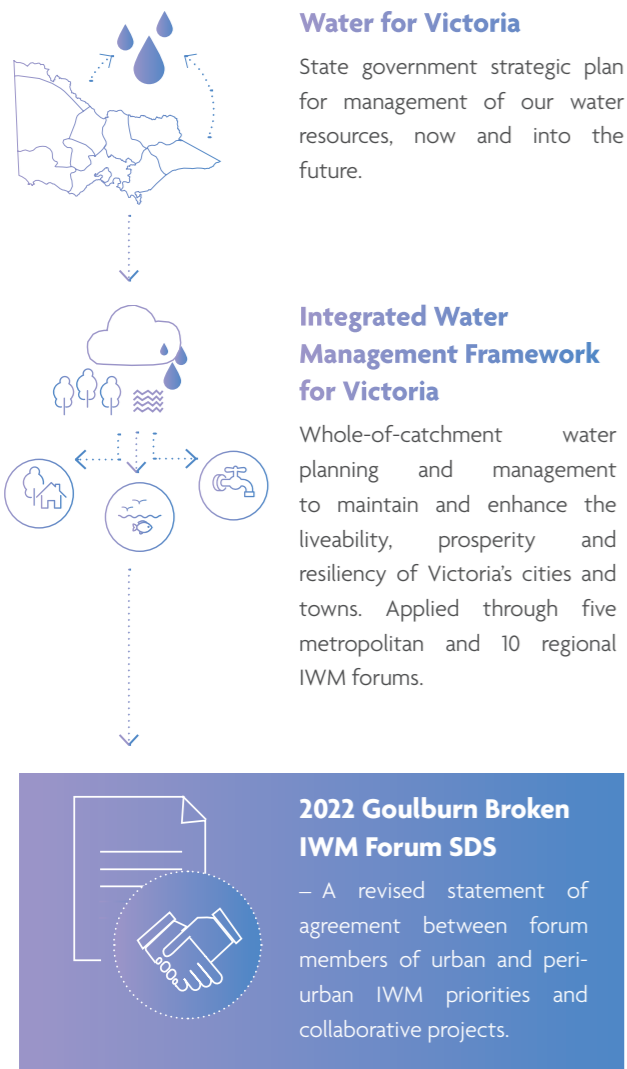
This SDS articulates the collaborative intent and shared agreement of all stakeholders involved in the forum. It describes the water security challenges and opportunities in the region, sets the strategic direction for the next few years, and outlines the 'best endeavours' or ways in which IWM is and will be applied through opportunities that are proposed, in-progress or completed in the region.

Figure 4 : The SDS and related water policies, strategies and plans of the region.

This is the first update to the Goulburn Broken region's SDS produced in 2018, and includes:

- an update on progress to date
- case studies illustrating IWM in the region
- details of planned and potential opportunities designed to meet the strategic outcomes and key challenges over the next three to five years.

This SDS has been developed to complement the other plans and strategies that apply to the region for water, climate change, First Nations' rights and catchment management (Figure 4).



Related plans and strategies in place in the region

- Goulburn Valley Water Urban Water Strategy**
A detailed 50-year forecast of water demands for local communities, along with supply options to meet these demands.
- Caring for Country Plans: Yorta Yorta Whole-of-Country Plan for 2021-2030; Taungurung Country Plan**
Guiding and promoting awareness, investment and rights of Indigenous people and culture, working together now and for future benefits.
- Northern Region Sustainable Water Strategy 2009**
Long-term plans and statutory processes for state-wide water resource planning to secure the water future of Victoria's regions.
- Goulburn Broken Regional Catchment Strategy 2021-27**
Guides actions to improve and protect the Catchment's natural resources (water, land, biodiversity). Looking after these precious natural resources underpins the social, cultural and economic wellbeing of the diverse communities that make up the Goulburn Broken Catchment.
- Hume Regional Climate Change Adaptation Strategy**
Five-year practical strategy developed by the community to address the unique challenges and opportunities that climate change brings to the region and guide local action.
- Local government plans and strategies**
Various strategies, plans, guidelines and other documents that have connections to the water cycle. Examples include open space plans, local climate change adaptation strategies, and natural disaster management plans.

WATER IN THE GOULBURN BROKEN REGION

Covering around 10.5% of Victoria, the 21 million-hectare Goulburn Broken region stretches from its southern boundary near the outskirts of Melbourne, north to the Murray River at the border with New South Wales, east to Mt Buller, and west to the Mt Camel Range.

The region is located within the Murray-Darling Basin, encompassing the valleys of the Goulburn and Broken Rivers and part of the Murray River Valley. Many regard it as 'the food bowl of Victoria', with agricultural products including stone fruit, dairy products and fine wines. Its national and state parks are home to such iconic species as the tuan (phascogale), greater glider, powerful owl and mountain pygmy possum and attract many visitors. And its waterways and lakes, such as Eildon and Nagambie, are prime recreational areas.

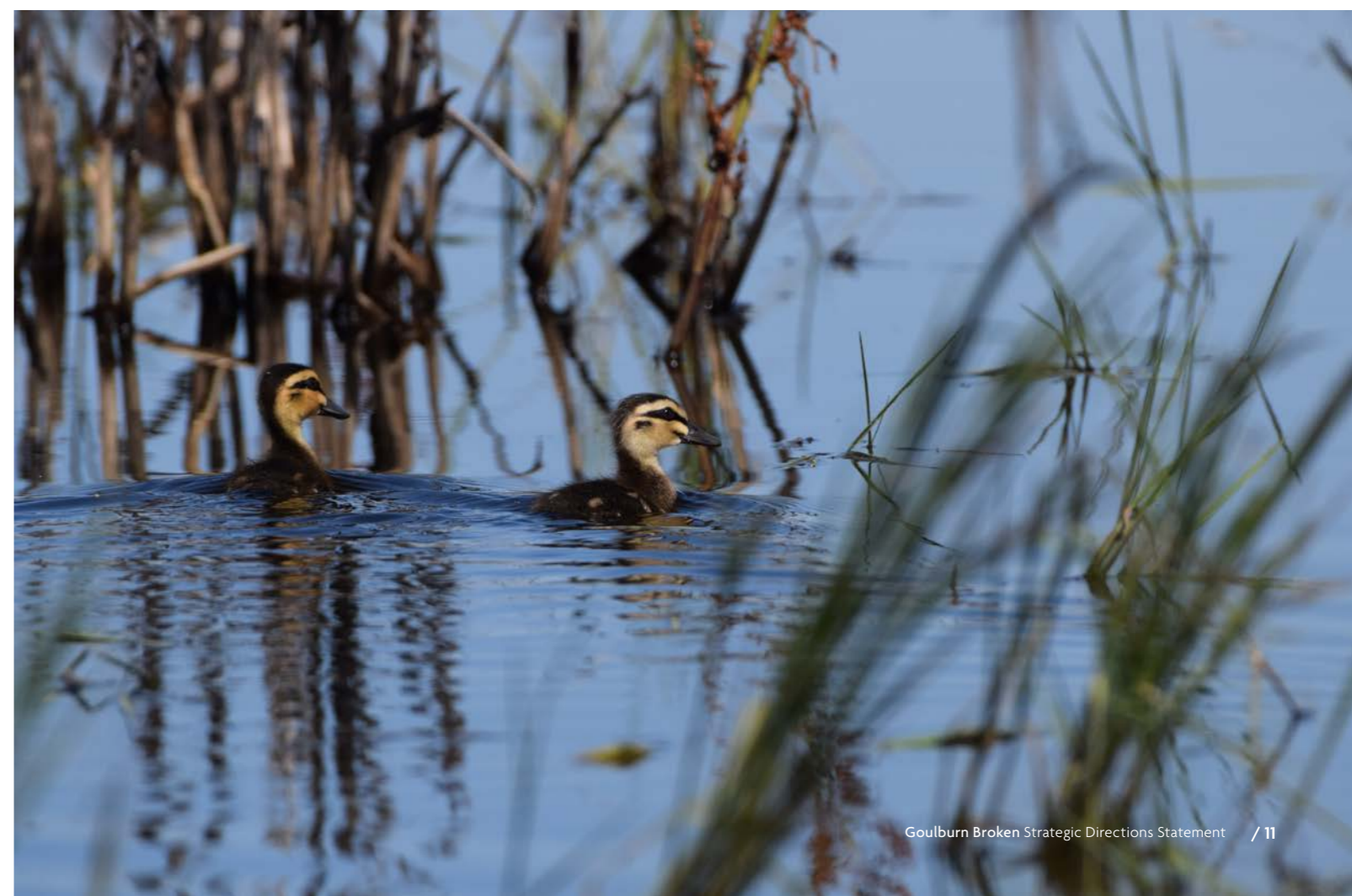
Traditional Owners have managed the land and water sustainably for thousands of generations and maintain an active connection to Country. In the north of the region is Yorta Yorta Country, which extends from Violet Town into southern New South

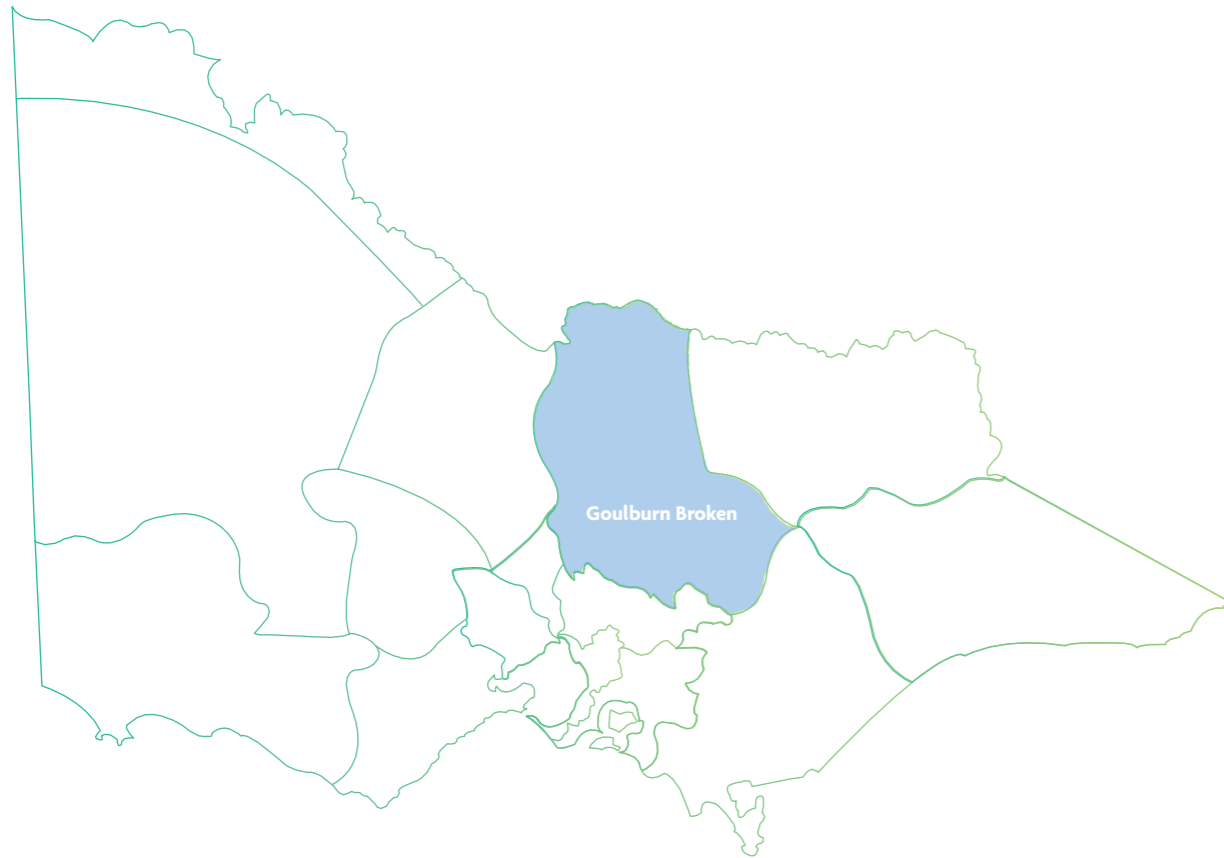
Wales. South of Yorta Yorta is Taungurung Country.

The region's Registered Aboriginal Parties, Yorta Yorta Nation Aboriginal Corporation and Taungurung Land and Waters Council, work to uphold the interests of the Yorta Yorta and Taungurung peoples with respect to culture and Country. This includes active involvement in natural resource management through joint management agreements and legislative rights to public land.

Land in the region is primarily used for agricultural production (about 63%). The remainder is a mixture of nature conservation, forestry, rural residential and urban.

Black Duck ducklings, Gaynor Swamp, Corop Lakes. Credit: Goulburn Broken Catchment Management Authority





A CHANGING REGION

The Goulburn Broken region is responding to a range of challenges that have been emerging during the past decade.

Water issues are more prominent and complex

Hotter, drier and more extreme weather events have become common, placing increased pressure on water resources. Waterways and creeks without major dams or weirs are beginning to run dry in summer – threatening water security and other values they currently provide.

Water markets, policy priorities, and decision-making driven from outside the region impact on water availability within the region, drive the unseasonal movement of irrigation water flowing down the Goulburn River and Broken Creek and increase pressure to deliver water down the Murray River.

Water scarcity and the current and predicted impacts of climate change have created a more complicated scenario into which to incorporate the aspirations of Traditional Owners.

Biodiversity under pressure

People in the region are building a greater connectedness with nature through recreation, with locals and visitors alike are enjoying activities such as fishing, off-road driving and camping. But the condition of the environment continues to decline. The health of woodland bird populations, insects and the tree canopy are collapsing under the pressures of climate change, recreation and urban encroachment. To these can be added firewood collection and pre-existing threats such as pest plant and animal invasion and land clearing, which negatively impact biodiversity and waterway health. There is a need to adapt revegetation practices to use species that can tolerate the changed climate conditions, whilst still providing important ecological services.

Some landscapes of the region, where property use has changed from agriculture to lifestyle, have seen an increase in vegetation cover and connectivity. But, in other areas, landscape connectivity has been reduced, and scattered paddock trees continue to be lost to clearing.

Urban population growth and land use is changing

Populations in the region's towns of Mansfield, Nagambie, Kilmore, Broadford, and Shepparton are growing. Many people are moving to the region for lifestyle reasons and retirement. The Goulburn Broken region is experiencing additional population growth, boosted by a recent trend of people relocating from metropolitan centres, due to increased flexible work arrangements and cost of living and lifestyle choices, such as access to natural and green spaces.

There is a greater community awareness of the importance of nature. The positive connection between green spaces and mental health and wellbeing is being realised, with increasing use of parks and waterways for recreation and connecting people with their environment. Being able to provide green spaces and shade for regional urban centres in a drying climate is now more important than ever.

Agriculture is changing

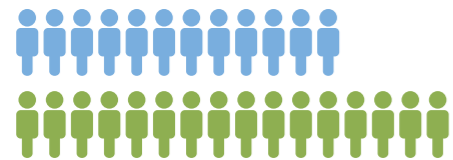
Agriculture occupies the majority of land use in the catchment, with farmers working primarily in dairy (25%), beef (20%), sheep (19%), grains (14%) and horticulture (11%)². The largest, most productive, farms are in the irrigation areas north and west of Shepparton, while smaller (by production value) farms are found towards the south of the region.

Northern areas have seen a reduction in area irrigated and an increase in dryland farming, along with significant investment in irrigation modernisation. Northern areas are also seeing fewer dairy farms, but increased cropping.

Some rural areas are changing rapidly from traditional agriculture use to lifestyle and amenity. In particular, urban expansion in the south of the region is encroaching on land that was previously agricultural.

POPULATION GROWTH

190,800 (2021)
254,700 BY 2030



33% INCREASE



TEMPERATURE

AN INCREASE OF
0.7-1.6°C
IN GOULBURN
BROKEN BY 2040*



CHANGE IN RAINFALL BY 2040

DECREASE BY 13.6%
WITH MORE-INTENSE RAINFALL IN
SOME YEARS

WATERWAY CONDITION

EXCELLENT:	6%
GOOD:	9%
MODERATE:	62%
POOR:	18%
VERY POOR:	5%

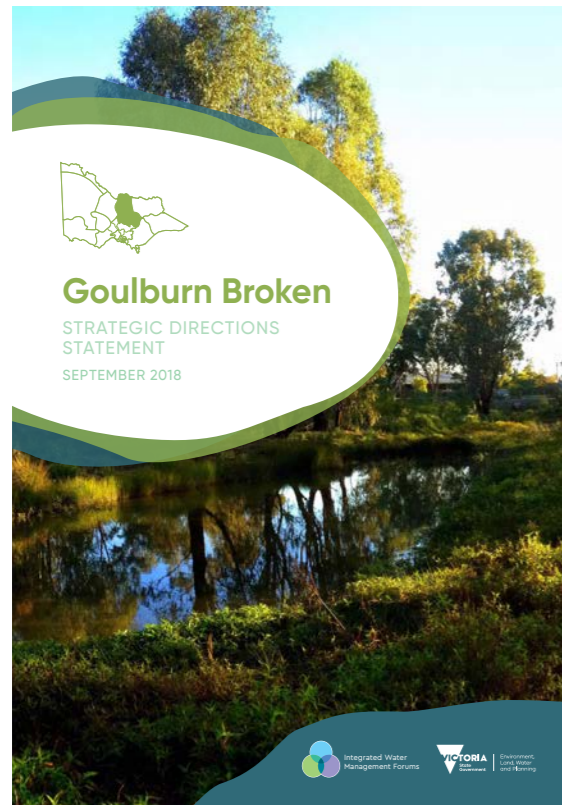


* Population data: Victoria In Future 2019
* Waterway condition: Third Index of Stream Condition report - ISC Goulburn Broken region
* Temperature and rainfall are the highest and lowest predictions across the Goulburn and Broken Catchments. Predictions represent the annual average at 2040 relative to the year 1995. Source: Guidelines for Assessing the Impact of Climate Change on Water Availability in Victoria, November 2020.

2 Goulburn Broken Regional Insights Paper 2020, www.gbcma.vic.gov.au

PROGRESS SO FAR

The first Goulburn Broken IWM Forum SDS was published in 2018. It articulated the regional context, the shared vision and the strategic water-related objectives for the region. It also listed IWM opportunities as ‘ready to advance’ projects developed in collaboration by the forum partners. It can be viewed online at www.water.vic.gov.au



Forum members have IWM at the forefront of their thinking and several are implementing IWM projects independently. The projects – past, current and future – listed in this document and endorsed by the forum members are those that benefit from a collaborative, multi-party approach.

The first SDS identified 13 projects that reflect the forum’s initial priorities and opportunities. Eight projects have been completed, with the remaining five underway.

Progress of the 2018 SDS projects is summarised in Table 1.

Horseshoe Lagoon. Credit: Goulburn Broken Catchment Management Authority



Table 1: A summary of the status of IWM opportunities listed in the forums 2018 SDS.

IWM opportunity	Status	Notes
Murray RiverConnect	Underway	This project was delayed due to COVID-19 but is still underway.
Liveable Nathalia	Completed	The Nathalia IWM Plan was completed in 2020. A key recommendation which emerged from this plan was to implement a Broken Creek Masterplan, which is now listed as a priority in this SDS.
Water Supporting an Active Shepparton	Underway	The Munarra Centre for Regional Excellence received funding for a business case.
Eastbank Lake Revitalisation	Underway	This project is progressing but will be completed over the long term due to its ambitious scope. Designs and a business case have been completed already. A technical sub-project is listed in this SDS.
Nagambie Alternative Water Supply	Completed	An IWM plan was developed in 2018 and was followed by a staged implementation plan and market opportunity analysis.
Seven Creeks Flow Investigation	Completed	A project workshop and an investigation of flows was undertaken in 2020.
Mansfield Water Quality Offsets	Completed	Mansfield Council completed an IWM plan in 2019. The Ford Creek revitalisation project was identified through this process.
Greening Kilmore	Completed	The project attracted funding in 2018 and was completed in 2020.
Kilmore Recycled Water Scheme	Underway	Significant progress has been made with this project and it is likely construction will commence in 2022.
Campaspe Shire Strategic IWM Framework	Completed	This project attracted funding, was completed in 2020 and is now being applied at Campaspe Shire Council.
Horseshoe Lagoon Cultural Revitalisation	Completed	This project was funded in 2019 and finished in 2020. The Horseshoe Lagoon Master Plan project is now proposed to build on this past work.
Place-based Small Town Wastewater Management	Completed	This project was completed in 2020 and is now available for councils to use across the state.
Nature and Health	Underway	The project has progressed through collaboration, and a memorandum of understanding was signed between Goulburn Valley Health and Goulburn Broken Catchment Management Authority.

Case study

Water reviving culture in Horseshoe Lagoon

Horseshoe Lagoon is a wetland that provides significant habitat for rare and threatened species such as the pied cormorant, azure kingfisher, and eastern great egret. It is a culturally significant place for the Taungurung people, and is valued by other locals for aesthetic, cultural, recreational and environmental reasons. Water management upstream, however, has prevented natural flows from passing through and filling the lagoon.

Taungurung Land and Waters Council led a project with local landholders, the Goulburn Broken Catchment Management Authority and Parks Victoria to develop and deliver the Horseshoe Lagoon Environmental Water Management Plan. The project considered how delivering environmental flows to the Lagoon could protect, respect and enhance its ecological and cultural values.

Traditional Owner leadership was key to the success of this project, with Taungurung Land and Waters Council and the Taungurung water knowledge group *Baan Ganalina* (Guardians of Water) directly involved in project planning, cultural and ecological assessments, and the eventual delivery of the water. In July 2019, the project began bringing water back into the lagoon – recording approximately 121 megalitres in July-August 2019 alone.

- Bringing water back to the lagoon has enhanced the social, recreational and ecological values of the site, safeguarding Taungurung cultural heritage, and demonstrating Traditional Owner leadership and knowledge in healing and caring for Country for the benefit of all.



Ecological assessments indicate the return of species not seen in the area for decades, including turtles and birdlife.

Progress so far



Horseshoe Lagoon. Credit: Goulburn Broken Catchment Management Authority

Case study

Helping small towns make big decisions

Many small towns across Victoria still rely on household septic tank systems to manage their wastewater and effluent. The long-term management of these on-site systems becomes increasingly difficult as septic tanks age, town population densities increase, maintenance and management practices slip, and the resources to maintain the tanks diminish. These issues can lead to environmental and human health hazards, posing a barrier to a town's growth.

While the need to improve wastewater management is clear, the pathway to a more sophisticated system is not straightforward. Difficulties can arise in choosing and funding the right technology, gaining environmental and planning approvals, implementing strategies, and finally, setting in place ongoing management to ensure the chosen technology continues to function.

To help improve the decision-making process for wastewater management in small towns across the Goulburn Broken region and other regional areas, Goulburn Valley Water led the development of a Small Town Wastewater Management Tool – a decision-making tool for assessing alternative wastewater management options.

The tool provides much needed guidance on the feasibility and costs of various technical solutions that operate at different scales – from a single lot to whole-of-town. It provides an understanding of the total cost to implement the solution and the cost per lot, which aids in identifying funding mechanisms for these systems. The tool also considers opportunities for integrated water management through using recycled water or improving stormwater management.

● ●
'The availability of the tool will provide the opportunity for the rapid and cost-efficient assessment of the feasibility and costs of alternative wastewater management options for small towns,' says Regan Flanagan, Manager Planning and Climate Resilience Goulburn Valley Water.
● ● ●



Example of a home septic tank system. Credit: Mark Mitchell

IWM OPPORTUNITIES

Opportunities that link to and address IWM challenges for the region were identified and developed by nominated practitioners of organisations participating in the forum.

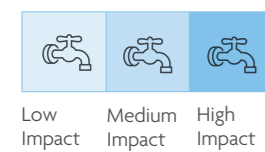
A summary of the priority IWM opportunities is shown in Table 2, with more detail in the following section. This list is dynamic and will continue to be updated to reflect the forum's priorities and opportunities as they arise.

Partners are committing their 'best endeavours' to ensure priority projects and strategies are moved forward, in line with the shared vision and strategic outcomes of the forum.

Table 2: IWM opportunities 'ready-to-advance' in the Goulburn Broken region.

IWM opportunity	Strategic outcomes							Urgency	Impact	Location	Scale
Thornton Stormwater Upgrade								2	13	Thornton	Town
Implementing Kilmore Creek Landscape Master Plan								2	9	Kilmore	Town
Sunday and Dry Creeks Landscape Master Plan								2	9	Broadford	Town
IWM Plans for Kilmore Development Areas								2	9	Kilmore	Precinct
Kilmore Recycled Water Scheme								1	8	Kilmore	Precinct
Corop Lakes Complex Integrated Water Project								1	12	Corop Lakes Complex	Precinct
Planning for a Green Avenel								1	11	Avenel	Town
Greening Euroa – Stage 3								2	10	Euroa	Town

Shade scale



- safe, secure and affordable supplies in a changing future
- effective and affordable wastewater systems
- manage flood risks

IWM opportunity	Strategic outcomes							Urgency	Impact	Location	Scale
Horseshoe Lagoon Master Plan								2	10	Horseshoe Lagoon	Precinct
Eastbank Lake Project – Gross Pollutant Trap Options Analysis								1	9	Shepparton	Precinct
Recycled Water for Kilmore's Recreation Areas								1	9	Kilmore	Park
Enabling IWM with Developers								1	8	Victoria	State-wide
Nagambie Green Spaces								1	8	Nagambie	Town
Gough's Bay Water Sensitive Town Plan								2	14	Gough's Bay	Town
Baddaginnie Wastewater Improvement								0	9	Baddaginnie	Town
Revitalising Ford Creek – IWM Icon Project								2	12	Ford Creek	Precinct
Greater Shepparton City Council Area IWM Plan								2	12	Greater Shepparton	Service area
Broken Creek Master Plan								2	11	Nathalia	Precinct

- healthy and valued waterways and waterbodies
- healthy and valued landscape
- Traditional Owner and community values reflected in place-based planning
- jobs, economic opportunity and innovation

Thornton Stormwater Upgrade

Untreated stormwater and greywater from Thornton township is currently flowing into the Goulburn River. This presents health risks to the community and other water users in the catchment, and to the viability of local trout farms downstream. Upgrading the stormwater infrastructure will protect water quality and economic opportunities, as well as providing amenity to Thornton township.

The proposed Thornton stormwater infrastructure upgrades will collect stormwater and greywater from properties and direct it through constructed wetlands to purify the water before it enters the Goulburn River. This project will improve local water quality and amenity and also protect economic interests such as the downstream trout farms. There is also the potential for captured water to be used at local farms for agriculture in future. Murrindindi Shire Council completed detailed design in June 2021.

Benefits: effective and affordable wastewater systems, healthy and valued water bodies and economic growth for the local area.



Status	Engaged
Lead agency	Murrindindi Shire Council
Implementation partners	Goulburn Broken Catchment Management Authority, Goulburn Valley Water, Goulburn-Murray Water
Location	Thornton
Scale	Town

Seven Creeks. Credit: Strathbogie Shire Council



Kilmore water sensitive wetlands. Credit: Goulburn Valley Water

Implementing Kilmore Creek Landscape Master Plan

This project seeks to implement the Kilmore Creek Precinct Landscape Master Plan (2021), developed in consultation with key partners and stakeholders. The master plan highlights the importance of the Kilmore Creek Precinct and presents a vision for it to become the primary recreational open space and environmental corridor in Kilmore, improving local interconnectedness. The draft Greening Kilmore IWM Plan also identified the Kilmore Creek as a priority project 'creating a central green spine'.

The master plan provides recommendations based on a shared vision and principles to guide public improvements to the Kilmore Creek precinct.

Benefits: The Kilmore Creek precinct will become the primary recreational open space and environmental corridor in Kilmore, improving local interconnectedness.










Status	Identified
Lead agency	Mitchell Shire Council
Implementation partners	Goulburn Valley Water, Goulburn Broken Catchment Management Authority, DELWP, Taungurung Land and Waters Council
Location	Kilmore
Scale	Town

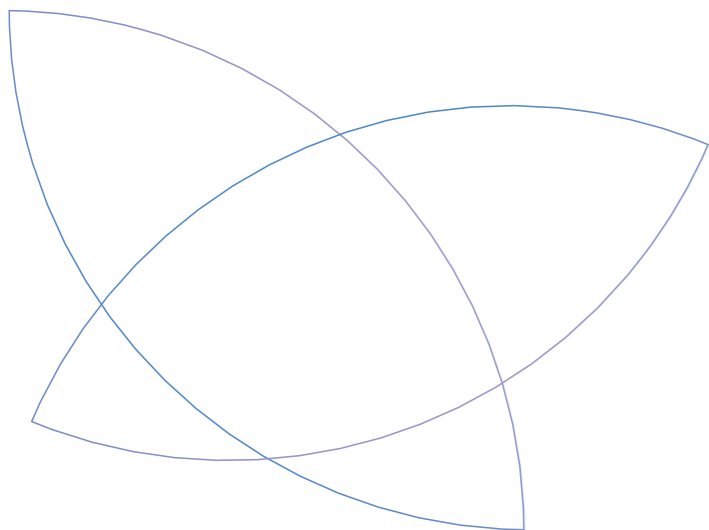
Sunday and Dry Creeks Landscape Master Plan

Broadford is fortunate in having two naturally vegetated and healthy waterways, Dry Creek and Sunday Creek. There are opportunities to build on this open space, creating links to the broader open space network and allowing pedestrians and cyclists to connect with nature. With investment, these natural corridors can provide such recreational connections and improve the ecological function of the waterways.

This project seeks to develop a landscape master plan for the Sunday and Dry Creeks within the township of Broadford and as a link to Mount Piper. This action is identified in the Broadford Structure Plan (adopted by Council in February 2022) and builds upon the flood studies recently completed for this sub-catchment.

Benefits: The development of a landscape master plan for the Broadford waterways will provide ecological and local benefits to the local community.

      	
Status	Identified
Lead agency	Mitchell Shire Council
Implementation partners	Goulburn Broken Catchment Management Authority, Taungurung Land and Waters Council
Location	Broadford
Scale	Town







IWM Plans for Kilmore Development Areas

Kilmore has several new growth areas, which present an opportunity to develop an IWM plan for greenfield sites. Planned development areas include sections of Ryans Creek and Kilmore Creek including recreational areas and residential development.

The plan will create a framework to embrace natural waterways and implement innovative water efficiency within new developments; providing a case study for other growth areas. The project has been identified as a priority in the draft Greening Kilmore IWM Plan.

Benefits: The IWM process will present local benefits to the immediate development and will also serve as an example of IWM planning across the region.

      	
Status	Identified
Lead agency	Mitchell Shire Council
Implementation partners	Goulburn Valley Water, Goulburn Broken Catchment Management Authority, Taungurung Land and Waters Council, Goulburn-Murray Water, developers
Location	Kilmore
Scale	Precinct








Kilmore Recycled Water Scheme

In a drying climate it is important to ensure a reliable supply of diverse water sources for use at council-managed facilities and private business in Kilmore. This will help the community stay cool and green, as well as support important economic activities.

This project will see the construction of a scheme to supply fit-for-purpose recycled water for irrigation from the Kilmore Wastewater Management Facility to the Kilmore Racing Club and council-owned sporting/recreational fields nearby. A detailed design was finalised in June 2021.

The next steps are for collaborative partners to finalise the scope of the works.

Benefits: improved resilience and liveability for Kilmore. This project will contribute to drought proofing community assets and supporting economic growth. It will also make use of a valuable asset – recycled water.

      	
Status	Engaged
Lead agency	Goulburn Valley Water
Implementation partners	Mitchell Shire Council, Kilmore Racing Club
Location	Kilmore
Scale	Precinct



Nagambie Lake. Credit: Goulburn Valley Water

Corop Lakes Complex Integrated Water Project

The Corop Lakes Complex is an area with high potential for enhancing its economic, environmental and cultural values. Within the complex, One Tree Swamp, Two Tree Swamp, Gaynor Swamp, Mansfield Swamp and Wallenjoe Swamp are already listed as priority wetlands in the Goulburn Broken Water Strategy 2014-2022. An opportunity exists to see if multiple benefits can be achieved by combining drainage work, which supports irrigation for agriculture, with work to enhance environmental and cultural values, while enhancing the economic value (tourism and agriculture) of the Corop Lakes Complex for the surrounding townships.

The Corop Lakes Complex is in a transitional management phase after the decommissioning of Greens Lake. At present, there is no overarching understanding of it to provide the opportunity to plan for future use and enhance its economic, environmental and cultural values. This situation has received considerable public and media attention.

The proposed project will undertake a staged approach beginning with capturing the existing values of the Corop Lakes Complex, including those of the Traditional Owners, and identifying knowledge gaps. Further learning from Traditional Owners and identification of environmental management paired with better drainage for primary production are possible. Improved effectiveness of using water for the environment would be a priority. There is also a need to understand the

current and future use of the complex for recreation to plan for the management of impacts.

The next steps are to scope the project further with collaborative partners and confirm their commitment. The bedding down of details is required before applying for grants.



Status	Identified
Lead agency	Goulburn Broken Catchment Management Authority, Taungurung Land and Waters Council
Implementation partners	Parks Victoria, DELWP, Goulburn-Murray Water, Campaspe Shire Council
Location	Corop Lakes Complex
Scale	Precinct

Planning for a Green Avenel

Avenel is growing rapidly. Without proper planning, the liveability and sustainability of the township could be at risk in a drying climate. Ensuring diverse water supplies are available to keep the township cool and green will be critical.

An IWM plan will help secure continued liveability and sustainability through planning for existing and future green blue spaces, passive recreation, and diverse water supplies to support these amenities. Water-sensitive design and planning for future growth will protect the water quality in Hughes Creek and enhance it as a community asset in the centre of town. The project will also work to protect and enhance the cultural values of Hughes Creek. Engagement will ensure the community is at the centre of decision making, and that it backs any proposals.

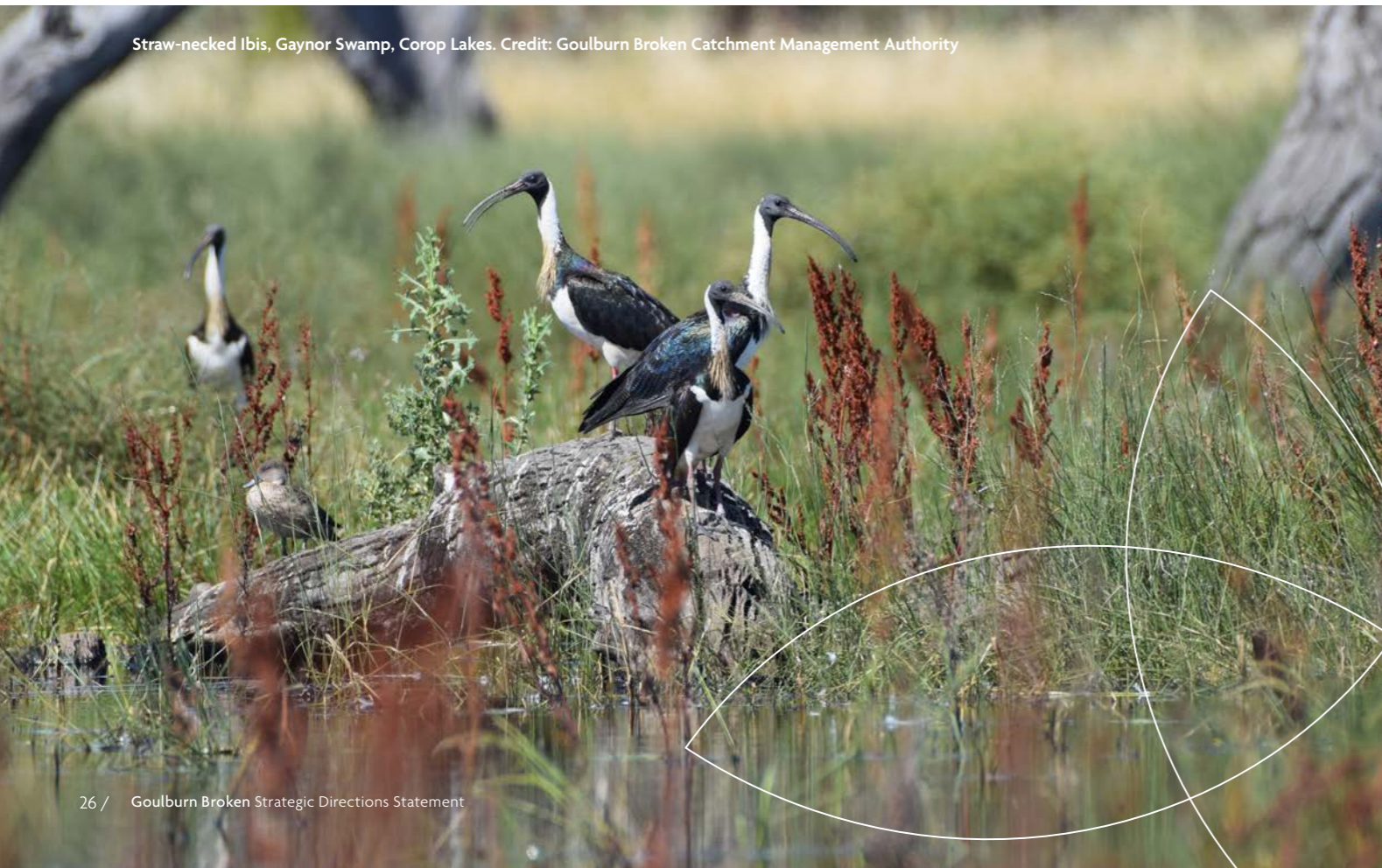
Council is working on getting to know what developments are happening and to better understand what the water impacts will be. Council will approach potential collaborative partners to further define and develop the project, with the intention of applying for funding.

Benefits: The introduction of IWM will result in cost savings in the long term through the development of community assets such as urban lakes that provide a first point of water treatment, green spaces irrigated by climate independent sources of non-potable water, and urban heat island mitigation due to this greening.



Status	Identified
Lead agency	Strathbogie Shire Council
Implementation partners	Goulburn Valley Water, Goulburn Broken Catchment Management Authority, Taungurung Land and Waters Council
Location	Avenel
Scale	Town

Straw-necked Ibis, Gaynor Swamp, Corop Lakes. Credit: Goulburn Broken Catchment Management Authority

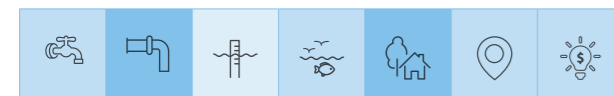


Greening Euroa – Stage 3

The Euroa catchment is highly dependent on rainfall. Raw water availability is declining due to climate change. This project, which is a staged response to the issue, has already seen Goulburn Valley Water upgrade its Euroa Wastewater Management Facility to produce Class B recycled water and commence supply to the community through a standpipe. Finding new ways to use recycled wastewater will help with sustainable water management and improve water security and liveability in the region.

Greening Euroa is designed to improve drought resilience and enhance liveability by keeping community spaces green in a sustainable way. In Stage 2 of the project, detailed design was completed in 2021. Stage 3 will involve construction of a recycled water pipeline and additional standpipes. A review of current stormwater infrastructure will also be undertaken to understand its capacity to handle more frequent intense rainfall events. As part of this process, areas for overflow wetlands will be identified so that stormwater quality can be improved before it discharges into waterways.

Benefits: The project will contribute to and improve the liveability of the region by ensuring the ongoing use of recreation and sporting grounds even during prolonged dry conditions.



Status	Committed
Lead agency	Strathbogie Shire Council
Implementation partners	Goulburn Valley Water, Goulburn Broken Catchment Management Authority
Location	Euroa
Scale	Town

Horseshoe Lagoon Master Plan

Visiting Horseshoe Lagoon has become popular, and has led to considerable impact on its cultural and environmental values, as well as on the visitor experience itself. A master plan will complement the recent environmental water plan and Taungurung cultural revitalisation actions by identifying visitation impacts as well as effective management principles and actions to address them.

Developing a master plan for Horseshoe Lagoon will enable management of the conservation flora and fauna reserve. It will take the impacts of visitor experience into account, and protect, respect and enhance the cultural and environmental values of the area. Working with all partners, effective management principles and actions will be developed.

Next steps are to establish a working group to scope the project further with collaborative partners and to confirm their commitment.

Benefits: improved river health, protecting Traditional Owner cultural values, economic growth for the local area, increased health and wellbeing opportunities for the local and broader communities, and increased visitor safety.



Status	Identified
Lead agency	Taungurung Land and Waters Council, Parks Victoria
Implementation partners	Goulburn Broken Catchment Management Authority, Mitchell Shire Council, Country Fire Authority, DELWP, Victorian Fisheries Authority, local land holders
Location	Horseshoe Lagoon
Scale	Precinct



‘During the last three years the Greening Euroa Committee has investigated how to use the recycled water from the Euroa Wastewater Treatment Plant to irrigate our public green spaces during the summer months. It presents a clever solution to a growing concern for many rural communities about how to sustainably manage outdoor spaces in the scorching summer months.’

Cr Sally Hayes-Buke, Chair Greening Euroa Project Steering Committee

Euroa Memorial Oval. Credit: Strathbogie Shire Council

Eastbank Lake Project – Gross Pollutant Trap Options Analysis

The Eastbank Lake project is located on the western fringe of the Shepparton CBD, within the Eastbank Civic Precinct and Monash Park. This project is a component of a larger project which aims to revitalise Eastbank Lake. A functional design was completed in 2016 and a preliminary business case was developed in 2018. Eastbank Lake is a catalyst project for the broader greening of Shepparton.

Ahead of the development of a detailed design, an options analysis for gross pollutant trap designs – to be installed in the remnant section of the Goulburn River – is needed. Accumulation of pollutants is a significant issue in the area and an engineering solution will be particularly challenging due to its low elevation in relation to other infrastructure. An innovative Gross Pollutant Trap design will be needed to collect litter and larger pollutants.

Benefits: Understanding the options for Gross Pollutant Traps and their installation prior to commencing other detailed designs and works will benefit the community in preventing further accumulation of pollutants in this area in the short term, as it is unlikely the larger project will attract funding soon. This will increase the health of the waterway and also increase the amenity value of the area.



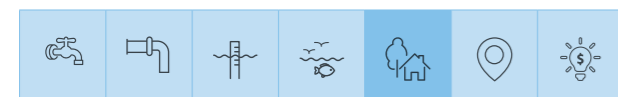
Status	Identified
Lead agency	Greater Shepparton City Council
Implementation partners	Goulburn Valley Water, Goulburn Broken Catchment Management Authority
Location	Shepparton
Scale	Precinct

Recycled Water for Kilmore's Recreation Areas

The JJ Clancy Reserve in Kilmore uses a significant amount of potable water for irrigation purposes. The use of fit-for-purpose recycled water for irrigation instead, would reduce the use of potable water, and increase the resilience of this important community open space.

This project is a value-add to the recycled water scheme proposed for the Kilmore Racecourse and seeks to provide fit-for-purpose recycled water to Council's recreational JJ Clancy Reserve near the racecourse. This project has been identified in the Draft Greening Kilmore IWM Plan which was developed with extensive stakeholder and community consultation.

Benefits: maintenance of green spaces within the township for recreational purposes.



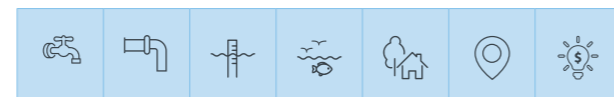
Status	Identified
Lead agency	Mitchell Shire Council
Implementation partners	Goulburn Valley Water, Kilmore Racing Club, JJ Clancy Reserve Committee of Management
Location	Kilmore
Scale	Park

Enabling IWM with Developers

(In collaboration with the Great South Coast IWM Forum)

This project aims to develop an engagement and incentive framework for working with property developers in our region to facilitate greater opportunity for IWM projects. The project will forge closer ties with property developers, building upon existing relationships or creating new ones.

The Great South Coast IWM Forum is currently working to develop a framework for working with developers within their own region. This project will assess the knowledge gained through the Great South Coast framework to consider how to develop and apply such frameworks within the Goulburn Broken region and wider across the state. The framework will outline a collaborative approach and also identify the range of legal mechanisms to enforce standards of work.



Status	Implementation
Lead agency	Great South Coast IWM Forum
Implementation partners	Goulburn Broken IWM Forum
Location	Victoria
Scale	State-wide

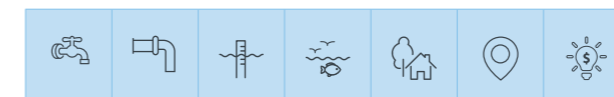
Nagambie Green Spaces

Nagambie is experiencing significant growth from a small base. The population is expected to more than double over the next 10 to 15 years with new residents, retirees and visitors. During peak periods of seasonal visitors and tourists, the population of the township swells to more than three times normal. Additionally, Nagambie Lake is experiencing water quality issues due to untreated stormwater runoff, and there are existing flood issues at the industrial estate and other hotspots within the township.

This project is designed to manage the water issues arising from the significant development of the township, putting surplus water to use in creating greener spaces.

The Nagambie IWM Plan and Market Opportunity Analysis was finalised in 2020. After presentation to the Council, an options analysis and detailed design has been proposed to identify current and future green spaces in Nagambie, as well as to examine opportunities to supply treated stormwater to these spaces to support a green and liveable community. A water-sensitive design can also help address some of the wastewater and flooding issues experienced by the town.

Benefits: provision of open spaces and green corridors within the township even during significant dry periods; enhancement of amenity and the microclimate through the introduction of natural features; reduction of wastewater and stormwater discharge to the environment; and addressing water quality issues in Nagambie Lake.



Status	Identified
Lead agency	Strathbogie Shire Council
Implementation partners	Goulburn-Murray Water, Goulburn Broken Catchment Management Authority
Location	Nagambie
Scale	Town

Gough's Bay Water-Sensitive Town Plan

Gough's Bay is an unsewered town on the banks of Lake Eildon, a major water storage for the Goulburn Catchment. The small lot sizes of the township mean that wastewater is difficult to contain within properties and that there is a high chance of it reaching the Lake if it is not contained. Developing and implementing an IWM plan for Gough's Bay can solve these issues. The community has a vision for a fully self-contained water cycle for the town.

There is an opportunity to make Gough's Bay a best-practice, self-contained, water-sensitive town, that will serve as a model for other small towns in the region. The Gough's Bay Water-Sensitive Town Plan will integrate the water cycle into urban design, to minimise environmental degradation and improve aesthetic and recreational appeal. Upgrades to wastewater and stormwater management will be achieved in ways that improve amenity.

Benefits: effective and affordable wastewater systems, healthy and valued water bodies, and economic growth for the local area. Community values will be reflected in planning.



Status	Committed
Lead agency	Mansfield Shire Council
Implementation partners	Taungurung Land and Waters Council, Goulburn Broken Catchment Management Authority, Goulburn Valley Water, Goulburn-Murray Water
Location	Gough's Bay
Scale	Town



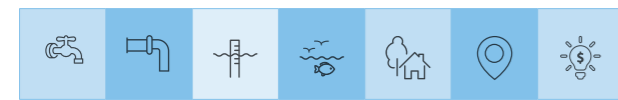
Installation of a dedicated roof water harvesting trunk main. Credit: Wannon Water

Baddaginnie Wastewater Improvement

Baddaginnie is located on the Broken Creek which is of significant environmental, recreational and cultural value to the surrounding community.

It has identified issues with septic tank wastewater systems which were installed in the 1960s on small allotments (less than 4,000 m²). Due to the size of these small allotments, the wastewater leach fields cannot be contained within each property boundary. An innovative wastewater management option is required for the township.

Benefits: effective and affordable wastewater systems, healthy and valued water bodies.



Status	Identified
Lead agency	Benalla Rural City Council
Implementation partners	TBA
Location	Baddaginnie
Scale	Town

Revitalising Ford Creek – IWM Icon Project

This initiative proposes the extensive rehabilitation of the entire reach of Ford Creek within the Mansfield township boundary. The Mansfield IWM Plan identified a community vision to develop Ford Creek into a focal point and central spine for connectivity throughout the township. The revitalisation of Ford Creek is a significant infrastructure project that will provide long term social, cultural, recreational and health values.

Ford Creek is not well connected to the township in terms of amenity and, at present, poses a flood risk, which is to be addressed by the project. The project requires flood mapping for the Ford Creek catchment, as well as an understanding of future stormwater runoff volumes. Detailed design will only be finalised after further engagement with the community.

Benefits: resilience to existing and future flood risk, improved river health, economic growth for the local area, and increased health and wellbeing opportunities for local communities. Cultural values will be reflected in place-based planning.



Status	Committed
Lead agency	Mansfield Shire Council
Implementation partners	Taungurung Land and Waters Council, Goulburn Broken Catchment Management Authority, local land holders
Location	Ford Creek
Scale	Precinct

Greater Shepparton City Council Area IWM Plan

Greater Shepparton City Council has many plans and strategies relating to water management, green spaces and climate change. The council is proposing to assess their effectiveness and bring them together into a single overarching IWM plan for the entire council service area. This overarching plan will also provide an opportunity to address localised issues such as drainage in Tatura and to find more climate friendly solutions to water pumping (to avoid flooding) in the region. An engagement phase will provide an opportunity to update objectives for the local area.

Benefits: The introduction of IWM will result in cost savings in the long term through the development of community assets such as urban lakes that provide a first point of treatment, green spaces irrigated by climate independent sources of non-potable water, and urban heat island mitigation through this greening.



Status	Identified
Lead agency	Greater Shepparton City Council
Implementation partners	Parks Victoria, Goulburn Broken Catchment Management Authority, Goulburn Valley Water, Yorta Yorta Nation, Taungurung Land and Water Council
Location	Greater Shepparton
Scale	Service area



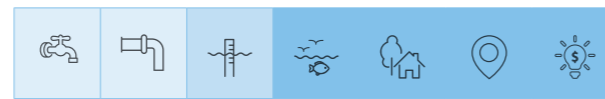
Ducks in Victoria Park Lake, Shepparton. Credit: Greater Shepparton

Broken Creek Master Plan

The land management responsibilities of the Broken Creek corridor are distributed across several government agencies. This limits the capacity to develop a strategic and proactive program to deliver projects for maintaining the waterway. Additionally, the community of Nathalia currently has limited access to the creek as a community space and amenity. Developing the Broken Creek Master Plan presents an opportunity to address management issues and connect the community to Broken Creek as a space for recreation.

The master plan aims to enhance recreational and community-based connections with the creek by creating new walking tracks to link with existing tracks, bridges and other infrastructure. Exercise equipment and waterfront community spaces for events and markets would be included in the design of these loops, as well as signage displaying directions and themes of cultural values, the natural environment and town history. The walking tracks will link the main hub of Nathalia to the creek, as well as better connecting the town to existing recreational areas and the western growth corridor. Messages educating the community about water security may be included in signage. The impacts of increased visitation will be considered and managed.

Benefits: provide the community of Nathalia with a healthier and valued waterway as well as green spaces that reflect the community values. The proposed market will provide ongoing economic opportunity for the township. The project can also contribute to improving water security in the region by including education and potentially setting a town water-saving target. This would be decided through a community engagement process. Ongoing management actions will ensure the area thrives into the future.



Status	Engaged
Lead agency	Moira Shire Council
Implementation partners	Parks Victoria, Goulburn Broken Catchment Management Authority, Yorta Yorta Nation, Goulburn Valley Water, Goulburn-Murray Water
Location	Nathalia
Scale	Precinct



Gemmils Swamp, Mooroopna. Credit: Greater Shepparton City Council.



Integrated Water
Management Forums



Environment,
Land, Water
and Planning