BANNOCKBURN INTEGRATED WATER MANAGEMENT PLAN

FEBRUARY 2025

GOLDEN PLAINS SHIRE

ACKNOWLEDGEMENT OF COUNTRY

Golden Plains Shire spans the traditional lands of the Wadawurrung and Eastern Maar people. We acknowledge them as the Traditional Owners and Custodians.

Council pays its respects to Wadawurrung Elders past, present and emerging. Council also respects Eastern Maar Elders past Present and Emerging.

Council extends that respect to all Aboriginal and Torres Strait Islander People who are part of the Golden Plains Shire.

WATER IS LIFE

Bannockburn is situated within the traditional lands of the Wadawurrung People. We acknowledge them as the Traditional Owners and Custodians.

Golden Plains Shire Council pays its respects to Wadawurrung Elders past, present and emerging. The Wadawurrung people recognise the rivers and waterways on Wadawurrung Country as living entities and Traditional Owners are the voices that speak for their health and well-being. Cultural water and Cultural flows are the water that exists on country – because water is life. Without water, life suffers and ultimately cannot exist.

Cultural flows are water entitlements, that are owned or have decision making agency by Indigenous Nations over them, of a sufficient and adequate quantity and quality to improve spiritual, cultural, environmental, social and economic conditions of those Nations. Inherently, Cultural flows are to Heal Country and to enable us to undertake our obligations to care for country and to bring our lifeblood, water, back to its natural flowing state, so that it can continue to support Country, Culture and Community.

In 2020, Wadawurrung released “Paleert Tjaara Dja – Let’s make country good together”, 10-year Healthy Country Plan. This plan outlines the objectives, aspirations and obligations for water on Wadawurrung Country.

Rivers and water bodies are highly modified and under threat from increased and incorrect usage. They are heavily over allocated and are suffering from everlasting extraction for irrigation, industry and potable assets. On Wadawurrung Country, there are no remaining water allocations, leaving no water for Cultural flows. The majority of rivers on Wadawurrung Country are extensively licensed and over sold, while only receiving very small environmental entitlements and very limited passing flows.

From Wadawurrung’s perspective, rather than continually extract and license water from natural flowing systems, new sources of water like storm water and recycled water, through IWM projects, can be used as the asset for sale, on selling it to users like irrigators, golf courses and other major industry. By increasing the confidence of users for alternative water sources, waterways can begin to heal, and Wadawurrung Peoples can regain agency over what has always been theirs.

Water that exists on Wadawurrung Country, must stay on Country as it is part of the holistic wellbeing of that landscape. Water is not just an asset for sale, water has its own spirit and its own connection to Country, it needs to be healthy to be able to support Country. Water is the lifeblood of Country, without water life within Country cannot be.

Source: Adapted from Wadawurrung Traditional Owners Corporation IWM Statement.

FOREWARD

Golden Plains Shire is a unique and thriving community with a rich history and strong economy. The Shire's appealing lifestyle attracts many, and we anticipate significant population growth in the coming years.

While a growing population offers numerous benefits, it also presents challenges that could impact the quality of life we cherish in Bannockburn. One of the key challenges is water management, which requires innovative solutions in response to our changing climate. Water management in particular is a known challenge without simple fixes. To ensure Bannockburn becomes a water sensitive community, we must utilise a diverse array of water resources, manage stormwater flows to protect sensitive downstream environments and educate our staff and the community about the crucial role our water systems play in liveability and resilience.

This Integrated Water Management Plan for Bannockburn is a crucial tool for guiding our growth. This plan has been developed through extensive engagement with our water cycle management partners – Barwon Water, Corangamite Catchment Management Authority, Wadawurrung Traditional Owners Aboriginal Corporation and supported by the Department of Energy, Environment and Climate Action.

The plan identifies and explores a range of opportunities which are detailed in a comprehensive technical report. This summary highlights the most promising initiatives explored through the technical work. Moving forward, Council will work closely with our water cycle partners, developers and the Victorian Government to further explore these opportunities, design and build the infrastructure while managing the water cycle to support the healthy, safe, vibrant, prosperous and sustainable Bannockburn community.

The Action Plan within this plan includes a series of initiatives aimed at advancing water infrastructure planning and management. We are committed to reporting our progress on these actions in our Annual Report.

Cr Sarah Hayden
Mayor of Golden Plains Shire

CONTENTS

ACRONYMS

IWM	Integrated Water Management
ML	Mega Litres
PSP	Precinct Structure Plan
VPA	Victoria Planning Authority
WRP	Water Recycling Plant
WSUD	Water Sensitive Urban Design

INTRODUCTION

Water plays a critical role in creating liveable and resilient cities and towns. As our urban centres grow, and as a changing climate impacts rainfall patterns, consideration of how water is sourced, used and managed is crucial to a sustainable future.

This Integrated Water Management (IWM) Plan seeks to improve water cycle management in Bannockburn, delivering a greener and more liveable township. In doing so this plan also seeks to reduce potable water consumption, utilise alternative water resources, enhance landscapes, and improve waterway health.

IWM is a framework for water management authorities and stakeholders to understand the importance of water systems and water cycle processes, and collaboratively develop ways to manage the water cycle to deliver enhanced outcomes that align with community values.

This IWM Plan outlines a series of opportunities to improve management practices across Bannockburn over the coming 30 years. Critical water service requirements include water supply, sewage management, flood and stormwater management, and public open space irrigation and maintenance. Through delivering critical water services, and managing the water cycle holistically, a growing Bannockburn will become increasingly liveable and resilient.

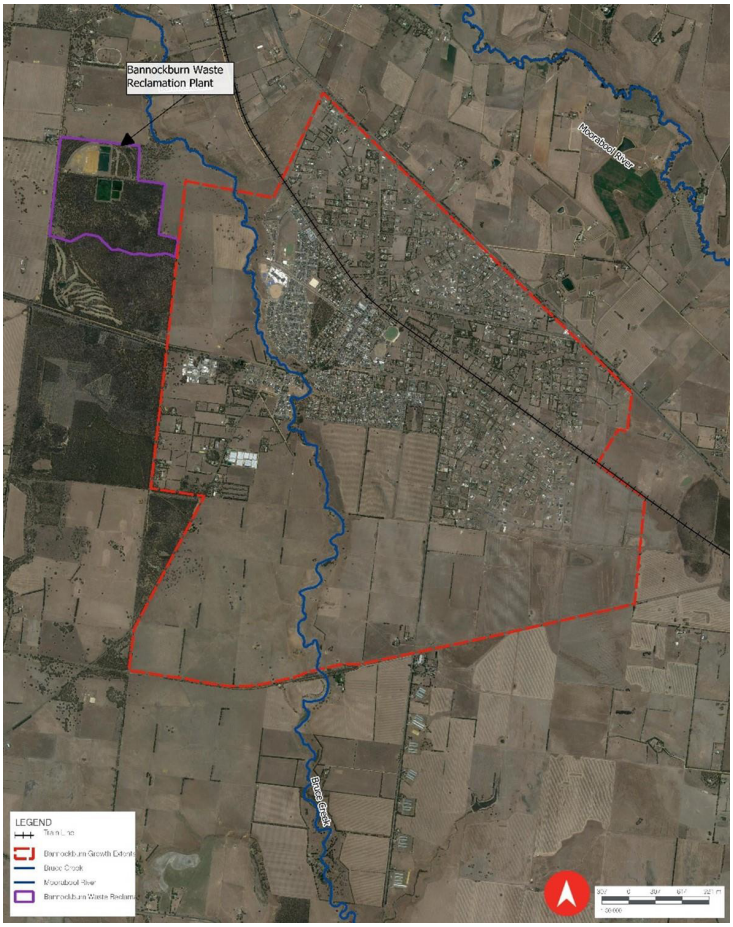


Figure 1. Bannockburn township

IMAGE: Bruce Creek, Bannockburn.

BANNOCKBURN – A GROWING TOWNSHIP

The land that is now known as Bannockburn was first inhabited by the Wadawurrung people of the Kulin Nation. The Wadawurrung people have lived in the Geelong region for many thousands of years and continue to have a deep connection to country.

In 1837, the area was surveyed by Europeans and soon after, pastoralists began to settle. During the mid-19th century, gold was discovered in the region around Bannockburn, and this led to a period of rapid growth and development within the town. As the gold rush came to an end, Bannockburn's economy transitioned to agriculture. Today, Bannockburn is a thriving regional centre that has a rich history encompassing both Indigenous and European cultures.

Existing water cycle services for Bannockburn are as follows:

- Bannockburn is serviced with drinking water sourced from the nearby Moorabool River, supported by supplies from Geelong and Melbourne when demand exceeds river supply.
- Bannockburn is partially sewered, with some housing serviced through on-lot septic tanks. Sewage that is reticulated is treated at the Bannockburn water reclamation plant, which produces Class C recycled water.
- Recycled Water is utilised for the irrigation of the Bannockburn Golf Course and adjacent agriculture.
- The bulk of stormwater generated across the township is collected and treated in raingardens and wetlands before being discharged to Bruce Creek.
- Open spaces are irrigated with potable water.

It is also recognised that low permeability soils are present across Bannockburn.

The approximate water balance for Bannockburn is shown in Figure 2.

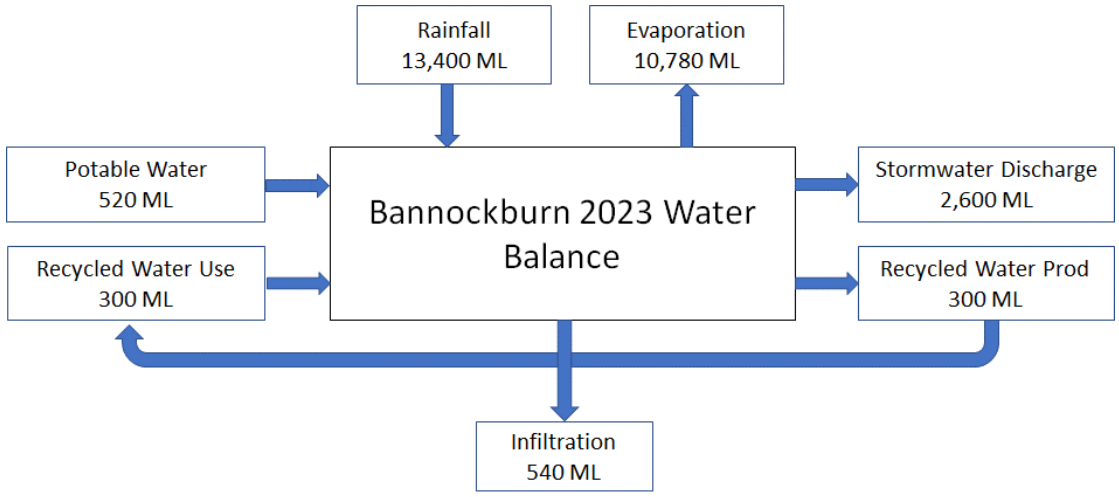


Figure 2. Current Township Water Balance

Bannockburn is projected to grow significantly through to 2050 and beyond. The Bannockburn Growth Plan (2021) was developed by the Victorian Planning Authority (VPA), in partnership with Golden Plains Shire Council, to inform the sustainable development of Bannockburn through to the 2050.

The 2021 Census counted a population of 6,178 for Bannockburn. By 2041 this population is expected to grow to almost 20,000 and over 25,000 by 2050.

The proposed Bannockburn Growth Areas are located in the north-west, south-west and the south-east of the township as shown in Figure 3.

Figure 3. Bannockburn Growth Plan concept plan

If a business as usual water cycle management approach were taken in servicing these new growth areas, the volumes of water to be managed would change significantly:

- An increase in potable water demand of 680 ML per year (+130%)
- An increase in sewage management of 540 ML per year (+180%)
- An increase in stormwater runoff of 1900 ML per year (+75%)
- An increase in open space irrigation demand of 80 ML per year (+500%)
- A reduction in infiltrated stormwater of 90 ML per year (-17%)

EXISTING ISSUES AND PROJECTED CHALLENGES

Bannockburn township is located within an area subject to water security and wastewater management challenges. The impending growth in Bannockburn will add to these challenges. Additionally the increase in urban stormwater runoff has the potential to degrade the values of Bruce Creek.

Water for Bannockburn is supplied from several sources. Outside the urban area, farm dams capture rural runoff to provide water for stock watering. Recycled water is also available and is used by the golf course and for agriculture adjacent to the water reclamation plant. Drinking water is sourced from the Moorabool River, which has historically serviced townships across the Golden Plains region. As these townships have grown, and as climate change has reduced the reliability of rainfall in the Moorabool River catchment, supply from Geelong to service Bannockburn has become important. This additional water is sourced from local and Melbourne supplies. And as Bannockburn grows, it is likely that desalinated water will become part of the supply mix.

Areas of Bannockburn are not currently sewered, with septic tanks servicing the older parts of town. The new growth areas will be sewered, with increased sewage volumes being processed through an augmented Bannockburn water reclamation plant. Recycled water generated cannot be beneficially discharged to Bruce Creek, and so there will be additional volume of recycled water to be managed.

The increased urban footprint of a growing Bannockburn will result in increased stormwater runoff and reduced base flows. Downstream of Bannockburn, the Moorabool River and the Barwon River provide critical flows to the Ramsar Convention recognised Lake Connewarre. There is potential for the stormwater discharge generated from Bannockburn to negatively impact these water bodies.

To manage the environmental impact of urban development on waterways, water sensitive urban design infrastructure will continue to be built. There is potential that this infrastructure can do more than only treat stormwater, it can also harvest and infiltrate stormwater. This harvested and infiltrated stormwater can then also be used to meet environmental shortfalls and urban demands. Golden Plains Shire Council will see additional irrigation demand for water in the development of recreation spaces, supply with alternative water can reduce the cost of maintaining these assets while also delivering environmental outcomes.

A holistic integrated approach to managing these challenges will see solutions delivering multiple outcomes, and in doing so, demonstrate economic feasibility and environmental sustainability.

STRATEGIC DRIVERS	CONTEXT
Drinking Water Supplies	The region is becoming increasingly dependent on imported drinking water to meet a growing demand
Recycled Water Management	Increasing recycled water generation needs to be sustainably managed.
Flooding	Nuisance flooding is experienced in parts of Bannockburn. New development areas will require flood retardation infrastructure.
Healthy Waterways	Bruce Creek contains ecological values and is highly valued by the community. Very high value water bodies are downstream.
Healthy Landscapes	Existing and future open spaces will require water to maintain vegetation.
Community Values	The community is active in environmental outcomes across Bannockburn.
Innovation and Economic Outcomes	Water can be used to supply agriculture and industry, supporting employment.

STRATEGIC DIRECTION

VISION

Through extensive engagement with Golden Plains Shire Council staff and stakeholders, an IWM Vision for Bannockburn was developed.

Bannockburn will grow as a water sensitive township, with water supporting liveability and resilience within the community, and a thriving environment.

This vision for Bannockburn and Bruce Creek, recognises the role of water in our communities, landscapes and environment. Water is important for our health and wellbeing, and to support and attract agriculture, businesses and industry. The water cycle for Bannockburn needs to provide for the needs of the community and environment, even in times of scarcity and in the face of climate change.

Water management across Bannockburn requires collaborative planning that contributes towards enhancing environmental flows and systems, considers alternative water use, stormwater management, and supports a liveable, sustainable and healthy community.

OBJECTIVES

The following objectives and outcomes aligns Bannockburn's water cycle aspirations with Council's Strategic Plan, the Barwon Region IWM Forum and stakeholder strategies.

Objective 1: Community values are reflected in the way water is used and managed

Outcomes:

- Reduction in potable water usage
- Increased usage of fit-for-purpose alternative water supplies in households
- Traditional owner values are considered in water cycle management
- The community is informed and educated on the water cycle

Objective 2: Water enables a green and liveable Bannockburn

Outcomes:

- Open spaces are supported through alternative water supplies
- Street tree canopy is supported through alternative water provision
- Water cycle management is promoted through highly visible projects

Objective 3: The sustainability of waterways and landscapes is supported by water

Outcomes:

- Waterways are protected from the detrimental impacts of development and supported through improved water cycle management, including stormwater harvesting and beneficial release
- WSUD infrastructure is built and managed to provide benefits into the long term

Objective 4: Water creates opportunity and economic prosperity of Bannockburn

Outcomes:

- Agriculture and industry are supported by alternative water supplies

TARGETS

The following targets were developed to be measures demonstrating the effectiveness of this IWM Plan. Actions are developed to achieve these targets.

Table 1. IWM Plan Targets

#	OBJECTIVE	#	TARGETS	TIMEFRAME
1	Community values are reflected in the way water is used and managed	1.1	100% of public buildings and sports pavilions fitted with rainwater tanks and plumbed to toilets	**10 years**
		1.2	Rainwater tanks, connected to toilets, laundry and gardens, installed across 100% new residential properties	**10 years**
		1.3	New water management infrastructure, such as wetlands and alternative water supply schemes, referred to Wadawurrung Traditional Owners Aboriginal Corporation for input into design, construction and ongoing maintenance	**5 years**
		1.4	IWM education signage installed on 100% of new high priority WSUD assets	**5 years**
2	Water enables a green and liveable Bannockburn	2.1	100% of active public open spaces irrigated with alternative water supplies	**10 years**
		2.2	100% of new street trees supported through passive stormwater irrigation	**10 years**
		2.3	Blue-green infrastructure installed on 3 high priority streetscapes	**10 years**
3	The sustainability of waterways and landscapes is supported by water	3.1	Bruce Creek predevelopment volumes and flow rates restored through managed stormwater harvesting.	**20 years**
		3.2	WSUD assets designed, built and operated to industry best practice (100%)	**5 years**
4	Water creates opportunity and economic prosperity of Bannockburn	4.1	50% increase in beneficial use of alternative water supplies by agriculture and industry	**10 years**
		4.2	100% excess stormwater generated across Bannockburn is beneficially reused	**20 years**

WATER CYCLE OPPORTUNITIES

The following water cycle management opportunities were developed to better manage the water of a growing Bannockburn. The seek to integrate the water cycle, reducing the need for import of water, to protect valued waterways and to educate the community on the importance of water management. The opportunities demonstrate how the objectives will be realised, which targets they will contribute to and what is needed to be done to start the implementation process.

MANAGING STORMWATER VOLUME TO PROTECT WATERWAY VALUES

Excess stormwater flows are collected and treated in wetlands throughout the growth areas of Bannockburn. Stormwater is harvested from these wetlands, stored and if required treated further. This stormwater could be transferred back to Bruce Creek to offset upstream extractions, or transferred to a regional stormwater management system being considered for the Northern and Western Geelong Growth Areas.

OBJECTIVE	TARGET	ACTION
The sustainability of waterways and landscapes is supported by water	Bruce Creek predevelopment volumes and flow rates restored through managed stormwater harvesting.	Develop stormwater harvesting concept: • Analyse flows within Bruce Creek and determine optimal flow regime • Determine infrastructure requirements and management • Build a business case for initial and future investment
Water creates opportunity and economic prosperity of Bannockburn	100% excess stormwater generated across Bannockburn is beneficially reused	

RAINWATER TANKS FOR TOILET FLUSHING, LAUNDRY AND IRRIGATION

Installation of rainwater tanks on all new buildings to provide rainwater for toilet flushing, laundry and garden irrigation demands.

OBJECTIVE	TARGET	ACTION
Community values are reflected in the way water is used and managed	100% of public buildings and sports pavilions fitted with rainwater tanks and plumbed to toilets	Enable rainwater tank installation: • Embed requirement for rainwater tank installation on all lots in PSP/ Planning Schemes Develop plumbing specification, including optimal tank size • Engage with developers to communicate requirement and process for compliance with rainwater tank installation
	Rainwater tanks, connected to toilets, laundry and gardens, installed across 100% new residential properties	

PASSIVELY IRRIGATED STREET TREES

Street tree growth can be supported through provision of additional water. This initiative proposes to construct a small underground water storage with each street tree which can be filled will roof water or street stormwater runoff. This water would be released slowly to the soil to support street trees, increasing canopy cover and reducing the urban heat island effect.

OBJECTIVE	TARGET	ACTION
Water enables a green and liveable Bannockburn	100% of new street trees supported through passive storm-water irrigation	Enable passive street tree irrigation installation: • Embed requirement for passive street tree irrigation system installation for all street trees in PSP/Planning Schemes • Develop design specification for passively irrigation system • Engage with developers to communicate requirement and process for compliance with passive irrigation system installation.

CLASS C RECYCLED WATER SUPPLY FOR PUBLIC OPEN SPACE IRRIGATION

As Bannockburn grows, and additional recycled water volumes are generated, this recycled water could be supplied to the township to irrigate public open spaces. Existing demands are present at the active open space sites within Bannockburn Town Centre, with future demand from open spaces in each of the growth areas. This option contributes to responsible management of treated effluent, which also reduces potable water demand.

OBJECTIVE	TARGET	ACTION
Water enables a green and liveable Bannockburn	100% of active public open spaces irrigated with alternative water supplies	Collaborate with Barwon Water to explore recycled water supply for existing and new public open spaces across Bannockburn, and explore funding mechanisms.

IMAGE: Example of recycled water infrastructure for open space irrigation, image courtesy of DEECA.

KERB CUT-OUTS

Stormwater runoff from roads may be directed to open spaces for absorption and infiltration instead of directing the runoff to the drainage system. This would increase the water available for vegetation in open spaces while reducing the discharge of detrimental runoff to waterways. Systems must be designed for local conditions such as low permeability soil.

OBJECTIVE	TARGET	ACTION
The sustainability of waterways and landscapes is supported by water	WSUD assets designed, built and operated to industry best practice (100%)	Enable kerb cut-out installation: • Embed requirement for kerb cut-out installation for appropriate locations in PSP/Planning Schemes • Develop design specification for kerb cut-out infrastructure • Engage with developers to communicate requirement and process for compliance with kerb cut-out installation

REVIEW AND RECTIFY EXISTING WSUD

Several existing WSUD assets across Bannockburn are inefficient and require work to get them providing the outcomes for which they were designed. These installations require detailed assessment of their effectiveness in treating stormwater, and a program developed to modify the WSUD systems and improve their functionality.

OBJECTIVE	TARGET	ACTION
The sustainability of waterways and landscapes is supported by water	WSUD assets designed, built and operated to industry best practice (100%)	Undertake review of functionality of existing WSUD infrastructure and develop a rectification plan where required.

RECYCLED WATER / STORMWATER FOR AGRICULTURE / INDUSTRY

Stormwater flows can be collected from treatment wetlands and pumped to a storage at the Bannockburn WRP. These stormwater volumes could then be combined with Class C recycled water generated and this combined water would be supplied to agriculture and industry through an expanded recycled water supply network. With a sufficiently large network, this option could manage both excess stormwater and recycled water for beneficial reuse. It is also compatible with open space reuse.

OBJECTIVE	TARGET	ACTION
Water creates opportunity and economic prosperity of Bannockburn	50% increase in beneficial use of alternative water supplies by agriculture and industry	Engage with Barwon Water to understand how Golden Plains Shire Council can support the increased provision of recycled water for industry and agriculture.
	100% excess stormwater generated across Bannockburn is beneficially reused	

STORMWATER HARVESTING FOR ACTIVE OPEN SPACE IRRIGATION

Stormwater generated from impervious area across Bannockburn may be used to irrigate open spaces. Stormwater flows can be collected and treated in wetlands located throughout the development. Stormwater is treated and conveyed by gravity to an open water storage adjacent to the wetland or open space. Water would then be pumped from this storage, be filtered and supplied at irrigation pressure to the open space irrigation system.

OBJECTIVE	TARGET	ACTION
Water creates opportunity and economic prosperity of Bannockburn	50% increase in beneficial use of alternative water supplies by agriculture and industry	Develop localised stormwater harvesting for public open space irrigation concept, and compare with recycled water supply opportunity.
	100% excess stormwater generated across Bannockburn is beneficially reused	

INFILTRATION WETLANDS

Urban areas reduces the ability of rainfall to infiltrate into the subsoil and replenish shallow groundwater, which provides baseflow to waterways. To restore baseflows wetlands can be constructed to facilitate infiltration, allowing water collected in wetlands to soak into the soil. While the soil across Bannockburn is of low permeability, wetland design and reducing extent of clay liner is expected to facilitate a degree of infiltration.

OBJECTIVE	TARGET	ACTION
The sustainability of waterways and landscapes is supported by water	Bruce Creek predevelopment flows restored through managed stormwater harvesting.	Enable infiltration wetland installation: • Embed requirement for infiltration functionality for all treatment wetlands in PSP/Planning Schemes • With reference to Melbourne Water's wetlands design guidelines, develop design specification for infiltrating functionality • Engage with developers to communicate requirement and process for compliance with infiltrating wetland installation

REVIEW INFRASTRUCTURE DESIGN MANUAL

The Infrastructure Design Manual, a joint initiative of Victorian rural and regional councils, outlines consistent requirements and standards for the design and development of infrastructure. This manual can be reviewed in the context of the enhanced water cycle outcomes this IWM Plan is seeking to deliver including how infrastructure is developed and who is engaged through that process. An Addendum, specific to the needs of Golden Plains Shire Council, could be created. E.g. to incorporate infiltration functionality into wetlands.

OBJECTIVE	TARGET	ACTION
Community values are reflected in the way water is used and managed	New water management infrastructure, such as wetlands and alternative water supply schemes, referred to Wadawurrung Traditional Owners Aboriginal Corporation for input into design, construction and ongoing maintenance	Engage with internal teams and explore the benefits of reviewing the WSUD design specifications outlined in the Infrastructure Design Manual within the context of the Bannockburn IWM Plan.
	IWM education signage installed on 100% of new WSUD assets	
The sustainability of waterways and landscapes is supported by water	WSUD assets designed, built and operated to industry best practice (100%)	

EDUCATE STAFF ON IWM

Run education sessions for Golden Plains Shire Council councillors and staff to improve water literacy and support for IWM projects across the municipality.

OBJECTIVE	TARGET	ACTION
All objectives	All targets	Engage with internal teams and explore the benefits of educating staff in Integrated Water Management, and if viewed as worthwhile, engage a consultant to design a program run a session(s) with council staff.

EDUCATE COMMUNITY ON IWM

Run an education session for Golden Plains Shire Council community members and groups to improve water literacy and support for IWM projects across the municipality.

OBJECTIVE	TARGET	ACTION
All objectives	All targets	Engage with internal teams and explore the benefits of engaging with the community in Integrated Water Management, and if viewed as worthwhile, develop a program for community engagement.

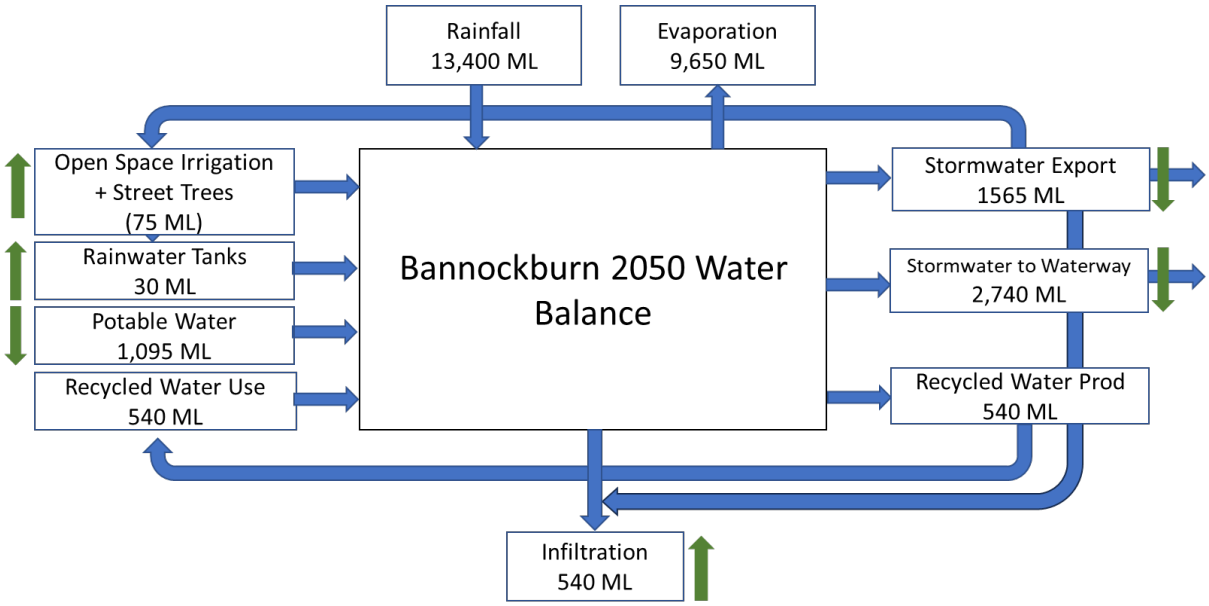
PRIORITY BLUE-GREEN INFRASTRUCTURE

Installation of water sensitive urban design assets within the Bannockburn town centre. This initiative would provide real water quality improvement, and would encourage the community to engage with the water cycle, facilitating improvement in water literacy.

OBJECTIVE	TARGET	ACTION
Water enables a green and liveable Bannockburn	Blue-green infrastructure installed on 3 high priority streetscapes	Engage with internal teams and explore the potential for high profile blue green infrastructure within the Bannockburn town centre.

REALISING THE BENEFITS

The implementation of these opportunities will realise a significantly improved water cycle.



In this way potable water usage is reduced, recycled water resources are beneficially reused and Bruce creek is protected from harmful stormwater flows.

ACTION PLAN

	ACTION DESCRIPTION	OPTION	OUTCOME/ TARGET	TIMING	PRIORITY	RESOURCES REQUIRED	COLLABORATIVE PARTNERS
1	Establish internal governance structure for the implementation of the Bannockburn IWM Plan actions. This includes formation of a cross-disciplinary working group and regular reporting mechanisms.	All	All	2024	High	Environment and Open Space Planning Asset Services	
2	The Bannockburn IWM Plan is supported by Barwon IWM forum with participation from collaboration partners to provide direction and advocate for resources for its delivery.			Ongoing	High	Environment	Barwon IWM Forum Members
3	Finalise growth areas wide IWM approach with BW and communicate to VPA for inclusion in PSPs, and incorporate into planning schemes	All	All	2025	High	Planning Environment	Barwon Water Victorian Planning Authority
4	Develop stormwater harvesting concept including: 4.a) Analyse flows within Bruce Creek and determine optimal flow regime 4.b) Determine infrastructure requirements and management 4.c) Build a business case for initial and future investment	1	3.1 4.2	2026 2026-27 2027	High High High	Consultant Environment Asset Services Planning	Corangamite Catchment Management Authority Barwon Water
5	Enable rainwater tank installation: 5.a) Embed requirement for rainwater tank installation on all lots in PSP/ Planning Schemes 5.b) Develop plumbing specification, including optimal tank size 5.c) Engage with developers to Develop process to enable compliance with rainwater tank installation	2	1.1 1.2 3.1 4.2	2025 2026 2026-27	High High High	Consultant Environment Asset Services Planning	Developers

	ACTION DESCRIPTION	OPTION	OUTCOME/ TARGET	TIMING	PRIORITY	RESOURCES REQUIRED	COLLABORATIVE PARTNERS
6	Enable passive street tree irrigation installation including: 6.a) Embed requirement for passive street tree irrigation system installation for all street trees in PSP/ Planning Schemes 6.b) Develop design specification for passively irrigation system 6.c) Engage with developers to enable requirement and process for passive irrigation system installation.	3	2.2 3.1 4.2	2026 2026 2026-27	High High High	Consultant Environment Asset Services Planning	Developers
7	Collaborate with Barwon Water to explore recycled water supply for existing and new public open spaces across Bannockburn and explore funding mechanisms. Engage with Barwon Water to understand how GPSC can support Barwon Water to increase provision of recycled water for industry and agriculture. Ensure development of necessary community education and awareness campaigns around safety/assurance of recycled water.	4, 7	2.1 4.1	2026	High	Environment and Open Space Asset Services Planning	Barwon Water
8	Enable kerb cut-out installation including: 8.a) Embed requirement for kerb cut-out installation for appropriate locations in PSP/Planning Schemes 8.b) Develop design specification for kerb cut-out infrastructure 8.c) Engage with developers to enable requirement and process for kerb cut-out installation	5	4.1	2025 2026 2026-27	High High High	Consultant Environment Asset Services Planning	
9	Undertake review of functionality of existing WSUD infrastructure. Also explore options to independently review/assess engineering solutions submitted to Council.	6	3.1 3.2	2026	Medium	Consultant Environment Asset services	
10	Engage with internal teams and explore the benefits of educating staff in Integrated Water Management, and if viewed as worthwhile, engage a consultant to design a program run a session(s) with council staff.	11	1.4	2027	Medium	Consultant Environment	
11	Engage with internal teams and community groups to explore the benefits of engaging with the community in Integrated Water Management, and if viewed as worthwhile, develop a program for community engagement.	12	1.4	2027	Medium	Environment Community development	Community Groups - Friends of the Barwon - People for A Living Moorabool

	ACTION DESCRIPTION	OPTION	OUTCOME/ TARGET	TIMING	PRIORITY	RESOURCES REQUIRED	COLLABORATIVE PARTNERS
12	Develop localised stormwater harvesting for public open space irrigation concept, and compare with recycled water supply proposal.	8	3.1	2026	Medium	Consultant Environment and Open Space Asset services Planning	Barwon Water
13	Enable infiltration wetlands installation including: 13.a) Embed requirement for infiltration functionality for all treatment wetlands in PSP/Planning Schemes 13.b) With reference to Melbourne Water's wetlands design guidelines, develop design specification for infiltrating functionality 13.c) Engage with developers to enable requirement and process for infiltrating wetland installation.	9	3.1	2025 2026 2026-27	High High High	Consultant Environment Asset services	Melbourne Water Corangamite Catchment Management Authority
14	Engage with internal teams and explore the benefits of reviewing the WSUD design specifications outlined in the Infrastructure Design Manual within the context of the Bannockburn IWM Plan.	10	3.2	2027	Medium	Environment Asset services Planning	
15	Engage with Regional Stormwater Management programs including the Northern and Western Geelong Bannockburn Growth Areas Adaptive Stormwater Volume Management Project to improve the understating of waterway health and identify potential stormwater interventions in the growth areas.	1	3.1,4.2	2025-26	Medium	Environment Asset services Planning	Barwon Water
16	Engage with internal teams and community groups to explore the potential for high profile blue green infrastructure within the Bannockburn town centre.	13	1.3 1.4 2.2 2.3	2027	Medium	Environment	Community Groups - Friends of the Barwon - People for A Living Moorabool
17	Update Action Plan to incorporate findings from the first 12 months of plan implementation and resources available.	All	All	2026	High	Environment	

MONITORING, EVALUATION, REPORTING AND IMPROVEMENT

The real value of any plan or strategy lies in its implementation. The vision, objectives, targets and actions that comprise this IWM Plan will be realised through commitment from Golden Plains Shire Council and supported through governance systems to monitor, evaluate, report and improve its implementation.

As projects are implemented, Golden Plains Shire Council will utilise the Monitoring, Evaluation, Reporting and Improvement (MERI) framework to ensure outcomes are progressing and stakeholders are receiving value for participation. The MERI framework is designed to fit within council's project management, reporting and prioritisation structures. A MERI framework should also be specifically developed for the management of Bruce's Creek, with the assessment of IWM measures directly tied to the ongoing state of this waterway.

The progress of the implementation of this plan will be reported on through the Annual Report for Council, in a similar manner to other strategic initiatives and sustainability activities.

GOLDEN PLAINS SHIRE

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CUSTOMER HUB HOURS
Bannockburn (Civic Centre) 8.30am to 5pm, Monday to Friday
Smythesdale (The Well) 8.30am to 5pm, Monday to Friday

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