



Barwon

STRATEGIC DIRECTIONS STATEMENT

2018



Integrated Water
Management Forums



Environment,
Land, Water
and Planning

Integrated Water Management is a collaborative approach to water planning and management that brings together organisations with an interest in all aspects of the water cycle.

It has the potential to provide greater value to our communities by identifying and leveraging opportunities to optimise outcomes.

Contents

Foreword	1
Acknowledgements	2
Executive summary	3
IWM strategic pathway	4
IWM opportunities	5
Chapter 1 The way forward	6
Introduction	7
Enduring collaboration	8
Outcome areas for the Barwon IWM Forum	10
IWM outcomes	12
Chapter 2 IWM in the Region	14
Regional Context	15
Understanding the needs of our region Vision and Strategic Outcomes	16
Success stories	26
Chapter 3 IWM opportunities	28
IWM opportunities: An overview of projects and strategies	30
Priority Portfolio of IWM projects and strategies	32
Appendix 1	42
IWM stakeholders – responsibilities, legislation and strategies	42
Appendix 2	46
Overview of local government authorities	46

Foreword

The Barwon Region is the fastest growing region in Victoria, outside of urban Melbourne.



With areas of significant natural beauty, it is an increasingly popular tourist and holiday destination but is also known for its quality lifestyle and vibrant economy based on high quality food and wine, health services, education and advanced manufacturing. Greater Geelong is Victoria's second largest city and major economic hub, and will continue to be so with the state's largest growth areas outside Melbourne. Coastal towns and inland centres are also growing strongly, including at Bannockburn in Golden Plains Shire Council which is the fastest growing town in the state at 8.5% per annum. Water has a critical role to play in all that attracts people to the Region including driving population growth, supporting economic growth and development and meeting community needs and expectations.

The Barwon Region Integrated Water Management Forum drives a collaborative and integrated approach to water management that enables sustainable environmental, social, cultural and community prosperity for the Region. Comprised of regional leaders representing traditional custodians, local governments, statutory authorities and government agencies, the Forum has developed this Strategic Directions Statement which sets out the principles, vision and outcomes for integrated water management

and identifies opportunities which will underpin the long term strategic plan for water management across the Barwon Region. The Forum is committed to delivering an integrated regional water strategy which will ensure a secure and sustainable water cycle that supports the long term prosperity of our Region.

This Strategic Directions Statement has identified a number of opportunities to progress integrated water management at a number of scales including taking an integrated approach to planning in townships across the Region as well as delivering on some opportunities that could really transform the Region. The Barwon River Parklands project aims to create a continuous active travel pathway extending from Geelong to Barwon Heads along the Barwon River and will deliver valuable cultural, environmental and social values to the regional community. The Northern and Western Geelong Growth Area of Geelong, the largest urban growth project in regional Victoria with a projected capacity of more than 110,000 new Geelong residents, is taking an integrated water management approach to ensure more sustainable long term outcomes. The Region is also focussing on maximising use of alternative water

sources through the development of the Regional Recycled Water Plan. This Strategic Directions Statement will be reviewed and updated on a regular basis with other opportunities further defined and incorporated and outcomes evaluated over time.

It is a privilege and honour to Chair the Barwon Region Integrated Water Management Forum and work with committed and passionate leaders and managers who are collectively aiming to achieve best practice in water management. This Strategic Directions Statement is a starting point in delivering integrated water management that supports a long term sustainable future for the Barwon Region.

A handwritten signature in black ink, appearing to read 'Carol Boyle'.

Carol Boyle

Chair of the Barwon IWM Forum

Acknowledgments

The Barwon Region covers both Eastern Maar and Wadawurrung (Wathaurung) Country, whose ancestors and their descendants are the traditional custodians of this land.

Eastern Maar lands extend as far north as Ararat and encompasses the Warrnambool, Port Fairy and Great Ocean Road areas. It also stretches 100m out to sea from low tide and therefore includes the iconic Twelve Apostles, while the traditional boundaries of the Wadawurrung people span the Painkalac creek, Aireys Inlet, to Beaufort and Werribee River.

The Forum area is abundant in Aboriginal cultural sites with a majority of these found near waterways and the coast. The Forum stakeholders acknowledge these traditional custodians who have managed land and water sustainably over thousands of generations, and maintain an active connection to Country.

This Strategic Directions Statement has been developed by the Barwon Integrated Water Management Forum (the Forum), which includes the following organisations:



Executive summary

The Barwon Integrated Water Management Region is located in regional Victoria, to the west and south west of the Melbourne metropolitan area.

The Barwon Region (the Region) is currently facing a number of challenges including population growth, climate change impacts, changing community needs and expectations and the continued need to support regional economic growth and development.

The impact of these challenges on the water cycle is complex and interrelated and varying across the Region. These challenges include the availability of water in catchments and changing volume and changing quality of stormwater runoff into waterways and marine environments. The impact for the Region is ensuring we can continue to sustain the long term health and wellbeing of our natural assets and our community.

As our Region continues to grow and prosper, we need to be innovative to ensure water and wastewater services are accessible to a growing region and developing economy. Multiple local and regional agencies have responsibilities in managing the varying aspects of the water cycle, including stormwater, drinking and waste water.

Working together to optimise and integrate our outcomes provides the best opportunity for efficient, effective and meaningful investment in water cycle management, which also supports community outcomes, bolsters local economy and makes our Region more green and liveable. This is known as Integrated Water Management (IWM).

This Strategic Directions Statement (SDS) has been developed by the Barwon IWM Forum (the Forum) which is comprised of regional leaders representing traditional custodians, local governments, statutory authorities and government agencies. IWM is dynamic in nature and consequently it is envisaged that this SDS will be a living document which will be updated to reflect the Region's current priorities and opportunities.

The Forum has agreed to the following vision and strategic outcomes and is committed to collaborating and working effectively together to ensure we continue to deliver on this vision and outcomes.

Vision

Integrated, collaborative management of the water cycle that enables sustainable environmental, social, cultural and community prosperity for the Barwon Region.

Strategic outcomes

1. Safe, secure and affordable supplies in an uncertain future;
2. Effective and affordable wastewater systems;
3. Avoided or minimised existing and future flood risks;
4. Healthy and valued waterways and marine environments;
5. Healthy and valued urban, agricultural, rural and green landscapes;
6. Traditional Owner and community values reflected in place-based planning;
7. Jobs, economic growth and innovation.



Geelong. Courtesy: Barwon Water

IWM strategic pathway

The Barwon IWM Strategic Directions Statement highlights the key challenges in the Region and also identifies collaborative IWM opportunities that can improve resilience and liveability in cities and towns in the Region.

The Barwon Region IWM Forum (the Forum) has collectively agreed to focus on delivery of the following priority opportunities to begin to make some short term inroads into IWM across the Region and focus on responding to issues that require immediate action.

There are additional opportunities, detailed in this SDS, that the Forum has identified as requiring further scoping and definition.



IWM opportunities

Partners of the Forum are committing their best endeavours to ensure priority projects and strategies are progressed in line with the shared vision and strategic outcomes of the Barwon IWM Forum. The key IWM opportunities include (in no priority order):

1 Barwon River Parklands Master Plan review

This project will involve a review of the existing master plan and reinvigorate connections between multiple stakeholders to create a continuous active travel pathway from Geelong to Barwon Heads along the Barwon River.

2 Regional Recycled Water Plan

This ambitious project will develop a plan to reuse 100 per cent of Barwon Water's recycled water produced at 10 Water Reclamation Plants and has the potential to create significant economic and environmental benefit to the Region.

3 Northern and Western Geelong Growth Areas – IWM Plan

An IWM Plan for the Growth Areas will ensure water is considered in an integrated way and that these key growth nodes are developed to support a sustainable and resilient community for years to come.

4 Apollo Bay IWM Plan

An IWM plan for this important coastal town on the Great Ocean Road will consider all aspects of the water cycle system and identify opportunities to address key issues including diversification of water sources, fit for purpose reuse and integrating water into new urban developments.

5 Forrest Wastewater Investigation

This project will work with the Forrest community to investigate opportunities for wastewater improvements in the town, which is facing significant and widespread issues with its current onsite wastewater system. An improved system could greatly benefit the economy and support tourism. The output will be a business case to support the preferred solution.

6 Winchelsea IWM Plan

An IWM plan for Winchelsea, the largest inland town in Surf Coast Shire, will help understand the issues and opportunities for integrated water solutions across the town and will ensure natural and cultural water cycle assets such as the Barwon River are a key feature of the town's future.

7 Clifton Springs IWM Plan

An IWM plan for Clifton Springs will aim to reorientate all infrastructure around connection to the water cycle. The plan will include the Bay and existing natural catchment and landscape features.

8 Sparrowvale Stormwater Master Plan

This project will address stormwater runoff and flood risk from the Armstrong Creek growth area to wetlands with high environmental value, while providing the new community with a useable and high quality public amenity.

9 Birregurra IWM Plan

This project has arisen due to the need to upgrade the wastewater treatment plant, which will coincide with investigation of water supply upgrade options, as well as other key aspects of the town's water cycle.

10 Colac Botanic Pathway and Green Spine

The project will investigate the creation of a continuous recreational pathway connecting key natural assets in Colac, such as the Lake and Barongarook Creek, and will make a major contribution to making Colac a more connected and liveable regional city.

11 Irrewillepe Stormwater Basin Upgrade

This initiative will develop a preferred design option to upgrade an existing but under-performing retarding basin and include additional amenity and environmental outcomes to transform the basin into a showpiece of water sensitive urban design (WSUD).

12 Deakin University Waurin Ponds IWM Plan

The Deakin University Waurin Ponds campus is growing, and this IWM plan will help create a sustainable pathway for that growth to ensure resilience to flooding and climate change and will establish the campus at the leading edge of sustainable precinct and building design.

13 Bannockburn IWM Plan

Bannockburn is the fastest growing town in Victoria at 8.5% per annum, and this plan will ensure that the town is well equipped to manage that growth in a way that maximises environmental, social and economic outcomes using integrated water management.

14 Streetscape stormwater infiltration trial Borough of Queenscliffe

This initiative will respond to localised flooding in Point Lonsdale by developing a streetscape scale stormwater disposal process direct to groundwater that could be transferable to other areas with sandy soils and good infiltration.

15 Stead Park Recycled Water

This project will ensure that recycled water from Barwon Water's Northern Water Plant can be used on the sports facilities adjacent to the plant, by establishing a water use agreement and onsite distribution infrastructure to facilitate its use.



Chapter 1

The way forward

The water cycle system is complex and interrelated, with many stakeholders having a role to play in managing its various aspects. Due to its complexity, it is important we work together and take an integrated, cross agency management approach to achieve the desired outcomes agreed to by the Forum to ultimately plan, manage and deliver better water services.

Introduction

This IWM SDS is an agreement between the stakeholders also known as the Barwon IWM Forum (the Forum). It delves deeper into the challenges facing the Region, issues requiring action and opportunities that require a collaborative response for long term regional prosperity.

The Forum has agreed to the following vision, purpose and principles:

Vision

Integrated, collaborative management of the water cycle that enables sustainable environmental, social, cultural and community prosperity for the Barwon Region.

Purpose

The purpose of the Barwon IWM Forum is to provide a collaborative platform for overseeing, supporting and, where necessary, facilitating water's contribution to community prosperity, resilience and liveability in the Barwon Region.

Principles

The Forum is governed by set of principles developed by the Chair and Forum partners:

1. Water management across the Region must be sustainable and ensure that there will be secure supply of quality water available to meet environmental, cultural and societal needs for the future;
2. Sustainable management of water will enable economic prosperity;

3. Water management includes ensuring healthy communities and healthy environments exist across the Region, enabling communities to experience, enjoy and actively participate in outdoor recreation and cultural practices;
4. IWM is underpinned by regional collaboration.

Background

The IWM Framework for Victoria, released in September 2017, is designed to help regional stakeholders work together, ensuring integrated water cycle management contributes to the liveability of towns and cities in Victoria, with communities at the centre of decision making. Central to the IWM Framework is the establishment of high level IWM forums to help stakeholders work more effectively together in applying IWM in practice within a defined region. The IWM forums will identify, prioritise and oversee the implementation of critical collaborative opportunities. (Further information is outlined in the IWM Framework for Victoria, available at <https://www.water.vic.gov.au/liveable/resilient-and-liveable-cities-and-towns/iwm-framework>.)

The aim of the Forum, set out by an agreed Terms of Reference, is to build on and further develop the relationships and capability that exist in the Region. The Forum will enable an IWM vision and strategy that will provide direction for priority IWM opportunities and process transformations that can support resilient and liveable cities and towns in the Region into the future.

The Forum works with the Barwon Integrated Water Cycle Management (IWCM) Network, an established collaborative practitioner network initiated in 2012. The IWCM Network has a defined process for IWM across the Region and works together to share learnings and deliver regional projects.

In addition, the State Government has established a Resilient Cities and Towns (RCT) Reference Group which supports the implementation of IWM and planning across the state. The Reference Group provides advice to the Department of Environment, Land, Water and Planning (DELWP) on the development and implementation of key initiatives in relation to policy, processes or knowledge gaps.

Enduring collaboration

The Barwon IWM Forum

The Forum comprises of key organizations (Table 1) who manage various aspects of the water cycle and how it contributes to the liveability of towns and cities across the Region.

Table 1 Barwon IWM Forum members

Organisation	Responsibilities
Councils – Borough of Queenscliffe City of Greater Geelong Colac Otway Shire Golden Plains Shire Surf Coast Shire	<p>Councils provide a wide variety of services to their municipalities and enforce various federal, state and local laws for their communities. These services include stormwater management, public health, traffic, parking, animal management and land use planning, reserve and asset management.</p> <p>Community infrastructure maintained by councils in Victoria is estimated to be valued at over \$40 billion and includes roads, bridges, drains, town halls, libraries, recreation facilities, parks and gardens.</p>
Traditional Owner Corporations – Wathaurung Aboriginal Corporation Eastern Maar	<p>Traditional Owner Corporations hold significant rights to the land and have cultural obligations to manage traditional lands and waters. They are equal partners in ensuring catchment health. In many cases, Traditional Owners rights over Crown land and waterways are recognised in settlement agreements (covering over 40 parks and reserves) and governance arrangements to ensure their perspectives, knowledge and interests are valued.</p>
Barwon Water	<p>Barwon Water (Barwon Region Water Corporation) is Victoria's largest regional urban water corporation, providing high quality water, recycled water and sewerage services to urban and rural customers across 8,100 square kilometres. Our water and sewerage services underpin economic, social and environmental dimensions of regional prosperity.</p>
Corangamite Catchment Management Authority (CCMA)	<p>The Corangamite CMA's role is defined in accordance with the <i>CaLP Act 1994</i> and the <i>Water Act 1989</i> statement of obligations. Specifically this is to facilitate the planning for a Regional Catchment Strategy and associated strategies that inform NRM investment priorities. In partnership, the CMA provide services relating to integrated waterway management for the protection, maintenance and improvement of river health.</p>
Southern Rural Water Corporation	<p>The Corporation operates irrigation districts at Maffra, Bacchus Marsh and Werribee, manages seven major dams and licences groundwater users and river diverters across the southern half of Victoria.</p>
Department of Environment, Land, Water and Planning (DELWP)	<p>In partnership with its agencies, the Department supports Victoria's natural and built environment to ensure economic growth and liveable, sustainable and inclusive communities. The Department assists the minister, develops and implements state policies and programs, and oversees the administration of organisations including catchment management authorities and water corporations.</p>
Department of Health and Human Services (DHHS)	<p>The Department develops and delivers policies, programs and services that support and enhance the health and wellbeing of all Victorians.</p>

Strategic alignment

The Forum will, where possible, establish relationships with existing partnerships including the G21 Geelong Regional Alliance and the Corangamite Catchment Management Regional Partnership to maximise collaborative efforts across the Region in realising opportunities. The Forum also needs to be aware of the relevant legislation and regional strategies that fit under the IWM banner and better understand the interrelationships and implications for IWM and the Region's liveability (Refer Appendix – IWM Stakeholders – responsibilities, legislation and strategies).

Role of the Forum

The role of the Forum is to collectively provide leadership, authority and strategic guidance for IWM planning across the Region with a focus on:

- identifying, prioritising and supporting progress of IWM opportunities using an agreed criteria or process;
- discuss and confirm the roles and responsibilities of members, and identify and invite appropriate participants from other organisations, when relevant;
- discuss and confirm the principles to be adopted for developing IWM Plans, and resolving resourcing issues related to IWM planning and programs including, when necessary, formal funding agreements;

- provide a coordinated approach to inform regional policy and strategies, including Sustainable Water Strategies and Long-Term Water Resource Assessments;
- Provide vision, direction and endorse the SDS for the Region for the Minister for Water to be reviewed at least every two years or as decided by Forum participants.

The Forum itself meets 3-4 times per year, and includes the senior executives of each organization. However, the bulk of the work is undertaken at the practitioner level by the IWCM Network and sub working groups, who have been nominated by each organization.



West Gellibrand reservoir. Courtesy: Barwon Water

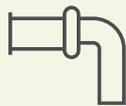
Outcome areas for the Barwon IWM Forum

The Forum is taking a systems thinking approach to the water cycle. We need to consider the regional and local perspectives for IWM and the challenges facing the Region. We have agreed to the following strategic outcomes and objectives (summarised in Table 2) and are committed to collaborating and working effectively together for our Region's long term prosperity.



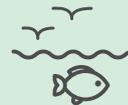
Safe, secure and affordable supplies in an uncertain future

As the Region continues to develop and grow, we need to provide safe, secure and affordable water supplies across the Region. There is potential for alternative water supplies such as recycled water and stormwater to make a significant contribution to alleviating medium term threats to drinking water supply security including during peak holiday periods (e.g. Lorne, Apollo Bay).



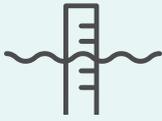
Effective and affordable wastewater systems

The Black Rock Water Reclamation Plant is the largest in the Region and services the greater Geelong, Bellarine and Surf Coast areas. Many smaller townships in the Region utilise domestic scale septic tank systems. Municipal councils are responsible for regulating domestic wastewater management. Golden Plains Shire, Colac Otway Shire and Surf Coast Shire are in the process of reviewing this approach. Lack of sewerage services in some small, yet growing towns such as Forrest and Inverleigh are a challenge for the Region due to their inability to service growing populations and the potential impacts of overflows into the environment.



Healthy and valued waterways and marine environments

With climate change impacting river and lake water quality in addition to treated wastewater discharge via ocean outfalls and runoff from growing industrial sites, our waterway and marine environments are being impacted. We need to collaborate to ensure we minimise our impacts on these ecosystems. They provide us immeasurable health and wellbeing benefits and it is critical to clarify roles and responsibilities around rural drainage and river management.



Avoided or minimised existing and future flood risks

There is increased pressure on local government stormwater systems and overland flooding provisions, due to a range of factors including ageing infrastructure, increasing urbanisation and impermeable surfaces, urban consolidation and increasing frequency of intense rainfall events.

Accordingly, flood risk is a growing concern in urban areas, downstream land uses and the receiving water bodies such as the bay, rivers and lakes. There is potential for urban development areas both greenfields and brownfields sites through innovative IWM approaches to minimise localised flooding risk and contribute to catchment based stormwater strategies to address increases in flood volume and frequency. An integrated approach to stormwater could also reduce the demand on drainage assets (e.g. Colac West – Deans Creek).



Healthy and valued urban, agricultural, rural and green landscapes

Recreational and green spaces provide physical and mental health and wellbeing benefits for communities. Collaborating to ensure there is sufficient healthy urban spaces is a core focus. The Region also has highly valued natural assets which have cultural heritage significance and attract significant numbers of tourists. We need to ensure we work together to sustain the health of these natural assets. In addition, we have a growing agricultural sector which rely on healthy landscapes and soils to provide productive land. This outcome supports a growing economy and a prosperous Region.



Traditional Owner and community values reflected in place-based planning

We acknowledge Aboriginal people as the traditional custodians of the land and water on which they rely. The traditional custodians have a strong connection to water as a vital part of their life and culture. They are represented by the five four Aboriginal group across the Barwon Region including the Wadawurrung, Kuu Yang Maar, Eastern Maar and Guli-Gad.

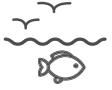


Jobs, economic growth and innovation

Water will play a key role in supporting economic growth and development including industry, a growing agricultural sector and a thriving tourism sector. Maintaining the quality of aquatic and coastal environments is core to the tourism industry in the Region. Being innovative in how we ensure water is available for growing and diverse industries requires us all to work together and collectively make decisions that result in the best outcomes.

IWM outcomes

Table 2 Summary of outcomes and objectives

Outcomes			
			
Safe, secure and affordable supplies in an uncertain future	Effective and affordable wastewater systems	Avoided or minimised existing and future flood risks	Healthy and valued waterways and marine environments
Objectives			
A diverse range of water supplies and resources	Meets public health and environmental standards	Community and property resilience to local flood risk	Waterway health is understood and improved
Water quality meets regulatory standards and community expectations	Effective and affordable sewerage systems	Prevent the likelihood of contamination via runoff	Marine environment health is understood and managed
Efficiently managed water and demand	Waste-to-resource opportunities are maximised including recycled water and energy	Meets best practice water quality requirements	Establish a clear position on roles and responsibilities for rural drainage and river management including water quality and security of supply
Secure and diverse water supplies for industry, agriculture, health, culture, recreation and economy		Location and use of retention systems to support re-use initiatives	Groundwater dependent ecosystems are well managed
Water available to maintain valued green community assets		Establish and preserve overland flow paths	
Managing high quality groundwater for agricultural purposes		Develop regional urban stormwater management policy and strategy	

The outcomes are what we are seeking to achieve over the longer term from the deliberate application of IWM across the Region. These outcomes have been derived from those articulated in Water for Victoria and the IWM Framework for Victoria. Each of these seven outcomes will be key in shaping the liveability, prosperity and resilience of our cities and towns. The outcomes will assist in developing the strategy and prioritising the IWM opportunities for the Region.



Healthy and valued urban, agricultural, rural and green landscapes



Traditional Owner and community values reflected in place-based planning



Jobs, economic growth and innovation

Active and passive recreation supported by water

Aboriginal cultural values associated with waterways acknowledged, understood, protected and applied

IWM enables jobs and economic growth

Improved connectivity and access to green and blue spaces

Effectively engaging communities to better understand cultural and community values

Ensuring security and diversity of supply to enable economic growth

Urban landscapes retain moisture for cooler, greener cities and towns

Local water related risks and issues understood and managed

Leveraging knowledge and resources to support innovative and collaborative outcomes

Waterways and coastal environments accessible as valuable open space



Chapter 2

IWM in the Region

Understanding why an integrated approach to water planning and management is critical for the Barwon IWM Region now and for the future.



Barwon

POPULATION GROWTH

298,780 (2016)

378,268 BY 2031

21%
INCREASE



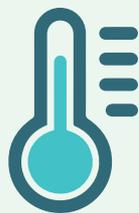
THE REGION

- AGRICULTURAL LAND & PLANTATIONS **79%**
- NATIVE VEGETATION **12%**
- URBAN AREAS **8%**
- WATER BODIES **1%**



CHANGE IN RAINFALL

7-8% DECREASE
BY 2070



TEMPERATURE

AN INCREASE OF
0.6-1.2C
IN BARWON SOUTH WEST
BY 2030

WATERWAYS

BARWON MOORABOOL

57% **45%**

IN A 'MODERATE'
STREAM CONDITION



Source:

Victoria in future 2016.

G21 Regional Growth Profile 2014.

Climate Ready Victoria – Barwon South West factsheet (2016).

Corangamite Waterway Strategy 2014-2022.

Understanding the needs of our region

Water and the water cycle is a major aspect of the long term sustainability and prosperity of the Barwon Region. It is vital in ensuring our natural assets remain healthy and vibrant, and ensuring the long term health and wellbeing of:

- our community – ensuring access to water services and green and active spaces;
- our economy – ensuring water is available to support a growing economy;
- our environment – ensuring our natural assets continue to remain healthy and vibrant.

The local government agencies (detailed in Appendix 2) within this Region are responding to challenges which include meeting the needs of a growing economy, population growth, changing community needs and expectations and impacts of climate change. We understand the regional context is constantly changing and will need to be reviewed and updated regularly.



Gardening Expo. Courtesy: Barwon Water



The following starts to delve deeper into the challenges we are facing across the Region. These challenges include:

Population growth

It is estimated the population of the Barwon Region will increase from 298,780 in 2016 to 378,268 by 2031 (VIF2016). Impacts of growth on the Region include:

- increased demand for land and housing;
- increased demand for services including water, sewerage and drainage;
- increase demand for recreational open space, green space, access to natural areas;

- poor urban design practices contributing to the negative health impact of some communities across the Region;
- urbanisation causing increased runoff volumes and the introduction of a variety of pollutant sources into waterways and marine environments.

The Region is a destination for national and international visitors resulting in a dramatic increase in population during holiday periods, especially along coastal areas.



Population growth. Courtesy: Barwon Water

a. Issues

The Forum has identified a number of issues facing the Region due to population growth over the next five and 10-15 years (Table 3).

Table 3 Issues in response to population growth

5 years	10 – 15 years
Policy and planning supporting IWM in practice	Balancing increasing population growth including new users demand (ie. industry and agriculture) with decline in water availability and seasonal fluctuations
Aligning regional policy and land use planning	Balancing development yield vs other benefits (eg. environment)
Managing changing demand for water including industry changes and seasonal fluctuations in tourism	Diversifying water supplies (increasing over time)
	Improving small town sewerage
	All water users need to better understand the value of water and take action to be sustainable with their water use
	Facilitating more peri-urban agriculture
	Meeting new infrastructure challenges

b. Opportunities

The Forum and IWCM Network have identified opportunities in response to the issues relating to population growth (Table 4), some of which are yet to be more clearly defined.

Table 4 Opportunities for responding to population growth

Opportunity	Description	Status
Plan	North and Western Geelong Growth Area – IWM Plan	Priority
Policy	Integration of IWM with planning and policy	To be defined
Build capacity	IWM training delivered to build capability in IWM planning and organisational change	To be defined
Investigation	Future State report – taking a systems approach	To be defined

Climate change

The impacts of climate change pose a significant risk for the Barwon Region due to:

- **Sea level rise and coastal erosion** will cause infrastructure assets to be at risk. Sea level is projected to increase in the order of 0.08 to 0.18m above the 1986–2005 levels (Climate Resilient Communities);
- **Temperature rise** where warming is projected to be around 0.6 to 1.2°C above that of 1986–2005 (South West Climate Change portal). Temperature rises will result in increased heat-related stress and mortality among aged and 'at risk' populations as well as a higher risk of bush fire. Inland rural areas may be most vulnerable to

the impacts of temperature rise as are urban developments that have not accommodated enough green space to provide shade;

- **Reduced rainfall resulting in reduced run off** into waterways, impacting waterway health as well as accessibility of surface water for provision of drinking water, irrigation for recreation and supporting a growing agriculture sector. The major waterways that are of significance across the Region includes the Barwon and Moorabool Rivers. The majority of stream lengths in the Barwon and Moorabool basins are in moderate or poor condition (CCMA *Waterway Strategy 2014–2022*);

- **Changes in rainfall patterns resulting in more high intensity rainfall** in urban areas impacting urban drainage and increasing the likelihood of sediment, nitrogen, and other pollutant loads into waterways and marine environments;
- **Importance of minimising flood risk through flood mitigation** given the increased intensities from rainfall events, chance of flash flooding and reliance on overland flow paths to manage the risk;
- **Significant risks to underground water system infrastructure assets**, including drinking water pipes, sewerage and stormwater infrastructure. It is critical to ensure planning and design decisions ensure these assets are resilient to climate change.



Johnston Park flood. Courtesy: Barwon Water

a. Issues

The IWM Forum has identified a number of issues facing the Region due to climate change over the next five and 10-15 years (Table 5).

Table 5 Issues associated with climate change impacts

5 years	10 – 15 years
Stormwater management in Geelong and regional areas, including potential impacts on Ramsar sites	<p>Responding to the increasing pressure on stormwater infrastructure and managing high rainfall events</p> <p>Clarifying management responsibilities for climate change planning and response</p> <p>Ensuring adequacy of design for 1:10 ARI storms events given climate impacts</p> <p>Responding to coastal sea level rise</p> <p>Ensuring security of supply to industry and impacts on others (eg. irrigated agriculture and recycled water)</p> <p>Retaining water at the source, where possible</p>

b. Opportunities

The Forum and IWCM Network have identified opportunities in response to issues relating to climate change (Table 6), some of which are yet to be more clearly defined.

Table 6 Opportunities in response to the impacts of climate change

Opportunity	Description	Status
Plan	Barwon River parklands master plan review	Priority
Investigation	State of marine coastal and waterways environment report	To be defined
Plan	Sparrowvale stormwater master plan	Priority
Project	Irrewillepe stormwater basin upgrade	Priority
Plan	Deakin University (Waurm Ponds) IWM plan	Priority
Project	Point Lonsdale streetscape stormwater infiltration trial	Priority

Changing community needs and expectations

The Region has a strong indigenous cultural background and a changing population demographic due to national and international people migrating to the Region. Water is an important aspect of aboriginal culture. We need to ensure communities, regardless of their demographics have access to recreational, green and natural spaces that in turn support their physical and mental health.

Areas of socio-economic disadvantage across the Region includes Bell Park, Corio, Norlane, St Leonards, Thomson, Whittington, Indented Head, St Leonards, Portarlinton, Winchelsea and Colac. The range of diversity in culture, demographics and socio economic factors result in varying community

needs and expectations across our Region that we are having to continue to review and respond. These community needs and expectations include:

- **Acknowledging and protecting our cultural heritage.** Water is the lifeblood for Country and the basis of many creation stories. Waterways are a historical and ongoing source of food, fibre and medicine, important place to camp, hunt, fish, swim and connect with traditional culture and stories (CCMA Waterway Strategy 2014-2022). It is important waterways are healthy and flowing to maintain cultural heritage and traditions.
- **Ensuring we continue to provide for the growing health and wellbeing of our community.** The G21 region health profile states that the proportion of people across the

Region who rated their health as excellent or very good ranged from 52.7% to 59.0% vs 46.6% except in Greater Geelong where it was 45.1%. Rates of population in all LGAs that had sufficient levels of physical activity ranged from 65.6% to 78.3% vs 63.9%. Physical activity contributes to helping prevent diseases including cardiovascular disease, diabetes, some cancers, injury and control and the promotion of mental health including providing a sense of wellbeing and creating social connections. Low socio economic regions have generally lower level of health and wellbeing. Water is an essential part of mental health and wellbeing through supporting green open spaces which enable outdoor activities and connections with the environment.



Traditional smoking ceremony – Wadawurung. Courtesy: Barwon Water

a. Issues

The Forum has identified a number of issues facing the Region due to changing community needs and expectations over the next five and 10-15 years (Table 7).

Table 7 Issues arising due to changing community needs and expectations

5 years	10 – 15 years
Clarifying responsibilities for rural drainage and river management	Better understanding water's role in building health resilience into cities and towns
Ensuring the role of healthy urban waterways and connected open space is considered in enhancing the wellbeing and liveability of the Region	Ensuring the cultural and environmental values of water is acknowledged as strongly as the social and economic values
Ensuring water is considered as an enabler of broader outcomes	Increasing the water literacy across the Region
Establishing community water values and future aspirations regarding water cycle management	
Ensuring community concerns regarding extraction of water from the local environments for use by others is understood and managed	
Ensuring water management and IWM has a greater focus in the Anglesea Futures process	

b. Opportunities

The Forum and IWCM Network have identified the opportunities in response to issues relating to community needs and expectations (Table 8), some of which are yet to be more clearly defined.

Table 8 Opportunities in response to changing community needs and expectations

Opportunity	Description	Status
Plan	Winchelsea IWM plan	Priority
Plan	Apollo Bay IWM plan	Priority
Plan	Birregurra IWM plan	Priority
Plan	Clifton Springs IWM plan	Priority
Project	Colac botanic pathway and green spine	Priority
Plan	Bannockburn IWM Plan	Priority
Project	Stead Park recycled water project	Priority
Plan	Anglesea Futures IWM plan	To be defined

Economic growth and development

According to the G21 Economic Development Strategy, *'The Region is geographically, economically and culturally diverse. The Region has undergone significant transformation from a major heavy manufacturing centre over the last 15 years, diversifying into higher technology manufacturing, healthcare, education and other sections as well as expanding its cultural offering.'*

The City of Greater Geelong is a major centre for investment with over 17,000 businesses and a highly skilled labour force of 110,632 (Enterprise Geelong). The total number of businesses in Greater Geelong in June 2017 was

17,271. This represents an increase of 826 businesses (5.02%) from the June 2015 total of 16,445 businesses and compares to an increase of 1,242 businesses (5.29%) in the Region (Remplan).

The agriculture sector across the Region is expanding into more intensive agriculture, such as poultry, which will enhance existing food processing activity in Geelong and Colac (G21 Regional Growth Plan). To support this development, we need to ensure water will be available, seeking alternative supplies to drinking water where possible.

Tourism is also an important contributor to the Region's economy with the Region home to many tourism assets and events. The number of visitors to

the Region is expected to rise to over nine million by 2030. This has a significant impact on services in coastal towns where populations can triple during holiday periods.

Ensuring businesses have access to water and sewerage services is essential. In turn businesses will need to be efficient in how they use water and have an ability to access affordable alternative water sources where possible. It is important the practices of businesses do not have a detrimental impact on our waterways and marine environments through pollution runoff. Coastal towns should have the ability to develop and grow and have access to secure water and sewerage services that support fluctuations in populations due to tourism.



Tourism and economic growth. Courtesy: City of Greater Geelong

a. Issues

The Forum has identified several issues facing the Region due to IWM supporting growing economic and development over the next five and 10-15 years (Table 9).

Table 9 issues arising due to economic growth and development

5 years	10 – 15 years
Developing opportunities for tourism and the arts	Ensuring affordability of diverse water supplies to support economic growth activities and appropriate use of water supplies e.g. recycled water, stormwater
Managing water security for coastal communities	
Ensuring a plan is developed to respond to community expectations around Lake Colac	Ensuring security of potable supply
Developing a long term plan for potable and alternative supplies that supports economic development and the environment	

b. Opportunities

The Forum and IWCM Network have identified opportunities in response to issues relating to economic growth and development (Table 10), some of which are yet to be more clearly defined.

Table 10 Opportunities in response to economic growth and development

Opportunity	Description	Status
Investigation	Forrest wastewater investigation	Priority
Plan	Regional recycled water plan	Priority
Plan	Lake Colac masterplan	To be defined

Success stories

There has been a lot of great work over the years by state and local government, regional agencies, communities, planning bodies and boards to identify what we need to do to address the challenges and opportunities in the Region. Three completed projects are outlined here.

Colac IWCM Plan

The Colac Integrated Water Cycle Management (IWCM) Plan is a strategic blueprint for how the urban water cycle can make a positive contribution to Colac's liveability. The plan applies a whole of water cycle system approach to identify and develop opportunities to enhance aspects of the urban water cycle to make a positive contribution to broader liveability aspirations for the city. Its primary objectives were to:

- Raise awareness of the role of the water cycle in achieving Colac's future aspirations for liveability, sustainability and productivity; and

- Identify opportunities for IWCM solutions to enhance Colac's ability to become a healthier, greener, 'botanic' city.

The plan has led to implementation of rainwater gardens in the centre of Colac and the securing of a grant to develop detailed designs to upgrade the Irreweillipe Road Retarding Basing. The plan has also informed the Colac 2050 Strategic Planning project to ensure that future growth of Colac is undertaken in accordance with IWM principles.



Colac Lake. Courtesy: Barwon Water



Geelong. Courtesy: Barwon Water

Jan Juc Creek Daylighting

In 2012, the 'Friends of Jan Juc Creek Reserve' (FJJCR) community group presented Council with the idea of reinstating sections of the Creek to a more natural state by removing underground drainage infrastructure and recreating the Creek channel (daylighting). The project involved decommissioning and modifying the existing underground drainage, returning stormwater flows to the surface of the Creek, building a sedimentation basin, and reshaping Creek banks. Extensive replanting of indigenous species was also

undertaken to restore natural habitats. Daylighting the Creek enhanced the biodiversity and public amenity, strengthened the ecological value of the waterway and improved stormwater runoff quality.

Urban Water Planner

Integrated Water Cycle Management (IWCM) is about managing the interaction between the urban environment and the water cycle. The urban water planner provides a resource for urban developers, consultants and planners to

consider water cycle aspects in new urban development including natural aspects (e.g. waterways and floodplains), built aspects (e.g. major drainage, land use, open space and water sensitive urban design), and servicing aspects (e.g. drinking water, sewerage and alternative, fit-for-purpose water sources). By working with the relevant agencies and incorporating IWCM principles early in the process, developers and consultants can save time, resources and money.



Chapter 3

IWM opportunities

A portfolio of IWM projects and strategies for which IWM collaborative partners have committed themselves to applying their best endeavours to progress.



Thirty-eight IWM opportunities have been identified with 15 prioritised by assessing the extent of likely impact, or benefit of the opportunity if achieved and 'ease of implementation' of the opportunity. The IWCM Network will continue to develop and define the other opportunities that are not currently priorities. Once defined, these opportunities will be added in further reviews and updates of the SDS.

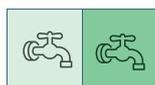
IWM opportunities: An overview of projects and strategies

A summarised list of priority IWM opportunities as endorsed by the Forum is shown in the table below, with more detail in the following section.

IWM opportunity	Strategic outcomes							Location	Spatial scale
Barwon River Parklands Master Plan Review								Barwon River from Geelong Ring Road through to Barwon Heads	Forum Area
Regional Recycled Water Plan								At all water reclamation plants	Forum Area
North and Western Geelong Growth Area – IWM Plan								Geelong	Region
Apollo Bay IWM Plan								Apollo Bay	Region
Forrest Wastewater Investigation								Forrest	Town
Winchelsea IWM Plan								Winchelsea	Town
Clifton Springs IWM Plan								Clifton Springs and Drysdale	Town
Sparrowvale Wetland Flood/ Stormwater Master Plan								Marshall	Precinct
Birregurra IWM Plan								Birregurra	Town
Colac Botanic Pathway and Green Spine Project								Colac	Town
Irrewillepe Stormwater Basin Upgrade Plan								Colac	Town
Deakin University Waurn Ponds IWM Plan								Deakin University Waurn Ponds campus	Town
Bannockburn IWM Plan								Bannockburn	Town
Point Lonsdale Streetscape Stormwater Infiltration Trial Project								Point Lonsdale	Precinct
Stead Park Recycled Water Project								Stead Park, Corio	Lot Scale

The status of each IWM opportunity included in the Priority Portfolio reflects the phase of work to be undertaken in this time period.

Shade scale



No Impact Impact

Lead	Status	Links to other strategies
Corangamite Catchment Management Authority		G21 Environment Pillar; Corangamite Catchment Partnership
Barwon Water		Urban Water Strategy 2018 (Barwon Water)
City of Greater Geelong		Geelong Settlements Strategy
Barwon Water		Barwon Water Strategy 2030
Barwon Water		Barwon Water Strategy 2030
Surf Coast Shire		Growing Winchelsea; G21 Planning & Services Pillar
City of Greater Geelong		
City of Greater Geelong		RAMSAR Management Plan
Colac Otway Shire		Colac 2050
Colac Otway Shire		Colac 2050; G21 Planning & Services Pillar
Colac Otway Shire		Colac 2050
Deakin University		
Golden Plains Shire		Bannockburn Structure Plan; G21 Economic Development Pillar
Borough of Queenscliffe		Council Plan 2017-2021, Strategic Objective 1: Community Wellbeing
Barwon Water		Barwon Water Strategy 2030

Project opportunity status**Strategy opportunity status**

Priority Portfolio of IWM projects and strategies



Barwon River. Photographer: Carol Boyle

ACTION BR1

Plan – Barwon River Parklands Master Plan Review

The Barwon River Parklands is a long-envisioned idea for creating a continuous active travel pathway extending from Geelong to Barwon Heads along the Barwon River. Incorporated as a strategically planned component of the G21 Adventure Trails Priority Project, the Parklands project builds on the popular recreation opportunities of the existing trail network through Geelong to create an iconic walking and cycling route along the River which has valuable cultural, environmental and social values to the regional community. The project would involve a review of the master plan and reinvigorating the connections between multiple stakeholders to identify practical initiatives and projects that can contribute to achieve the long term vision. There are opportunities to leverage and integrate with other projects such as recreation/amenity upgrades within the Geelong segment and Barwon Water’s land at Aqueduct Park.

Next steps:

Corangamite CMA to hold stakeholder meeting in August 2018.

CCMA in conjunction with partners to seek funding.

Status	Endorsed by partners as a priority project for the Corangamite Catchment Partnership (CPA) Agreement.
Lead agency	Corangamite Catchment Management Authority
Location	Barwon River from Geelong ring road through to Barwon Heads
Timeframe	5-10 years
Partners	Parks Vic, Barwon Water, City of Greater Geelong and Regional Development Victoria
Scale	Forum Area

ACTION BR2

Plan – Regional Recycled Water Plan

Barwon Water currently reuses 25% of the Region's recycled water produced at 10 Water Reclamation Plants. In keeping with its commitment to achieve Zero Waste, Barwon Water is developing a strategic plan to reuse 100 per cent of this recycled water. This ambitious target will require a significant step-change and has the potential to create significant benefit to the Region supporting healthy green urban, rural and agricultural landscapes as well as the potential for jobs and economic development. The Plan will consider short, medium and long term opportunities and a strategic framework to accommodate future needs.

Next steps:

Commence development of the recycled water plan.

	
Status	In progress
Lead agency	Barwon Water
Location	At all water reclamation plants
Timeframe	1-2 years
Partners	
Scale	Forum Area

ACTION BR3

Northern and Western Geelong Growth Areas – IWM Plan

The Northern and Western Geelong Growth Area is the largest urban growth project in regional Victoria with the potential to welcome more than 110,000 new Geelong residents. The project will address the long-term growth needs of Geelong, facilitating diverse and affordable housing and employment opportunities for the City over the coming decades. The Northern Geelong Growth Area, in Lovely Banks, is anticipated to deliver up to 18,000 new dwellings for a population of approximately 48,000 residents. The Western Geelong Growth Area, in Batesford, is anticipated to deliver up to 22,000 new dwellings for a population of approximately 62,000 residents. The Western Geelong Growth Area includes more than 20 kilometres of river frontage to the Barwon and Moorabool Rivers and Cowies Creek.

An IWM Plan developed for this Region will ensure water is considered in an integrated way including ensuring sustainable water use, impacts of urban development on local waterways is managed and the Region supports continued economic growth and development and supports the health and wellbeing of the community.

Next steps:

Community engagement underway.

	
Status	In progress
Lead agency	City of Greater Geelong
Location	Greater Geelong
Timeframe	5 years
Partners	
Scale	Geelong

ACTION BR4

Plan – Apollo Bay IWM Plan

Apollo Bay is a major tourist destination on the Great Ocean Road, increasing significantly in population during summer with holiday residents. At the same time, the township is experiencing increasing localised population growth. This is putting pressure on the limited potable water supplies available locally. Despite recent investment in off stream storage for water supplies, the town faces a medium term water security risk, which is elevated in summer peak periods.

An IWM plan will consider all aspects of the water cycle system within the town and identify opportunities to address key issues including diversification of water sources, stormwater harvest and reuse, recycled water reuse and integrating water into new urban developments.

Next steps:

Develop project charter incorporating project objectives, governance, outcomes, risk etc.

	
Status	In progress
Lead agency	Barwon Water
Location	Apollo Bay
Timeframe	1-2 years
Partners	Colac Otway Shire
Scale	Town

ACTION BR5

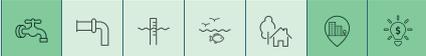
Investigation – Forrest Wastewater Investigation

An assessment of wastewater management in Forrest in November 2017 identified significant and widespread issues relating to onsite wastewater management across the town. The continued growth in tourism supporting local economic growth and the increasing pressure this is placing on existing wastewater systems in the town is of immediate priority. Barwon Water and Colac Otway Shire are partnering with the Forrest community to investigate opportunities for wastewater improvements in the township.

The outcome will be a business case to support the preferred wastewater solution for the town. This will not only improve the environment but support further economic development, jobs and growth in the town.

Next steps:

Barwon Water and Colac Otway Shire will prepare a business case for the preferred option to be presented to the COS and BW Boards including an agreed funding model to deliver a solution.

	
Status	In progress
Lead agency	Barwon Water
Location	Forrest
Timeframe	December 2018
Partners	Colac Otway Shire and Regional Development Victoria
Scale	Town

ACTION BR6

Plan – Winchelsea IWM Plan

Winchelsea is the largest inland town in the Surf Coast Shire and is a nominated growth node. The Shire has aspirations for the town to grow from its current population of 1,600 to 10,000 by 2050 which will include over 3600 new residential dwellings.

The town is surrounded by agriculture, has a retail centre, and numerous community facilities. The Barwon River flows through the town which has a strong connection to water and landscape.

An IWM plan will help the identify key issues for Winchelsea's water cycle system and identify opportunities to enhance the township through the application of IWM solutions, including greater use of alternative water sources and water sensitive urban design. It will also ensure natural and cultural water cycle assets such as the Barwon River are a key feature of the town's future.

Next steps:

IWM plan to be completed by January 2019.

IWM opportunities prioritised and assessed using cost allocation framework.

	
Status	In progress
Lead agency	Surf Coast Shire
Location	Winchelsea
Timeframe	1-5 years
Partners	Surf Coast Shire, Barwon Water, CCMA, Wathaurung, DELWP
Scale	Town

ACTION BR7

Plan – Clifton Springs IWM Plan

The Clifton Springs landscape is identified through its relationship to the coast. There are many water assets shared by the community including reserves, water bodies, creek lines and the coast.

An IWM plan for Clifton Springs should aim to re-orientate all infrastructure around the notion of connections to the existing natural catchments and landscape features.

Next steps:

IWM plan to be completed by end of 2018.

Further IWM opportunities which will be prioritised and delivered.

Funding options discussed.

	
Status	In progress, being led by Barwon Water with COGG and BW funding
Lead agency	City of Greater Geelong
Location	Clifton Springs and Drysdale
Timeframe	5-10 years
Partners	Barwon Water, CCMA, Clifton Springs Golf Club
Scale	Town

ACTION BR8

Plan – Sparrowvale Stormwater Master Plan

Armstrong Creek, south of Geelong, is a rapidly expanding residential precinct. The proposed Sparrowvale Wetland, which utilises an area of land with existing ephemeral freshwater meadow, was identified as the ideal location for a series of proposed constructed wetlands which address flooding risk and manage stormwater quality and quantity from the developing area.

The location of the proposed wetlands within a high value environmental area presents a unique and challenging opportunity as the City must ensure that our natural landscapes thrive in the face of expanding development pressures.

This project should also provide a usable community amenity that becomes a valued social asset as much as an important stormwater treatment area.

Next steps:

Drainage Design will be undertaken in 2018/2019.

Status	Wetland Master Plan and Drainage Design has only just commenced
Lead agency	City of Greater Geelong
Location	Marshall
Timeframe	1-5 years
Partners	
Scale	Precinct

ACTION BR9

Plan – Birregurra IWM Plan

Birregurra is a small rural township located in the heart of the Colac Otway Shire.

In 2012, Birregurra was connected into a reticulated sewerage system. The receiving water reclamation plant now requires upgrade to deal with the disposal of increased recycled water. Barwon Water is also investigating water supply upgrade options including connecting the town to Colac and removing the local water treatment plant.

An IWM plan will consider all aspects of the water cycle system within the town and identify opportunities to address key issues including water sources, stormwater harvest and reuse, wastewater and recycled water reuse opportunities surrounding the local water reclamation plant.

Next steps:

Develop project charter incorporating project objectives, governance, outcomes, risk etc.

Status	In progress
Lead agency	Barwon Water
Location	Birregurra
Timeframe	2-5 years
Partners	Colac Otway Shire, CCMA
Scale	Precinct



ACTION BR10

Project - Colac Botanic Pathway and Green Spine

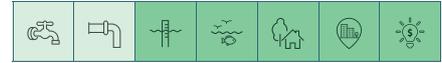
This initiative proposes the creation of a continuous recreational pathway connecting the town's key water cycle assets of Lake Colac, Barongarook Creek, Beechy Precinct and back via a western edge route. Nicknamed the Botanic Link Pathway, this route would make a major contribution to support Colac as a more connected, liveable regional city.

The initiative links in with growth projected for 2050, particularly the growth of the town to the west where flooding issues will need to be managed through IWM strategies.

Next steps:

Investigations into pathway links.

Investigations into flood mitigation measures along Dean Creek.



Status	Not progressed at this stage; requires council support
Lead agency	Colac Otway Shire
Location	Colac
Timeframe	1-5 years
Partners	DELWP, Barwon Water
Scale	Town

ACTION BR11

Project - Irrewillepe Stormwater Basin Upgrade

This initiative proposes to upgrade the existing but under-performing 7.7ha Irrewillepe Road Retarding Basin to be a showpiece of what can be achieved through water sensitive urban design (WSUD). The Basin is not performing its hydraulic function effectively, has become weed infested and provides no public amenity value.

Under this initiative, the Basin would be transformed into a fully functional, valued urban water asset which provides drainage retardation, recreation and amenity values, conservation values and potentially treated stormwater to service the nearby Colac Golf Course. The project will develop a concept design which can then be used to procure and construct the asset.

Next steps:

A detailed design will be developed by Nov 2018.

Seek funding for construction in 2019.



Status	In progress
Lead agency	Colac Otway Shire
Location	Colac
Timeframe	1-5 years
Partners	DELWP, Barwon Water
Scale	Town

ACTION BR12

Plan - Deakin University Waurn Ponds IWM Plan

The Waurn Ponds Campus is projecting significant growth over the next ten years and plans for the development to be sustainable. The objective of implementing an IWM system at the Deakin Waurn Ponds Campus is to create a sustainable campus that is resilient to future growth, development and climate change. The plan proposes to encompass all aspects of water management in a way that establishes the campus as a model for sustainable water systems and will also incorporate research and teaching opportunities.

Next steps:

IWM plan under development.

	
Status	In progress, investigation currently being undertaken. Project unfunded at this stage.
Lead agency	Deakin University
Location	Deakin University Waurn Ponds campus
Timeframe	
Partners	
Scale	Town

ACTION BR13

Plan - Bannockburn IWM Plan

Bannockburn is the largest township in the Golden Plains Shire and is growing rapidly at 8.5% per annum (2015–2016). Much of this growth is being accommodated through greenfield development. This project proposes to use an IWM approach to consider a range of opportunities relating to the water cycle within the town. This includes stormwater harvesting, Class C recycled water use, stormwater management, WSUD, appropriate growth, enhancing amenity of open space and walkability of the town's water assets etc. An IWM plan will help identify these opportunities and proposes potential solutions which could translate to future projects throughout the township.

Next steps:

Delayed until 2019/20 when resourcing and finances become available.

	
Status	Deferred until 2019-20
Lead agency	Golden Plains Shire
Location	Bannockburn
Timeframe	1-5 years
Partners	Barwon Water, CCMA
Scale	Town

ACTION BR14

Project - Point Lonsdale Stormwater Infiltration Trial

This initiative proposes to develop a streetscape scale stormwater disposal process direct to groundwater that could be transferable to other areas with sandy permeable soils.

This project was originally initiated due to an increased number of localised flooding events at Simpson St, Point Lonsdale. Part of a solution that has been recommended by the consultant is to increase the number of soak pits in the area with the aid of geotechnical investigations to better support design and locations of these pits. Under this project, these soak, or infiltration pits could be configured as raingardens in existing swales, greatly improving the amenity and multi-functionality of the soakage process.

Next steps:

Under investigation.

Status	In progress
Lead agency	BOQ
Location	Queenscliff
Timeframe	1-2 years
Partners	
Scale	Lot/sub catchment Scale

ACTION BR15

Project - Stead Park Recycled Water

Stead Park is a major area of public open space in the northern suburbs of Geelong. It is located next to Barwon Water's Northern Water plant which produces significant volumes of Class A recycled water and yet, at present, no recycled water is used at the site.

Stead Park has multiple users including cricket, football, softball, hockey and soccer, as well as playground facilities and active open space use. Therefore the addition of recycled water should promote more healthy green space for the community.

This project aims to ensure recycled water from the plant can be provided to Stead Park through establishment of a recycled water use agreement and on site distribution infrastructure to facilitate its use.

Next steps:

Under investigation.

Status	Not yet progressed.
Lead agency	Barwon Water
Location	Stead Park, Corio
Timeframe	5-10 years
Partners	
Scale	Lot Scale



Appendix 1

IWM stakeholders – responsibilities, legislation and strategies

Stakeholders	Responsibilities
Local Governments – Borough of Queenscliffe City of Greater Geelong Colac Otway Shire Golden Plains Shire Surf Coast Shire	Provide waste management services (drainage and on-site domestic wastewater management compliance), natural resource and coastal management, environment conservation, parks and gardens, and land use regulation (urban planning and building and planning approvals).
Traditional Owners – Wathaurung Aboriginal Corporation Eastern Maar Aboriginal Corporation	Conserve, protect and enhance natural and cultural heritage assets <ul style="list-style-type: none"> • Meet cultural heritage obligations • Supporting Participation Strategies for IWM planning, decision making and implementation involvement
Barwon Water	Barwon Water (Barwon Region Water Corporation) is Victoria's largest regional urban water corporation, providing high quality water, recycled water and sewerage services to urban and rural customers across 8,100 square kilometres. Our water and sewerage services underpin economic, social and environmental dimensions of regional prosperity.
Corangamite Catchment Management Authority	Has responsibility defined under the CaLP Act and Water Act for ensuring sustainable use and management of natural resources.
Southern Rural Water	Operates irrigation districts at Maffra, Bacchus Marsh and Werribee. Manages seven major dams. Licences groundwater users and river diverters across the southern half of Victoria
Department of Environment, Land, Water and Planning (DELWP)	In partnership with its agencies, the Department supports Victoria's natural and built environment to ensure economic growth and liveable, sustainable and inclusive communities. The Department assists the minister, develops and implements state policies and programs, and oversees the administration of organisations including catchment management authorities and water corporations.
Department of Health and Human Services (DHHS)	The Department develops and delivers policies, programs and services that support and enhance the health and wellbeing of all Victorians.
Department of Economic Development, Jobs, Transport and Resources (DEDJTR)	The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) was established on 1 January 2015, bringing together many of the main areas that drive economic development and job creation in Victoria. These include transport and ports, investment attraction and facilitation, trade, innovation, regional development and small business, together with key services to sectors such as agriculture, the creative industries, resources and tourism.

Legislation	Strategies
Local Government Act 1989 Victorian Government (1987). Planning and Environment Act 1987 Local Government Act 1989 Local Government Bill 2018	Geelong Stormwater Quality Strategy 2015 Greater Geelong City Council, Neighbourhood Amenity Local Law 2014 Greater Geelong City Council (2006), Drainage Asset Management Plan.
Native Title Act 1993 (Commonwealth) Traditional Owner Settlement Act 2010 Aboriginal Heritage Act 2006	
Water Act 1989 Water Industry Act 1994 Statement of Obligations	Urban Water Strategy (March 2017) Strategy 2030
Catchment and Land Protection Act 1994 Water Act 1989	Regional Catchment Strategy 2013–2019 Corangamite Waterway Strategy (2014–22) Regional Floodplain Strategy (2018–28) Corangamite NRM Plan for Climate Change Regional Catchment Partnership Agreement (2018)
Water Act 1989 Statement of Obligations	Water Plan 3 2013–2018 Groundwater management rules and plans Rivers and Creeks management rules and plans
Flora and Fauna Guarantee Act 1988 Marine and Coastal Act 2018 (as of 1/8/18) Wildlife Act 1975 Catchment & Land Protection Act 1994 Conservation, Forests & Lands Act 1987 Land Act 1958 Crown Land (Reserves) Act 1978 Land Conservation Act 1970 Heritage Act 2017, Heritage Rivers Act 1992	Water for Victoria Biodiversity Plan 2037? State Environment Protection Policy (Waters of Victoria) Management Services Agreement with PV
Water Act 1989 Safe Drinking Water Act 2003	Health 2040 Victorian public health and wellbeing plan 2015–2019
Agricultural Industry Development Act 1990 Conservation, Forests and Lands Act 1987 Dairy Act 2000, Fisheries Act 1995 Flora and Fauna Guarantee Act 1988 Meat Industry Act 199 Regional Development Victoria Act 2002 Catchment & Land Protection Act 1994	

IWM stakeholders – responsibilities, legislation and strategies

Continued

Stakeholders	Responsibilities
Environment Protection Authority (EPA)	<p>Developing and overseeing compliance of environmental regulation to enable policy implementation that protects environmental health.</p> <p>Issuing of licenses for all scheduled premises and approvals and developing best practice guidelines.</p>
Essential Services Commission	Economic regulation for water services and local government to facilitate efficient investment and pricing.
Parks Victoria	Parks Victoria is a statutory authority created by the Parks Victoria Act 1998 that reports to the minister. It manages the State's network of national, state, regional and metropolitan parks, other conservation reserves, and many significant cultural assets. Parks Victoria provides services for the management of waterways and land for the purposes of conservation, recreation, leisure, tourism or water transport, and for the management of land used for public purposes.
VicRoads	Control and manage major transport corridors and road reservations.
Victorian Planning Authority	Undertake strategic planning and coordinated infrastructure for the future growth and transformation of Victoria's cities and regions – including our growing regional towns and cities.
National Health and Medical Research Council (NHMRC)	Australia's leading expert body promoting the development and maintenance of public and individual health standards.
G21	<p>G21 – Geelong Region Alliance (G21) is the formal alliance of government, business and community organisations working together to improve the lives of people within the Geelong Region across five municipalities – Colac Otway, Golden Plains, Greater Geelong, Queenscliffe and Surf Coast.</p> <p>G21 works as a forum to discuss regional issues across interest groups and municipalities resulting in better co-ordinated research, consultation and planning.</p> <p>G21 has focussed on the funding and delivery of projects and activities that contribute to the delivery of 'The Geelong Region Plan'.</p>
Deakin University	<p>With over 40 years of experience as one of Australia's leading tertiary education providers, Deakin offers students world-class programs and endless opportunities.</p> <p>Deakin has a rich history of developing partnerships linking academia with industry, government, research institutions, NGOs, and connecting with likeminded universities around the world.</p>
Coast Care groups	Coast care groups undertake voluntary work to protect and enhance Victoria's 2,000 kilometres of coastline. Activities include revegetating coastal areas, building boardwalks and tracks, fencing, monitoring native shorebirds and animals, education and awareness raising, plantings, landscaping coastal areas and protecting cultural sites
Committees of management	Appointed under the Crown Land (Reserves) Act 1978, committees of management manage, improve and control allocated Crown land reserves. In Victoria, approximately 1,500 reserves are managed by 1,200 voluntary committees of management and 2,800 reserves are managed by municipal councils as committees of management.
Foreshore committees	Manage coastal reserves throughout the municipality. It is common for urban areas to drain through these reserves and to impact on the beaches.

Legislation	Strategies
Environment Protection Act 1970	Our Environment, Our Health
Parks Victoria Act 1998 National Parks Act 1975	Shaping our Future
	Toward Zero 2016–2020 IWM Guidelines
	The Australian Drinking Water Guidelines (ADWG) ANZECC guidelines for Fresh and Marine Waters
	G21 Region Economic Development Strategy (2014) Sustainable agribusiness Strategy for the G21 Region (2017–2022) G21 Geelong Region plan – a sustainable growth strategy' Health and Wellbeing Strategic plan G21 Planning and Services Pillar G21 Sport and Recreation Pillar
Crown Land Reserves Act 1978	
Crown Land Reserves Act 1978	Coastal Management Plans

Appendix 2

Overview of local government authorities

Borough of Queenscliffe

The Borough of Queenscliffe is situated approximately 105 km southwest of Melbourne and 35 km east of Geelong and comprises the historic township of Queenscliff and the coastal settlement of Point Lonsdale (part of which is located within Greater Geelong).

The Borough of Queenscliffe's vision is focussed on community wellbeing, environmental sustainability, local economy, planning and heritage, governance and performance.

Population – In 2016, Queenscliff had a population of 3,018 and Victoria in Future* population projections for Queenscliff indicate a population decline of -0.2% between 2011 and 2021. The population fluctuates due to tourism, increasing during summer and peak holiday periods (school holidays, long weekends). Over the peak tourist period, the populations of Queenscliff and Point Lonsdale townships increase by an estimated 316% and 383% respectively.

Climate change – As a small coastal community surrounded by water on three sides, the Borough of Queenscliffe is vulnerable to storm surges and sea level rise. Temperature rises will result in increased heat-related stress and mortality among aged and 'at risk' populations. Drought will have impacts on water availability for recreational and open space and impacts on the natural environment. The need to protect and enhance the Borough's natural environment continues to be a high priority for Council as demonstrated through its Corporate Carbon Neutral Action Plan and the in-progress Community Carbon Neutral Action Plan.

Community needs and expectations

– Queenscliffe has a much older population than the state average, with the median age of the usual resident population (55 years) and a much higher proportion of population aged 65 years and over. Residents rated their wellbeing at 84 out of 100,

compared with the state average of 77.5. Queenscliffe has a very positive relative socio-economic level (Borough of Queenscliffe Regional Profile 2014).

Economy – The Borough of Queenscliffe is an attractive destination for tourists given the Queenscliff to Sorrento Ferry, historic Defence Force structures, pristine natural environment and remarkable water views. Queenscliff's strong community and rich heritage are among its key strengths. It has comparatively expensive real estate and residents with high income. Reflecting its position as the smallest local government area in Victoria, the Borough has a relatively small local economy.

Opportunities

Town	IWM opportunity	Status
Borough of Queenscliffe	Whole of Shire IWM Plan – localised flooding focus, stormwater reuse	Potential (19/20 FY)

City of Greater Geelong

The City of Greater Geelong is located in regional Victoria, to the south west of the Melbourne metropolitan area and is the second largest city in Victoria. The municipality encompasses an area of 1,247 square kilometres with a mix of coastal, rural and urban communities. The coastline includes Corio Bay and coastal settlements from Portarlington to Breamlea.

The City of Greater Geelong is working toward a long term vision for 'a clever and creative region' focussing on 11 strategic priorities including improved health and safety of the community, informed social infrastructure and planning, a more inclusive and diverse community, planned sustainable development, effective environmental management, vibrant arts and culture, integrated transport connections, a thriving and sustainable economy, growing tourism and events, innovative finances and technology, organisational leadership, strategy and governance.

Population growth - The City of Greater Geelong population was 215,800 in 2011 and is forecast to grow to 296,400 by 2031 (VIF 2016). Geelong has experienced strong population and housing growth in recent years and this is likely to continue. Numbers of overnight visitors to the Geelong Region in 2014/15 was 1,169,000.

Climate change - Coastal inundation and erosion due to higher sea levels is a key risk for coastal areas within the Greater Geelong Region. The Region has approximately 750 residential buildings that lie within 110 metres of 'soft' erodible shorelines and a large number of coastal caravan parks along the Bellarine peninsula would also be affected by sea level rise.

Changing rainfall patterns will have an impact on stormwater runoff into local waterways. The catchments of significance across the Region includes Hovells Creek, Limeburners Bay and Corio Bay. Another is South Geelong which drains to the Barwon River upstream of the high value and Ramsar protected Lake Connewarre complex. The catchment covering Point Lonsdale as well as parts of Ocean Grove and Marcus Hill contains low levels of development and industrial land use, however, it drains into some of the highest value natural assets in the Region, including Lake Victoria and Swan Bay (Geelong stormwater strategy 2015).

Temperature rise will result in increased heat-related stress and mortality among aged and 'at risk' populations as well as a higher risk of bush fire. Breamlea and Anakie have been assessed as having extreme bushfire risk; while St Leonards / Indented Head has been assessed as having very high risk and Lara and Ocean Grove as having high risk (Climate Adaptation Plan CoGG). Drought will have impacts on recreational and open space areas requiring extensive irrigation to maintain.

Community needs and expectations

- Compared to state average figures, the Greater Geelong population had a higher subjective wellbeing score (78.6% versus 77.7%) but was less likely to report their health as good or excellent (45.1% versus 46.6%). Areas of poor socio-economic levels are centered in the north and south east of the Geelong urban area plus in the far east of the Municipality in Indented Head, St Leonards and Portarlington. Locations with more positive socio-economic levels are found along the southern coastal edge of the municipality. Some of Greater Geelong's suburbs are

among the most disadvantaged of Victorian suburbs, including Bell Park, Corio, Norlane, St Leonards, Thomson and Whittington (CoGG Regional Profile 2014).

Economy - The bulk of economic, employment and output growth in the Barwon Region will largely be focused in and around Geelong. The largest sub-region by both population and economic activity, the City of Greater Geelong is the business and industry heart of the Barwon Region and houses the majority of the workforce. The City of Greater Geelong also has significant strategic assets such as the CSIRO research facility, a large medical precinct including St John of God, Epworth and University Hospitals, Deakin University and the Gordon Institute of TAFE. Geelong's manufacturing history and transition into advanced manufacturing techniques demonstrates the City is capable of complex production methods, with highly skilled staff (G21 Regional Profile 2014). Geelong has a broad economic base with major strengths in health and allied services, education and research, advanced manufacturing, tourism, agribusiness, construction and professional services. (www.economyprofile.com.au). The City of Greater Geelong is in turn needing to meet housing needs of a growing workforce and associated supporting infrastructure.

Opportunities

Town	IWM opportunity	Status
Armstrong Creek	Duneed Reserve Pump Station and Aboriginal Heritage Values opportunity	In progress
Drysdale	Drysdale Sporting Precinct Reuse & water rehabilitation	Potential
Geelong	Johnston's Park Raingarden	Complete
	Barwon River Parklands	In progress
	Re-activation of urban waterways	Potential
	Northern Geelong Growth Area IWM Plan	In progress
	Western Geelong Growth Area IWM Plan	In progress
	Greening Central Geelong	In progress
	Malop Street Green Spine	Complete
	Stead Park Recycled Water	Potential
Lara	Stormwater reuse; GREP to Lara Views	Potential
	Lara Flood Study	Potential
	Avalon IWM Plan	Potential
Ocean Grove	New developments in Kingston and Oakdene	Potential



The Point Estate, Point Lonsdale – Courtesy: City of Greater Geelong

Colac Otway Shire

Colac Otway Shire is located in regional Victoria and encompasses an area of 3,433 square kilometres. The Shire has rich landscape that takes in volcanic lakes, craters and plains in the north, the hinterland forests of the Otway Ranges and the Great Ocean Road coastline. Colac township is situated beside Lake Colac on the Princes Highway. The Shire is a popular tourism destination for holiday makers and international tourists.

The Shire's vision is 'towards a prosperous future' focussing on prosperity, places, community, leadership and management.

Population growth – Recent years have seen very low levels of population growth in the Shire. The Colac Otway Shire population was 20,800 in 2011 and estimated to decline by – 0.4% between 2011 and 2021.

Climate change – The Colac Otway Shire has two very different climate patterns in the future for the north and south, with the Otway Ranges influencing the south of the Shire.

The greatest increase in temperature and drying will occur in the districts within and to the north of Colac.

The northern areas of the Shire (north of Lake Corangamite and Colac) will experience the greatest temperature increase. Northern areas of the Shire will be driest (north of Lake Corangamite and Colac) with the southern areas the wettest. Barham River in Apollo Bay will have the greatest exposure to coastal inundation, which will impact the Great Ocean Road and the Apollo Bay Caravan Park. Wye River will also be impacted (COS Climate adaptation plan).

Community needs and expectations

– Colac Otway Shire sustains a mixed population of tourists, businesses, farmers, retirees and families, some of whom settled in the Shire recently and some who can trace their family history back to the original settlers. The Shire has a small population of Aboriginal people.

The land of the Shire sustains different ways of living, from affordable housing options in the towns, to spectacular properties with views of the forest and the sea. Colac Otway is in the third (most disadvantaged) decile of Victorian LGAs, with the township of Colac among the most disadvantaged localities in Victoria (Colac Otway Shire Regional Profile 2014).

Economy – Colac Otway Shire's economy is based on agriculture, manufacturing, successful dairy and food processing and the timber industry and has a growing tourism industry built on the coastline of the Great Ocean Road and the forests of the Otways. There is a number of small, specialist food producers, many forming the Colac Otway food trail, plus a host of local retail businesses, arts and crafts enterprises and health and education services. However, low employment has contributed to some seeking employment outside of the Shire and an increasingly ageing population.

Opportunities

Town	IWM opportunity	Status
Apollo Bay	Apollo Bay IWM Plan	Priority
Colac	Irrewillepe Stormwater Basin Upgrade	Priority
	Colac Botanic Gardens Stormwater	Potential
	Urban Forest Strategy	Potential
	Botanic Pathway and Green Spine	Potential
	Colac West Growth Area flood redevelopment	Potential
	Lake Colac Master Plan	Potential

Golden Plains Shire

Golden Plains Shire is situated between the cities of Geelong and Ballarat and has a population of over 20,000 people. The municipality encompasses an area of 2,073 square kilometres and has a relatively low population density (6.9 persons per km²). Many residents rely upon employment and education facilities located in Greater Geelong or Ballarat. The majority of the land in the municipality is used for rural purposes (Golden Plains Shire Regional Profile).

Golden Plains Shire vision is focussed on promoting healthy and connected communities, enhancing local economies, managing natural and built environments and delivering good governance and leadership.

Population growth - The Golden Plains Shire population forecast for 2018 is 22,859, and is forecast to grow to 32,449 by 2036 (The population experts .id). New residents, particularly young families, are attracted to the area's rural lifestyle, affordable housing and proximity to the services and jobs. The visitor economy is an important and underappreciated segment of the Golden Plains economy.

Visitors are not just tourists, they are friends and relatives visiting or staying with residents and others travelling through the Shire.

Climate change - Climate change impacts on the Golden Plains Shire include impacts of temperature rise and drought on inland and rural areas. Temperature rises will result in increased heat-related stress and mortality among aged and 'at risk' populations as well as a higher risk of bush fire. Drought will have impacts on water availability for recreational and open space and a growing agricultural sector.

Community needs and expectations - Golden Plains Shire has a strong commitment to health and wellbeing priorities including healthy eating and active living, access to local health and community services, healthy and sustainable environments and connected communities. Golden Plains has a low level of relative socio-economic disadvantage. While Bannockburn, the LGA's largest town, has a low level of disadvantage, most other townships have much higher levels including Smythesdale, Meredith, Enfield, Rokewood, Dereel and Linton (Golden Plains Regional Profile 2014).

Economy - Golden Plains offers many opportunities for businesses, investment, sustainable development and employment, with more than 1,700 businesses in farming, retail and home-based businesses. Intensive animal farming continues to increase and strengthen, with the production of goat dairy, beef, chicken and pork strong in Golden Plains, and marked growth in viticulture. The Golden Plains Food Production Precinct is growing and the area is gaining a reputation for the gourmet food and wine experience that can be found in the southern end of the Shire (Golden Plains economic development strategy).

Opportunities

Town	IWM opportunity	Status
Bannockburn	IWM Plan	Priority
Inverleigh	IWM Plan	Potential
Lethbridge	Golden Plains Food Precinct IWM plan	In place Potential
Meredith	IWM Plan	Potential
Shelford	IWM Plan	Potential

Surf Coast Shire

The Surf Coast Shire is located to the south west of Geelong and Melbourne and encompasses an area of 1,560 square kilometres. The area is an appealing destination for holidaymakers and international visitors or those looking to make a permanent sea change. The Shire is home to some of the world's best surfing locations and the iconic Great Ocean Road, with other important attractions including the Great Otway National Park, Bells Beach and Erskine Falls. Surf Coast Shire's vision is for 'an engaged, innovative and sustainable community' focussed around 5 key themes including community wellbeing, environmental leaderships, balancing growth, vibrant economy and a high performing council.

Population growth - The Surf Coast Shire continues to be one of the fastest growing municipalities in Victoria, with the permanent population forecast to rise from 30,048 in 2017 to almost 44,000 by 2036 (forecast.id March 2017). The Surf Coast Shire received an estimated 2.1 million total visitors to the financial year ending June 2016. It received over 2.3 million overnight visitor nights during the same period (SCS visitor insights).

Climate change - Coastal inundation and erosion due to higher sea levels are key risks for the Surf Coast Shire's built and natural environment. Temperature rise will result in increased heat-related stress and mortality among aged and 'at risk' populations as well as a higher risk of bush fire. Drought will have impacts on recreational and open space. Open spaces provide a number of urban eco-system services, such as the reduction of effects from major storm events including the significant reduction in the amount of water entering drains (SCS Open Space Strategy).

Community needs and expectations

- The proven health and wellbeing benefits of the natural environment means the Surf Coast Shire is well placed to achieve positive quality-of-life outcomes for its residents and visitors. The Shire is naturally built for good health and wellbeing due to its access to the Otways and beaches. With this advantage comes the associated risk of bushfire and potential mental stress, as well as the need to protect public open spaces and green belts as the population and dwelling numbers grow. The Surf Coast Shire has become one of the

least disadvantaged municipalities in Victoria. Although wealthier people tend to be healthier, issues around work-life balance also pose a risk. Winchelsea is the township which has a high level of relative socioeconomic disadvantage (Surf Coast Shire Regional Profile 2014).

Economy - The Surf Coast economy is unique, dominated by surfing, tourism, construction and retail sectors. Traditional and emerging sectors of agriculture and health compliment to create a distinctly different economy to that of Geelong and surrounding regions (SCS economic development strategy). Critical to achieving sustained economic growth are the unique natural surrounds which includes world famous beaches, pristine coastal areas and National Parks. These natural assets are a corner stone in attracting approximately 2 million visitors who expend over \$500 million annually (SCS Economic_Snapshot_2016). Away from the coast, agricultural production in the Surf Coast Shire has developed niche markets in pork production (Otway Pork), as well as beef, wool, poultry and stock feed crops.

Opportunities

Town	IWM opportunity	Status
Anglesea	Stormwater reuse - Foreshore camping ground	Potential
	Anglesea Futures IWM Plan	Potential
Torquay	Spring Creek IWM Plan	Complete
	Recycled Water from Black Rock to additional farming enterprises in the Thomson Valley (Hinterland Plan)	Potential
	Torquay Basin Subdivision	In progress
Lorne	Lorne IWM plan	Potential

