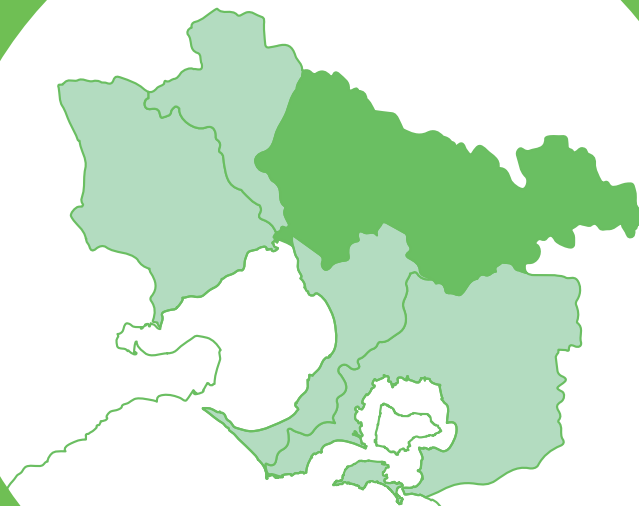


# Yarra Catchment Integrated Water Management Plan

Actions for Delivery



April 2024



Integrated Water  
Management Forums

Supported by



Energy,  
Environment  
and Climate Action

### **Acknowledgement of Victoria's Aboriginal communities**

The Yarra Integrated Water Management (IWM) Forum proudly acknowledges Victoria's Aboriginal communities and their rich culture and pays its respects to their Elders past and present. The Yarra IWM Forum also recognises the intrinsic connection of Traditional Owners to Country and acknowledges their contribution to the management of land, water and resources.

We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches us. We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

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# Acknowledgements

The *Yarra Catchment Integrated Water Management Plan: Actions for Delivery* has been developed by the Yarra Integrated Water Management (IWM) Forum. Members of this Forum include the Chief Executive Officers, Executive Directors and Managing Directors of the following organisations:

**Banyule City Council**

**Bunurong Land Council Aboriginal Corporation**

**City of Boroondara**

**City of Melbourne**

**City of Port Phillip**

**City of Stonnington**

**City of Whittlesea**

**City of Yarra**

**Darebin City Council**

**Glen Eira City Council**

**Greater Western Water**

**Hume City Council**

**Manningham City Council**

**Maroondah City Council**

**Melbourne Water**

**Mitchell Shire Council**

**Monash City Council**

**Merri-bek City Council (formerly  
Moreland City Council)**

**Nillumbik Shire Council**

**South East Water**

**Southern Rural Water**

**State of Victoria, Department of Energy,  
Environment and Climate Action**

**State of Victoria, Victorian Planning Authority**

**Whitehorse City Council**

**Wurundjeri Woi-wurrung Cultural  
Heritage Aboriginal Corporation**

**Yarra Ranges Shire Council**

**Yarra Valley Water**

This plan represents the collective aspirations and intent of these organisations and has been developed through a collaborative process. The plan development process was facilitated by the Department of Energy, Environment and Climate Action (DEECA) and overseen by the Yarra IWM Forum Working Group. The plan has been developed with assistance from E2Designlab. Action prioritisation and the development of a supporting digital dashboard was undertaken with the assistance of Aurecon.

The Yarra IWM Forum is grateful to the Yarra IWM Working Group for the time and technical expertise they dedicated to guide the development of this plan.

The Yarra IWM Forum acknowledges the Traditional Owners as original custodians who have managed land and water sustainably over thousands of generations and who maintain an active connection to Country. Traditional Owners hold the knowledge, stories, custodial obligations, and cultural expertise that has always ensured the health of waterways and Country. Each Traditional Owner group within the Yarra IWM Forum holds the cultural authority to speak for water, rivers, and Country within their traditional region.

# Minister's foreword

Water is our most vital resource and is essential to the health and wellbeing of people and the environment. Water enhances community wellbeing, the liveability of our cities, supports economic growth and jobs across Victoria, and is deeply connected to Aboriginal culture.

Climate change and the rapid increase in population and urbanisation are placing considerable pressure on water supplies, damaging our waterways, land and marine environments, and threatening amenity and ecological and human health. The need to adapt and improve liveability and resilience of our cities and towns is critical.

The Victorian Government's Integrated Water Management (IWM) Program addresses this need from a water perspective. It began with the release of the *IWM Framework for Victoria* in 2017 as a response to Chapter 5 of the Victorian Government's strategic plan for management of the State's water resources, *Water for Victoria* (2016), which recognises that IWM has a key role in positioning Victorian cities and towns to be liveable and resilient.

I want to acknowledge the continuing work to help progress our commitment to put IWM as the business-as-usual water management practice in Victoria. Establishment of 15 IWM Forums across the state is the first step towards delivering this commitment. IWM Forums bring together many dedicated stakeholders with a wide range of expert and lived experience, including water corporations, local government representatives, catchment management authorities, Traditional Owners and the Victorian Planning Authority.

Partners of the five IWM Forums in Metropolitan Melbourne (Werribee, Maribyrnong, Yarra, Dandenong and Western Port) have also achieved significant progress towards mainstreaming the IWM approach to support thriving communities.

I congratulate the five Metropolitan IWM Forums for delivering the inaugural Catchment Scale IWM Action Plans. This is a huge collaborative achievement of the 50 partners involved in the Metropolitan IWM Forums over the past six years.

The Metropolitan Catchment Scale IWM Action Plans establish a clear direction to collaboratively implement IWM initiatives across organisational and geographic boundaries. These Plans demonstrate the immense power of collaboration. I look forward to this collaborative effort continuing as these Plans are delivered and the community experiences the positive impacts for generations to come.



A stylized, handwritten signature in blue ink, which appears to read 'Harriet Shing'.

**The Hon. Harriet Shing MP**  
Minister for Water



# Chair's foreword

We are all connected by water. It is essential for our life and liveability and prosperity.

The Yarra River (Birrarung) holds a special place amongst the people of Melbourne and the Yarra region. Its catchment has sustained Aboriginal people for thousands of generations before European colonisation. Today, it is Melbourne's main source of drinking water, supports productive agriculture, including a world-famous wine industry and extensive horticultural enterprises. Its landscapes and open spaces are home to a great diversity of plants and animals and attract millions of visits for recreation and enjoyment of nature.

More than two million people (over a third of Victoria's population) live in the Yarra catchment and this number will grow significantly with further urbanisation over coming decades. Protecting Melbourne's liveability and the natural and cultural values of the catchment demands that we realign the way in which we plan and design our cities and manage our natural resources.

Integrated water management is about protecting water, our most vital resource, and enhancing our water system services so that life can continue, and be better, for our future generations.

As Chair of the Yarra IWM Forum, I would like to acknowledge the deep commitment of all Forum Members and the hard work of the working group members and DEECA staff to produce this *Catchment Scale IWM Plan: Actions for delivery*.

The plan demonstrates a pivotal shift, where our endeavours are not just aspirational, but are focused on tangible delivery and meaningful outcomes. It provides a launching pad to guide investment in IWM over the next 10 years, with Forum partners working together to deliver on-the-ground IWM projects, unlock new investment opportunities, and address urgent challenges.

The challenges we face require sustained effort, and our dedication to key enabling policy work will be a continued focus as we look ahead.

Together, as we deliver this ground-breaking plan, we commit to delivering on our vision for a world-leading water sensitive catchment.



A handwritten signature in black ink, reading 'Chris Chesterfield' in a cursive script.

**Chris Chesterfield**  
Chair of the Yarra IWM Forum

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# Integrated water management in the Yarra catchment

Victorians face a future with less water due to climate change and population growth. We need to act now and rethink the ways we manage our water resources.

Integrated water management (IWM) is a holistic approach to managing water that takes into account the interconnected nature of water and land systems and considers the social, cultural, economic, and environmental aspects of water use.

IWM can be applied at all scales, from waterway catchments to smaller suburbs and towns, and even down to individual streets and houses. Solutions identified through IWM can improve water security, reduce degradation of waterways and bays, reduce flood risks, rehabilitate ecosystems, create vibrant open spaces, and support peri-urban agriculture. This enhances climate resilience and improves the health and well-being of communities and the amenity and liveability of our cities.

# The Yarra catchment

## Vision

Working together, Yarra is a world-leading water sensitive catchment and our communities are healthy and thriving. We honour the land and the water of the Birrarung and its tributaries as the lifeblood of the catchment.

## Catchment condition and challenges

The Yarra catchment extends north from Melbourne's central business district to the southern slopes of the Great Dividing Range and east to the Yarra Ranges, covering about 4,076 square kilometres. The landscape of the Yarra catchment varies greatly from ancient woodlands, lush rainforests, grasslands and fertile agricultural lands to Melbourne's densely populated and developed urban areas extending from central Melbourne. Major agriculture and viticulture areas make up 57% of the catchment. Within the Yarra catchment are the traditional lands of the Kulin Nation, including the Wurundjeri Woi-wurrung and Bunurong people.

The Yarra River (Birrarung, meaning 'river of mists') flows west from its near-natural upper reaches in the forested Yarra Ranges for 242 kilometres through central Melbourne to Port Phillip Bay. The Birrarung is one of Australia's most iconic and culturally significant waterways and the only river that has status as a living entity for protection under the *Yarra River Protection (Wilip-gin Birrarung murrn) Act 2017*. Waterway health is strongly linked to land use, with the upper reaches of waterways in a more natural condition than those downstream in the urban areas. Water quality

deteriorates downstream, due to agriculture, urban development and the resulting stormwater pollution.

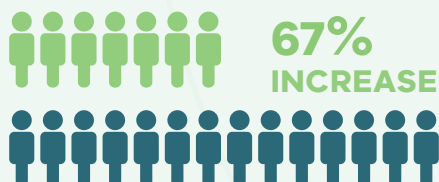
There are priority areas in the Yarra Ranges identified for urban stormwater runoff reduction in Melbourne Water's *Healthy Waterways Strategy*. This provides significant opportunities for harvesting, treatment and use of urban stormwater to support green and cooler landscapes, enhance liveability and reduce the impacts of stormwater on creeks and rivers.

The catchment has an estimated population of 1.87 million people and is predicted to grow to 3.13 million by 2050<sup>1</sup>. Significant areas are undergoing rapid urban residential development encroaching on lands previously used to support agriculture. The densification of Melbourne's inner and middle ring suburbs, coupled with rapid growth through the outer catchment, highlights the need for integrated catchment planning and management to protect and enhance the Birrarung and improve liveability for community wellbeing and economic prosperity. Retaining water in the landscape will be more important to support liveability and biodiversity across the catchment, particularly in growth areas that will be more vulnerable to heat waves.

Urban water security is a challenge in the catchment due to rapid population growth and greenfield development. The future climate will be hotter and drier, with lower average annual rainfall expected to reduce inflows to reservoirs and decrease river flows, placing further strain on our current water supplies<sup>2</sup>. Over the last century, flows through the Yarra system have become highly regulated due to the construction of major water storages that capture natural run-off and allow for the controlled removal of water for consumptive use. Existing environmental entitlements for the river only provide minor flow relief in the system, and environmental volumes are forecast to further decline without intervention.

## POPULATION GROWTH

**1,872,000** 2021  
**3,130,000** BY 2050



<sup>1</sup> State Government of Victoria (2019). Victoria in Future 2019 (VIF2019).

<sup>2</sup> State Government of Victoria (2022). Central and Gippsland Region Sustainable Water Strategy. Final Strategy

While there will be a reduction in average annual rainfall, the catchment is predicted to see more frequent and more intense rainfall events that will increase the risk of flooding. These changes, combined with increased development and growing populations, will place more pressure on infrastructure, natural assets and water services in the catchment.

While most of the catchment's wastewater is managed in neighbouring catchments, there are a number of locally managed plants such as Brushy Creek, Wollert and Wallan that could provide treated wastewater for use. By increasing alternative water supplies to agricultural users there is an opportunity to support economic growth in the region. Victoria's Big Build also presents opportunities to apply the IWM approach in the provision of water services.

## The role of IWM

Yarra is facing a hotter and drier climate; more severe and frequent storms, bushfires and floods; population growth; water scarcity; cost of living pressures; and the need to invest in new infrastructure while managing rising construction costs.

To meet this challenge, we all have a role to play on our shared journey toward improved resilience and sustainability. Together, we can achieve better collective value, leading to outcomes that positively impact every member of our community.

By managing the whole water cycle, we can achieve a wider range of outcomes including:



conserving our precious drinking water supplies by using alternative water supplies (such as high-quality recycled water) for fit-for-purpose uses



supporting greener, cooler streets and parks, and creating vibrant public spaces



contributing to healthier rivers, creeks, wetlands and our bay through improving the quality and flows of water through these systems



helping to mitigate flood risks



improving productivity and prosperity of agriculture and Victorian businesses.

By adopting the IWM approach, all these benefits can be delivered while providing the same or improved level of services for water supply, sewage and drainage. The strategic outcomes that IWM aims to achieve across the Yarra catchment are described on page 7.

## Collaboration is key to the success of this plan

Creating a resilient and liveable future is a shared responsibility. Twenty-seven stakeholder organisations (referred to as IWM Forum partners) in the Yarra catchment are working together to respond to regional challenges and local issues. This approach embraces the co-delivery of on-the-ground outcomes to progressively transform the way we manage our urban water resources and catchments. In turn, this will deliver greater benefits for the region than can be achieved by any one organisation in isolation.

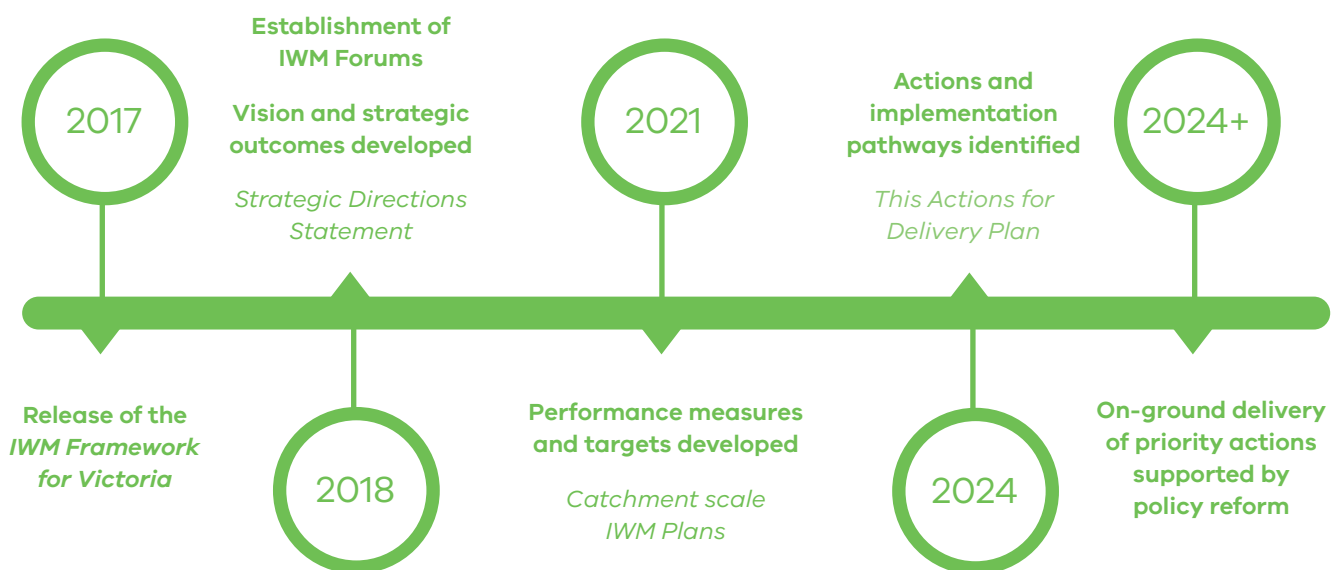


## Our journey

Following the establishment of IWM Forums in Metropolitan Melbourne in 2018, each Forum collaboratively developed an agreed vision underpinned by 7 strategic outcomes. These are articulated in the *Strategic Directions Statement* for each catchment, published in 2018 and available on the [Victorian Government IWM website](#).

From 2019 to 2021, IWM Forum partners worked together through a rigorous and collaborative process to develop catchment performance measures and targets for each outcome area. These are articulated in the *Catchment scale IWM Plan: Targets Driving Outcomes* for each catchment, published in 2022 and available on the [Victorian Government IWM website](#).

Since early 2022, the forums have been developing a suite of strategic actions that deliver the greatest advances towards the targets. The priority actions are captured in the *Catchment scale IWM Plan: Actions for Delivery* for each catchment (this document) and will define the forward journey for each Metropolitan Melbourne IWM Forum. We will monitor and report on catchment and regional progress against the IWM targets.



IWM is a major pillar of the other local and regional planning strategies that are needed to achieve a liveable and resilient Melbourne. This plan bridges the gap between and across these strategies, in particular:

- Central and Gippsland Region Sustainable Water Strategy 2022
- Water is Life: Traditional Owner Access to Water Roadmap 2022
- Greater Melbourne Urban Water & System Strategy: Water for Life 2022
- Flood Management Strategy for Port Phillip and Western Port 2021-2031
- Victoria's Climate Change Strategy 2021
- Healthy Waterways Strategy 2018-2028
- Melbourne Sewerage Strategy 2018
- Plan Melbourne 2017-2050
- Victoria's Housing Statement: The Decade Ahead 2024-2034
- Council Community Plans, Climate Change and Water Plans
- Open Space for Everyone: Open Space Strategy for Metropolitan Melbourne 2021

# From planning to delivery

We have taken the time to define what we want and our pathway forward. We are now ready to act and implement actions for the benefit of the Yarra catchment as well as the region.

## What are we aiming to deliver?

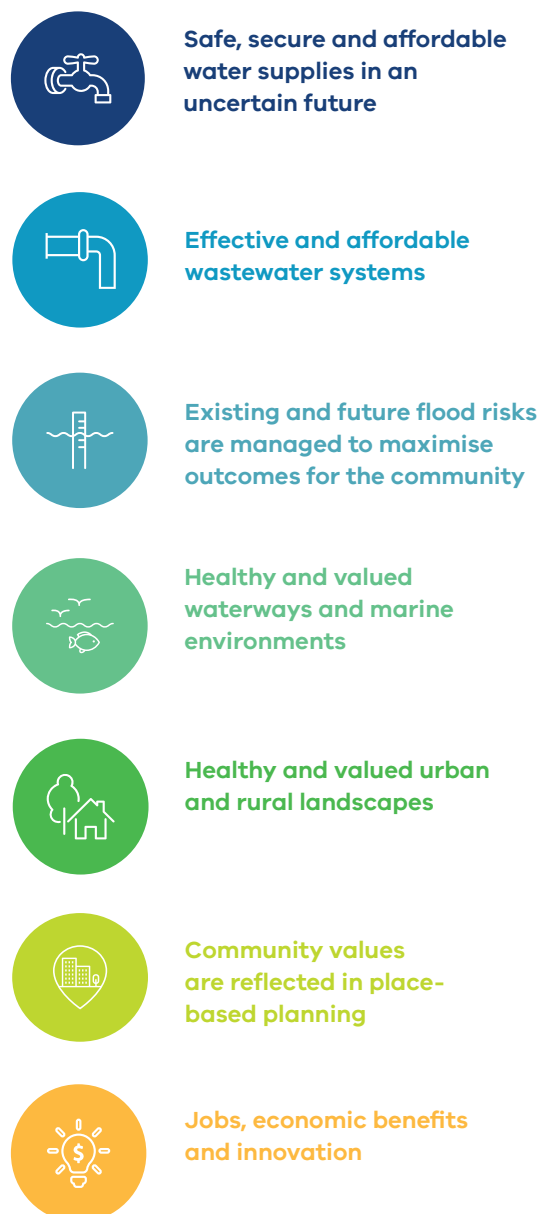
### Strategic outcomes

The *Strategic Direction Statements* articulate the IWM vision and strategic outcomes for each catchment. The IWM strategic outcomes are described in Figure 1. Each strategic outcome will play a significant role in shaping the liveability, prosperity and resilience of the community living in the Yarra catchment as well as the Greater Melbourne region.

Each priority action listed in this plan supports one or more of the IWM strategic outcomes and will bring us a step closer to achieving Yarra's vision.

### Indicators, measures and targets

Indicators, measures and targets further define the strategic outcomes, for each catchment. These are articulated in the *Catchment scale IWM Plans: Targets Driving Outcomes*. These plans reflect important indicators and measures for IWM forum partners to adopt.



**Figure 1. Strategic Outcomes**

## What is this plan?

The *Yarra Catchment Integrated Water Management Plan: Actions for Delivery* is one of five such plans: one for each of the catchments in Metropolitan Melbourne (i.e. Dandenong, Maribyrnong, Werribee, Western Port and the Yarra). Collectively, these are referred to as 'Catchment scale IWM Plans: Actions for Delivery'.

Each plan includes outcome-focused actions at a range of scales, which are complementary and reinforcing, to improve the resilience, liveability and sustainability of our urban areas and the environment.

The priority actions in this plan, combined with locally important projects, and new actions that will be identified in the future, are all part of how we will deliver our catchment and regional targets.

## How this plan was developed?

These plans have been developed by the partners of the Yarra IWM Forum in collaboration with partners of the Werribee, Dandenong, Western Port and Maribyrnong IWM Forums. IWM Forums provide member organisations with a transparent process to enhance or accelerate IWM initiatives and coordinate IWM across organisational and geographic boundaries.

IWM Forum partners worked together to decide on the key actions to take forward as part of this plan.

## How will this plan be used?

The *Yarra Catchment Integrated Water Management Plan: Actions for Delivery* will support water planning and management over the next 10 years (2024–2034), which will deliver clear outcomes for the catchment. It outlines a suite of priority projects agreed on by all organisations involved in the management of water, working together towards a common vision. Many more locally important projects are being pursued, which collectively contribute to the strategic outcomes of the catchments.

The plan will be used by IWM Forum partners to guide investment. It will be a living plan, to be reviewed regularly. Organisations will use their best endeavours to progress projects using the priority action lists for infrastructure planning and when making investment decisions. Future actions will be identified through updates to the plan.





## Working with Traditional Owners

The holistic intent of the IWM approach means that it recognises the importance of land and water management within a system that is interconnected to resources, community, culture, spirituality and ancestry. This whole-of-system thinking is a common thread between IWM and Traditional Owners.

Traditional Owners have an intrinsic connection to Country and hold knowledge, stories, custodial obligations, and cultural expertise that has ensured the health of Country for millennia. This knowledge is critical to holistic water management, robust decision-making, and may help environmental water managers set priorities. When Country is healthy and cared for, it supports healthy people and healthy economies, which benefits everyone. Including Traditional Owner knowledge, values and objectives in water management are critical to healing Country, promoting Traditional Owners' self-determination, fostering meaningful collaboration, and ultimately embedding a holistic IWM approach in Victoria.

Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation and Bunurong Land Council Aboriginal Corporation are Yarra IWM Forum partners who have been part of the IWM journey since the Forums were established in 2018. The Yarra IWM Forum acknowledges that Bunurong and Wurundjeri Woi-wurrung Traditional Owners seek legislative and structural recognition of Traditional Owners sovereign responsibility to care for and manage Country, the right to the management of water and waterways, and the right to lead catchment and water-related decision-making on Country. The Yarra IWM Forum also acknowledges that Bunurong and Wurundjeri Woi-wurrung Traditional Owners seek the direct return of land and water for their self-determined use.

Although involvement in the Yarra IWM Forum has been limited recently, Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation and Bunurong Land Council Aboriginal Corporation have extensive experience in land and water management in Victoria, including significant contributions to the development and current implementation of the *Burndap Birrarung burndap umarkoo*, *Yarra Strategic Plan*, *Central and Gippsland Region Sustainable Water Strategy* and *Water is Life: Traditional Owner Access to Water Roadmap*.

## Water is life: Traditional Owner Access to Water Roadmap

The Victorian Government is committed to working with Traditional Owners to increase their access to water and their involvement in water management. Launched by the Minister for Water in October 2022, *Water is Life: Traditional Owner Access to Water Roadmap (Water is Life)* provides an important framework to support Traditional Owner self-determination in water access and management. Water is Life sets out clear pathways to increase Traditional Owner roles, responsibilities and resourcing water management in Victoria, and commits to increase the volume of water returned to Traditional Owners for cultural, spiritual and economic use.



## Central and Gippsland Region Sustainable Water Strategy

As statutory instruments required under the Water Act 1989, sustainable water strategies are an important tool for the Victorian Government to work in genuine partnership with Traditional Owners. In alignment with the *Victorian Government Self-Determination Reform Framework*, the *Central and Gippsland Region Sustainable Water Strategy* (2022) explicitly considers cultural, spiritual, social, wellbeing and economic outcomes for Traditional Owners through self-determination in water management.

Since 2023, the five Metropolitan Melbourne IWM Forums have been trialling new approaches to engage with Traditional Owner groups outside the IWM Forum and Working Group meetings, including via one-on-one meetings coordinated by DEECA. The intent has been to work within existing Traditional Owner platforms and processes at the request of Traditional Owner groups and therefore provide more time efficient and meaningful opportunities for Traditional Owners to remain connected to IWM Forum activities.

This coordinated approach led to the development of a new systemic enabling action within this plan: **Systemic enabling action 1: secure funding and resourcing to enable Traditional Owners to make decisions and determine IWM priorities on their Country** (refer to page 41). This action aims to better support ongoing Traditional Owner involvement in IWM, and meaningfully work towards restoring Traditional Owner rights and responsibilities in water management on their Country. This will require IWM Forum partners further investing and prioritising engaging with Traditional Owners to support this outcome. All registered Aboriginal parties across the five Metropolitan Melbourne IWM Forums and the IWM Forum partners support this action.

*'The Bunurong cultural perspective does not separate water from Country, but instead considers water and places part of Bunurong Country and symbolic of the interconnectedness of life and people.*

*Water 'connects us to our Country'; it travels through and with all Bunurong people, connecting us.'*

### **Bunurong Land Council Aboriginal Corporation Nation Statement (Water is Life, 2022)**

*'Our aspiration is to be structurally involved in each level of government regarding the decision-making and management of our lands and waterways.*

*We want this to be standard practice, not the exceptions.'*

### **Aunty Margaret Gardiner, Wurundjeri Woi-wurrung Elder in Nation Statement (Water is Life, 2022)**

# Priority actions to respond to catchment challenges

## What are priority actions?

Priority actions are important initiatives to help protect the region's distinctive character while delivering alternative water supplies for open space irrigation and agricultural purposes, and reducing stormwater pollutant loads to protect local waterways. Some are structural and others aim to resolve key water management barriers.

In September 2023, Forum Members agreed on 42 priority structural actions across the catchment. More information on these priority actions is provided in the 'Structural actions overview' section (page 15).

While progressing structural actions, IWM Forum partners recognise the need to simultaneously work towards resolving key barriers and challenges to the delivery of IWM, including funding, policy, regulation and, more broadly, governance, institutional challenges and planning.

There are 15 priority systemic enabling actions identified and listed in the 'Systemic enabling actions overview' section (page 25). Priority actions address key regional challenges and seek to support the widespread delivery of more structural actions. To deliver the necessary changes in industry practice, some actions will require a program of activities. It may take several years to progressively shift practice and unlock change.

Eighteen priority place-based enabling actions are listed in the 'Place-based enabling actions overview' section (page 27).

### 42 structural actions (Page 15)

Structural actions provide benefits that can be quantified. They deliver on-the-ground infrastructure, such as an alternative water supply network, or natural assets, such as wetlands, raingardens, rivers, creeks, trees and vegetation.

### 15 systemic enabling actions (Page 25)

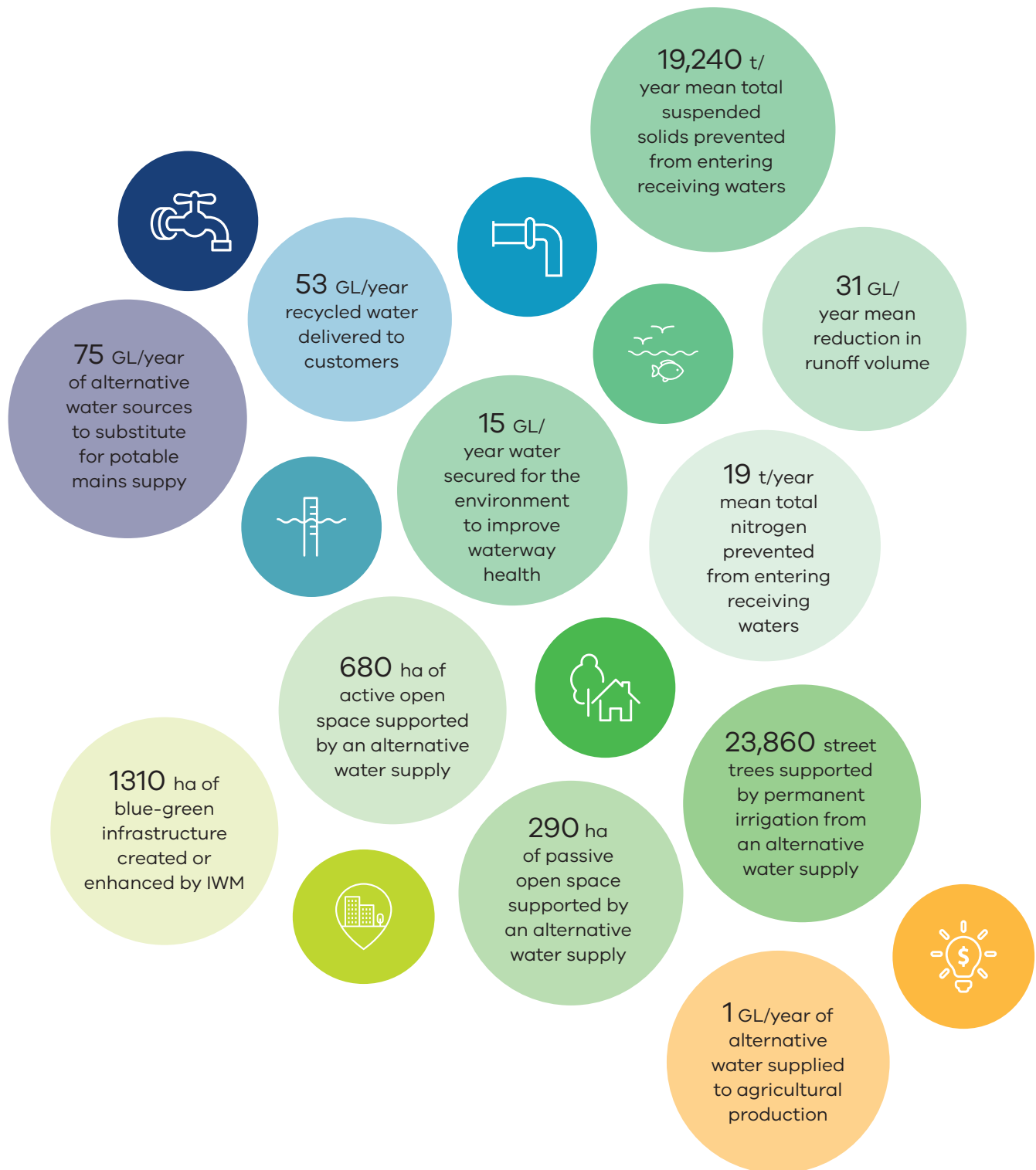
Systemic enabling actions help transition from conventional water management to IWM. Priority actions address key regional challenges.

### 18 place-based enabling actions (Page 27)

Place-based enabling actions help address local and site-specific issues.

## Impact of IWM actions on the Yarra catchment by 2050

We are already tracking what we have achieved and what we expect this plan to deliver for the Yarra catchment. For example, during the development of the IWM targets, the IWM Forums estimated the benefits of IWM projects delivered by 2019. Some of the key benefits expected by 2050 for the Yarra catchment are shown below, when combining the benefits we expect this plan to deliver with existing IWM benefits. For more details about the 2019 estimates, refer to the *Catchment Scale IWM Plan: Targets Driving Outcomes* (2022).



**Figure 2. Expected benefits in the Yarra catchment by 2050 (represents the combination of IWM benefits delivered in 2019 and the benefits expected through the implementation of all priority structural actions)**

## Part of a bigger picture

IWM requires collective effort across the entire Metropolitan Melbourne region. In Metropolitan Melbourne, there are a total of 135 priority structural actions and over 50 priority place-based actions.

Collectively the actions will shape the liveability, prosperity and resilience of the region. These are significant impacts that would otherwise not be realised through a less collaborative approach.

If all priority actions are delivered across the 5 Metropolitan Melbourne Forum areas, we will diversify our water supplies, improve catchment and waterway health, and sustain local food production.

The estimates below represent the key benefits expected for the region, when combining the IWM benefits we expect from the 5 *Catchment-scale IWM Plans: Actions for Delivery* with existing IWM benefits.

### Diversifying our water supplies

By 2030, we expect to deliver 42 GL/year of alternative water to substitute for drinking water, against a target of 53 GL/year. By 2050, this is expected to increase to 136 GL/year, against a target of 150 GL/year.

**2030**



79% of target met

**2050**



91% of target met

### Increasing recycled water supplies

By 2030, we expect to deliver 67 GL/year of recycled water to customers, against a target of 85 GL/year. By 2050, this is expected to increase to 137 GL/year of recycled water, against a target of 230 GL/year.

**2030**



76% of target met

**2050**



55% of target met

### Protecting our waterways from stormwater runoff

By 2030, we expect to deliver a 44 GL/year reduction in the volume of stormwater runoff entering waterways, against a target of 70 GL/year. By 2050, this is expected to increase to 79 GL/year, against a target of 197 GL/year.

**2030**



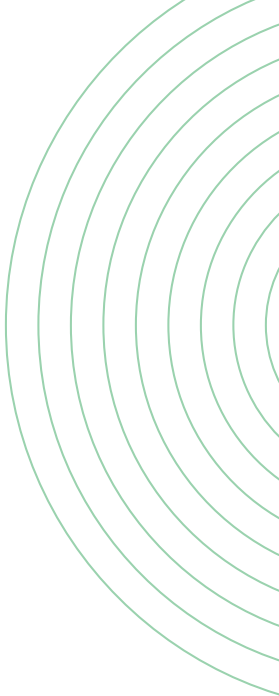
63% of target met

**2050**



35% of target met





### Increasing water for the environment

By 2030, we expect to secure 43 GL/year of water for the environment to improve waterway health, against a target of 55 GL/year for the year 2032<sup>1</sup>. By 2050, this is expected to increase to 56 GL/year.

2032



80% of target met

### Supporting agricultural production

By 2030, we expect to deliver 43 GL/year of alternative water for agricultural production, against a target of 63 GL/year. By 2050, this is expected to increase to 54 GL/year, against a target of 112 GL/year.

2030



68% of target met

2050



48% of target met

### Progress towards our targets

If we successfully deliver on this plan, we will be about 60% of the way towards meeting our 2050 targets. Some gaps still remain, particularly in reducing stormwater runoff. Over the next two years, the IWM Forums will continue to identify emerging opportunities in IWM.

Outside the IWM Forums, these gaps are also being addressed through local IWM projects, *Plan Melbourne*, *The Greater Melbourne Urban Water System Strategy*, and the *Central and Gippsland Region Sustainable Water Strategy*. We need to keep working together to meet our targets.

Target/  
outcomes  
met



<sup>1</sup> The target for returning water to the environment comes from the *Central and Gippsland Region Sustainable Water Strategy*. The strategy does not include a 2050 target.

# Structural actions overview

The next decade will see activities undertaken by Forum partners that will progress actions towards construction.

The 42 priority structural actions are at different stages of progress, from ideas development to feasibility and concept, business case, detailed design and construction. These are significant large-scale actions that will be complemented by many other local actions (not detailed in this plan). By their very nature, IWM actions deliver multiple outcome-based objectives (e.g. provision of an alternative water supply, water quality improvement, or waterway or landscape enhancement) and these are summarised in Table 1.

Figure 3 and Table 1 outline the priority structural actions for the Yarra catchment. A more detailed description of these actions is provided on pages 31-40.

Across Yarra's 42 priority structural actions:



**34x**  
diversify our water supplies



**7x**  
use recycled water



**15x**  
reduce / manage  
flood impact



**35x**  
contribute to healthy  
waterways



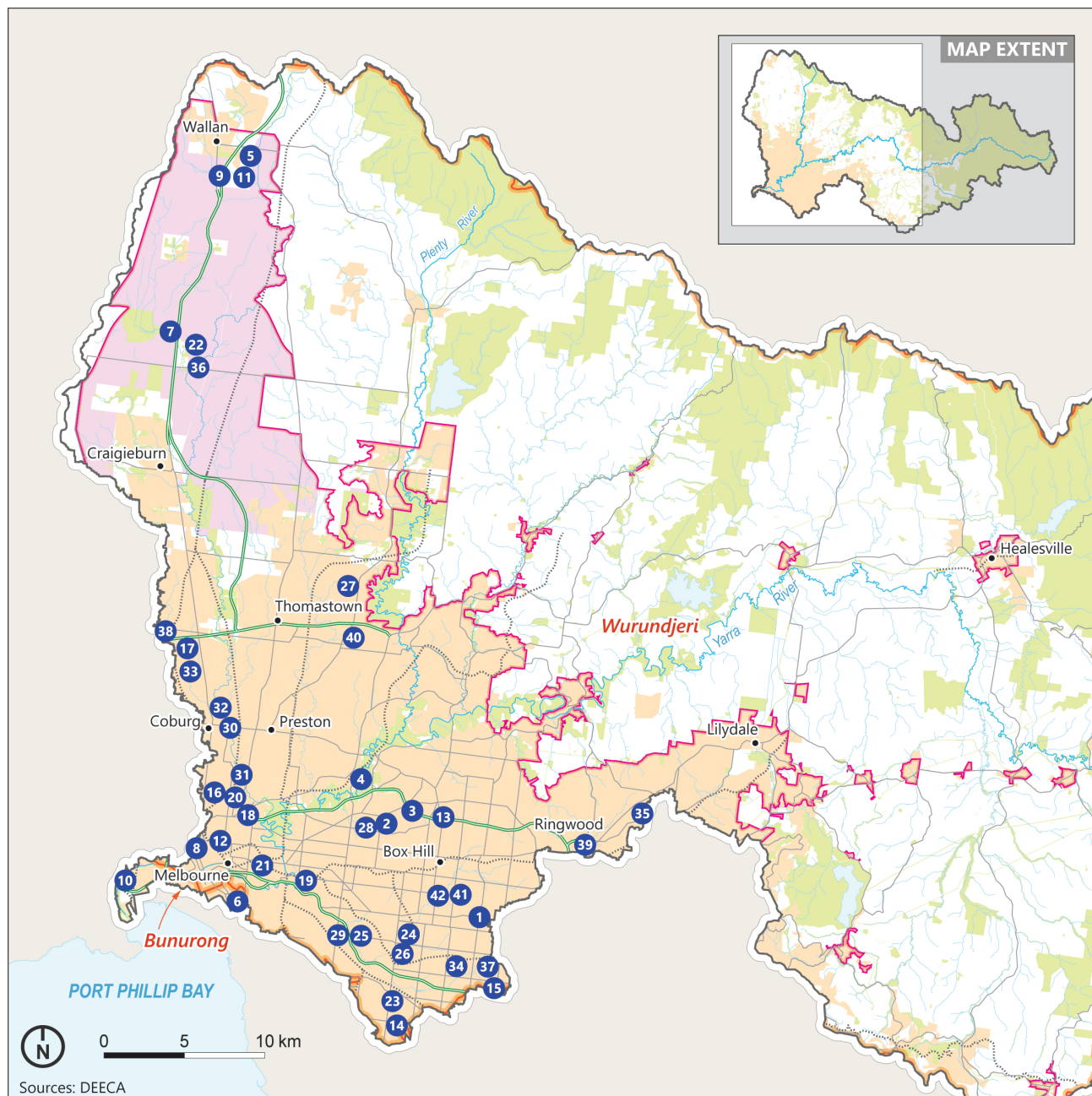
**22x**  
contribute to healthy  
landscapes



**20x**  
reflect community  
values in planning



**4x**  
deliver water for  
industry / agriculture
















































































## Priority Structural Actions Yarra Catchment

- Town
  - Freeway
  - Major Road
  - ..... Rail
  - River or Major Creek
  - Minor Creek
  - Urban Area
  - Growth Area
  - Urban Growth Boundary
  - Registered Aboriginal Parties
  - Reserve
1. Eastern Alternative Water Scheme – Stage 1
  2. Eastern Alternative Water Scheme – Stage 2
  3. All New Class 1 Dwellings and Alterations over 75 Square Metres Install a Rainwater Tank
  4. Annulus and Banksia Street Wetlands Project
  5. Beveridge NW (Hazelwynde) Stormwater Harvesting
  6. Fawcner Park Stormwater Harvesting
  7. Northern Growth Areas Dual Pipe
  8. Flagstaff Gardens Precinct Stormwater Harvesting
  9. Upper Merri Creek Stormwater Harvesting
  10. Fishermans Bend Water Recycling Plant and Recycled Water Network
  11. Wallan Restorative Project
  12. Carlton Gardens Alternative Water Supply
  13. Doncaster Hill Recycled Water Scheme
  14. Scammell Reserve Stormwater Harvesting
  15. Central Reserve Stormwater Harvesting
  16. Curtain Square Stormwater Harvesting
  17. Box Forest Retarding Basin - Wetland
  18. Darling Gardens Stormwater Harvesting
  19. Sir Zelman Cowen Park Stormwater Harvesting
  20. Inner Circle Linear Park Stormwater Harvesting
  21. Barkly Gardens Stormwater Harvesting
  22. Kalkallo Stormwater Pilot
  23. Warrawee Park Stormwater Harvesting
  24. Gardiners Creek Naturalisation - Highbury to Warrigal
  25. Darling Park Stormwater Harvesting
  26. Jingella/Ashwood/Holmesglen Stormwater Harvesting
  27. Peter Hopper Lake Upgrade
  28. Macleay Park Raingarden and Stormwater Harvesting
  29. TH King Oval – Stormwater Harvesting
  30. De Chene Reserve Stormwater Harvesting
  31. Sumner Park Raingarden and Stormwater Harvesting
  32. Jackson Reserve Wetland and Stormwater Harvesting
  33. Reddish Reserve Stormwater Harvesting
  34. Valley Conservation Reserve Water and Sediment Management
  35. Brushy Creek Dual Pipe
  36. Cloverton Stormwater Harvesting
  37. Bogong Reserve Water and Sediment Management
  38. Jack Roper Stormwater Harvesting
  39. Greening the Greyfields
  40. Redmond Court Wetland Reset in Banyule
  41. Investigate Stormwater Harvesting Opportunities within Whitehorse
  42. Audit of Existing WSUD Assets

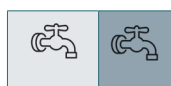
**Figure 3. Map of priority structural actions for the Yarra catchment**

Note: Locations of actions shown here are general in nature. IWM actions may apply across a larger area than shown.

Table 1. Overview of priority structural actions for the Yarra catchment

IWM action	Strategic outcomes						
Eastern alternative water scheme – stage 1							
Eastern alternative water scheme – stage 2							
Stronger state building and plumbing regulations to improve water efficiency of buildings							
Annulus and Banksia Street wetlands project							
Beveridge northwest (Hazelwynde) stormwater harvesting							
Fawkner Park stormwater harvesting							
Northern growth areas dual pipe							
Flagstaff Gardens precinct stormwater harvesting							
Upper Merri Creek stormwater harvesting							
Fishermans Bend water recycling plant and recycled water network							
Wallan restorative project							

#### Shade scale



No  
Impact

#### Strategic outcome icons

Strategic outcomes are described on page 7.

Lead agency	Implementation partners	Status
Yarra Valley Water	South East Water, Melbourne Water, DEECA, councils in south-eastern and eastern areas <sup>1</sup>	<div><div></div><div></div></div>
DEECA	Yarra Valley Water, South East Water, Melbourne Water, councils in the inner, eastern and north-eastern metropolitan areas	<div><div></div><div></div></div>
DEECA	All Forum partners	<div><div></div><div></div><div></div></div>
Melbourne Water	Wurundjeri WWCAC, Projects Victoria, Banyule City Council, Friends of Yarra Flat, DEECA	<div><div></div><div></div><div></div><div></div></div>
Yarra Valley Water	Melbourne Water, Mitchell Shire Council	<div><div></div><div></div></div>
City of Melbourne	City of Stonnington, South East Water	<div><div></div><div></div></div>
Yarra Valley Water	Melbourne Water, Mitchell Shire Council, Hume City Council, Whittlesea Council	<div><div></div><div></div><div></div></div>
City of Melbourne	Greater Western Water	<div><div></div><div></div></div>
Melbourne Water	Yarra Valley Water, Hume City Council, Whittlesea City Council, Mitchell Shire Council, Wurundjeri WWCAC, Victorian Planning Authority	<div><div></div></div>
South East Water	Port Phillip City Council, City of Melbourne, Melbourne Water, Fishermans Bend Task Force	<div><div></div><div></div></div>
Yarra Valley Water	Melbourne Water, Mitchell Shire Council	<div><div></div><div></div></div>

#### Strategy opportunity status

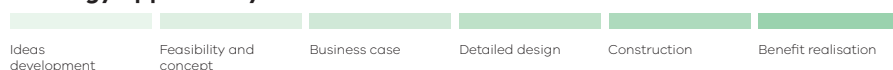






















































































Table 1. Overview of priority structural actions for the Yarra catchment (continued)

IWM action	Strategic outcomes						
Carlton Gardens alternative water supply							
Doncaster Hill recycled water project - stage 1							
Scammell Reserve stormwater harvesting							
Central Reserve stormwater harvesting							
Curtain Square stormwater harvesting							
Box Forest retarding basin – wetland							
Darling Gardens stormwater harvesting							
Sir Zelman Cowen Park stormwater harvesting							
Inner Circle Railway linear park stormwater harvesting							
Barkly Gardens stormwater harvesting							
Kalkallo stormwater pilot							
Warrawee Park stormwater harvesting							

#### Shade scale



No  
Impact

Impact

#### Strategic outcome icons

Strategic outcomes are described on page 7.



Lead agency	Implementation partners	Status
City of Melbourne	To be agreed	<div><div></div><div></div></div>
Yarra Valley Water	Manningham City Council	<div><div></div><div></div><div></div><div></div></div>
Monash City Council	Metropolitan Golf Club, Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Monash City Council	To be agreed	<div><div></div><div></div><div></div><div></div></div>
Yarra City Council	Melbourne Water, Greater Western Water	<div><div></div><div></div><div></div><div></div></div>
Melbourne Water	Merri-bek City Council, Greater Metropolitan Cemeteries Trust	<div><div></div><div></div></div>
Yarra City Council	Melbourne Water, Greater Western Water	<div><div></div><div></div></div>
City of Stonnington	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Yarra City Council	Melbourne Water, Greater Western Water	<div><div></div><div></div></div>
Yarra City Council	Melbourne Water, Greater Western Water	<div><div></div></div>
Yarra Valley Water	Melbourne Water	<div><div></div><div></div></div>
Monash City Council	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>

### Strategy opportunity status

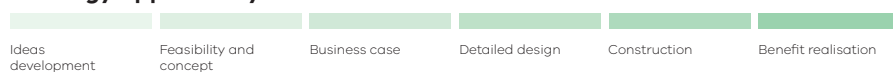




















































































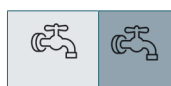


Table 1. Overview of priority structural actions for the Yarra catchment (continued)

IWM action	Strategic outcomes						
Gardiners Creek naturalisation – Highbury to Warrigal							
Darling Park stormwater harvesting							
Jingella/ Ashwood/ Holmesglen stormwater harvesting							
Peter Hopper Lake upgrade							
Macleay Park raingarden and stormwater harvesting							
T H King Oval stormwater harvesting							
De Chene Reserve stormwater harvesting							
Sumner Park raingarden and stormwater harvesting							
Jackson Reserve wetland and stormwater harvesting							
Reddish Reserve stormwater harvesting							
Valley conservation reserve water and sediment management							
Brushy Creek dual pipe							

#### Shade scale



No  
Impact

Impact

#### Strategic outcome icons

Strategic outcomes are described on page 7.

Lead agency	Implementation partners	Status
Monash City Council	To be agreed	<div></div>
City of Stonnington	Melbourne Water	<div></div>
Monash City Council	To be agreed	<div></div>
Whittlesea City Council	To be agreed	<div></div>
City of Boroondara	Melbourne Water	<div></div>
City of Stonnington	Melbourne Water	<div></div>
Merri-bek City Council	Melbourne Water	<div></div>
Merri-bek City Council	Melbourne Water	<div></div>
Merri-bek City Council	Melbourne Water	<div></div>
Merri-bek City Council	Melbourne Water	<div></div>
Monash City Council	To be agreed	<div></div>
Yarra Valley Water	To be agreed	<div></div>

### Strategy opportunity status

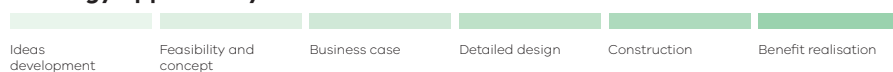

















































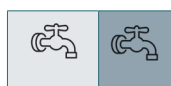


Table 1. Overview of priority structural actions for the Yarra catchment (continued)

IWM action	Strategic outcomes						
Cloverton stormwater harvesting							
Bogong Reserve water and sediment management							
Jack Roper stormwater harvesting							
Greening the Greyfields							
Redmond Court wetland reset in Banyule							
Investigate stormwater harvesting opportunities within Whitehorse							
Audit of existing WSUD assets							

#### Shade scale



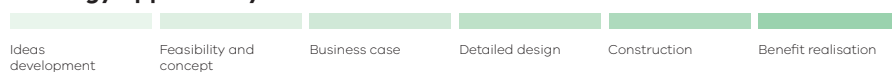
No  
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#### Strategic outcome icons

Strategic outcomes are described on page 7.

Lead agency	Implementation partners	Status
Hume City Council	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Monash City Council	To be agreed	<div><div></div><div></div></div>
Hume City Council	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Maroondah City Council	DEECA, Victorian Planning Authority, Swinburne University	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
Banyule City Council	Melbourne Water	<div><div></div><div></div><div></div><div></div><div></div></div>
Whitehorse City Council	To be agreed	<div><div></div><div></div></div>
Whitehorse City Council	To be agreed	<div><div></div><div></div></div>

### Strategy opportunity status





# Systemic enabling actions overview

These actions have been developed to tackle the systemic barriers to mainstreaming IWM such as funding, policy, and planning barriers. They work at a regional scale to assist in the delivery of on-the-ground structural actions.

Fifteen systemic enabling actions have been identified. These actions are listed in Table 2 in order of priority, as assessed by IWM Forum stakeholders. For each of the actions, the lead delivery agency, implementation partners and action status are noted.

Some systemic enabling actions will require a program of activities in order to deliver the necessary changes to industry practice. It may take several years to progressively shift practice and unlock change.





Table 2. Summary of priority systemic enabling actions for Metropolitan Melbourne

IWM action	Lead agency	Implementation partners	Status
Secure funding and resourcing to enable Traditional Owners to make decisions and determine IWM priorities on their Country	DEECA, water corporations and local governments	Traditional Owner groups*	<div><div></div><div></div><div></div><div></div></div>
Build capacity across IWM Forum partners to plan and deliver IWM	DEECA, water corporations and local governments	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Develop an investment framework for IWM	DEECA	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Embed IWM in land-use planning and urban development	DEECA, Department of Transport and Planning	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Clarify roles and responsibilities for delivering IWM outcomes	DEECA	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Develop guidance for stormwater harvesting and infiltration	Melbourne Water, EPA, local governments	All IWM Forum partners, development sector	<div><div></div><div></div><div></div><div></div></div>
Develop policy and regulatory support for increased use of recycled water and treated stormwater	DEECA	All IWM Forum partners, development sector	<div><div></div><div></div><div></div><div></div></div>
Further develop the IWM resource hub to share data and information	DEECA	All IWM Forum partners	<div><div></div><div></div></div>
Develop a water sensitive urban design (WSUD) asset maintenance framework	DEECA**	Melbourne Water, local governments	<div><div></div><div></div></div>
Develop a framework for installation and maintenance of rainwater tanks	DEECA, water corporations	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Develop sub-catchment scale targets for total suspended solids and total nitrogen prevented from discharging to waterways	DEECA**	All IWM Forum partners	<div><div></div><div></div></div>
Strengthen policy and regulatory support for urban greening	DEECA**	All IWM Forum partners	<div><div></div><div></div></div>
Improve community knowledge and involvement in urban water management	Water corporations, DEECA	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Develop and deliver a water efficiency plan for Greater Melbourne	Water corporations	All IWM Forum partners	<div><div></div><div></div><div></div><div></div></div>
Investigate opportunities to use recycled water and stormwater to improve environmental flows	DEECA, water corporations	All IWM forum partners	<div><div></div><div></div><div></div><div></div></div>

Strategy opportunity status



Note: \*Bunurong Land Council Aboriginal Corporation (BLCAC), Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC), Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC).  
 Note: \*\* indicates that DEECA will collaboratively seek a lead organisation and partners to deliver this action.

# Place-based enabling actions overview

Place-based enabling actions address specific challenges for the catchment and can significantly contribute to mainstreaming IWM. They work hand-in-hand with systemic enabling actions and priority structural actions, unlocking additional IWM opportunities.

Place-based enabling actions focus on understanding and identifying catchment-specific opportunities.

Seventeen place-based enabling actions have been identified. These actions are listed in Table 3 in order of priority as agreed by IWM Forum members. For each of the actions, the lead delivery agency and action status are listed.

Table 3. Summary of priority place-based enabling actions for the Yarra catchment

IWM action	Lead agency	Status
Undertake strategic assessments of catchment scale spatial IWM opportunities – Yarra catchment	DEECA*	<div><div></div><div></div></div>
Greater Western Water stormwater harvesting fund	Greater Western Water	<div><div></div><div></div><div></div><div></div></div>
Assess open space irrigation for urban cooling opportunities	Yarra Valley Water	<div><div></div><div></div><div></div><div></div></div>
Explore large-scale stormwater harvesting opportunities	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Support implementation of Flood Management Strategy for Port Phillip and Western Port – Action Plan 2021–2026	Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Implementation of the Fishermans Bend Water Sensitive City Strategy	Fishermans Bend Sustainability Working Group	<div><div></div><div></div><div></div><div></div></div>
Governance for smart tanks in Fishermans Bend	Fishermans Bend Sustainability Working Group	<div><div></div><div></div><div></div><div></div></div>
Mapping IWM opportunities in streetscapes in the Melbourne Local Government Area	City of Melbourne	<div><div></div><div></div><div></div><div></div></div>
Guidelines for proprietary products in the Melbourne Local Government Area	City of Melbourne	<div><div></div><div></div><div></div><div></div></div>
Permeable pavement design and construction guidance	City of Melbourne	<div><div></div><div></div></div>
Gardiners Creek (KooyongKoot) Masterplan implementation	City of Stonnington and City of Boroondara	<div><div></div><div></div><div></div><div></div></div>
Whittlesea City Council – WSUD asset renewal program	Whittlesea City Council	<div><div></div><div></div><div></div><div></div></div>
Whittlesea City Council – stormwater harvesting performance audit	Whittlesea City Council	<div><div></div><div></div><div></div><div></div></div>
Mullum Mullum Creek collaborative management plan	Manningham City Council, Maroondah City Council	<div><div></div><div></div><div></div><div></div></div>
Develop plan for the management of erosion risks along the Yarra River, Warrandyte	Manningham City Council, Melbourne Water	<div><div></div><div></div><div></div><div></div></div>
Manningham IWM Masterplan	Manningham City Council	<div><div></div><div></div><div></div><div></div></div>
Conduct community education on alternative water	Water corporations, local governments, DEECA	<div><div></div><div></div></div>
Enabling the realisation of IWM opportunities in the proposed Cloverton Metropolitan Activity Centre	Hume and Whittlesea City Councils	<div><div></div><div></div><div></div><div></div></div>

Strategy opportunity status



Note: \* indicates that DEECA will collaboratively seek a lead organisation to deliver this action.

# Success stories

Since the release of the Yarra Strategic Directions Statement, IWM Forum partners are successfully delivering numerous projects, paving the way for the identification and delivery of future actions. The projects highlighted here are a selection of many success stories across the Yarra catchment. Delivery of many of these projects has been through collaborative partner investment including co-investment from the Victorian Government.

## Fishermans Bend Water Sensitive City Strategy

**This project is recognised as a priority (Action 6) in the Yarra Integrated Water Management Forum's Strategic Directions Statement.**

Fishermans Bend is Australia's largest urban renewal project, covering approximately 480 hectares in the heart of Melbourne. It is adjacent to the Yarra River and Port Phillip Bay and is vulnerable to flooding due to its flat, low-lying geography and capacity constraints in the existing drainage system. Demand for water in Fishermans Bend will increase as the precinct population expands, with an anticipated 80,000 residents, 80,000 workers and 20,000 tertiary education students by 2055 (with significant growth likely beyond this period). The Fishermans Bend Framework establishes the need for IWM planning to provide access to high-quality potable and recycled water and to address flooding issues.

The Fishermans Bend Water Sensitive City Strategy, released in 2022, builds on the Fishermans Bend Framework's sustainability goals, targets, objectives, strategies to support its Vision to become "a thriving place that is a leading example of environmental sustainability, liveability, connectivity, diversity and innovation". The Strategy is the result of collaboration between the Fishermans Bend Taskforce (Department of Environment, Land, Water and Planning, Melbourne Water, South East Water, the City of Melbourne, the City of Port Phillip, CRC for Water Sensitive Cities and the Office of the Victorian Government Architect).

The Strategy is an excellent example of how collaboration can deliver outcomes for the community that go beyond individual stakeholder interests and will be implemented using a multi-scale approach, with actions in both the public and private realms. Smart rainwater tanks provide distributed storages in all new developments, pumps, levees and water sensitive urban design in open spaces and streetscapes will play a critical role in precinct-scale flood mitigation. Alternative water sources will be harnessed; from rainwater and stormwater in all new buildings via smart rainwater tanks, and through a multiple treatment process, while sewerage will be treated at a precinct-scale water recycling plant providing Class A recycled water via a third pipe network across Fishermans Bend.

Significant work has been undertaken to implement the Strategy. This includes the development of guidance for developers and planners on how to achieve IWM planning requirements for the precinct and collaborative work to understand how to embed the design of distributed water storage tanks into the urban form. The location of the South East Water, State Government funded, Water Recycling Plant has been identified, with an approved amendment to the Melbourne Planning Scheme facilitating land acquisition.

The Strategy is a cornerstone IWM action that delivers on all catchment scale strategic outcomes and showcases the importance of early collaboration.



## City Oval Stormwater Harvesting Scheme

Infill development and urban renewal is rapidly occurring in Coburg as existing residential properties are being transformed into higher-density, apartment-style housing. There is increasing community demand for access to high-quality public parks and sporting facilities. City Oval is a high-profile recreational reserve and Class A sportsground in Coburg and is council's highest use of water for irrigation. The site uses over 15 million litres of water for irrigation each year. Prior to construction of the City Oval Stormwater Harvesting Scheme, irrigation for this facility was supplied using drinking water.

Merri-bek City Council, in partnership with Melbourne Water and the Victorian Government, worked to replace drinking water with stormwater diverted from a Melbourne main drain. The stormwater is treated using a raingarden – a specially designed garden bed that filters and cleans stormwater runoff – prior to UV disinfection and storage in 600-kilolitre underground tanks, to provide high-quality water when needed. A flow meter regulates water levels in the pond and raingarden, ensuring no flooding occurs. These water features, along with a timber boardwalk and seating, provide improved community access and enjoyment of the park.

It is estimated that the scheme provides over 70% of the City Oval irrigation demand in a typical year, replacing more than 4.5 Olympic-sized swimming pools of drinking water. The scheme is backed up with drinking water to ensure the irrigation demands of the site are met in drier years. The treatment and harvesting of urban runoff also improve the quality of water that flows into Merri Creek, the Yarra River and Port Phillip Bay, thereby helping to improve waterway health.

## Northern Area Dual Pipe

As Melbourne's suburbs expand north over the next 30 years to accommodate our growing population, recycled water treatment plants will be constructed and expanded at Aurora, Wollert and Wallan. Mandated purple dual pipe areas in the northern growth corridor will supply high quality water to future residential developments in the northern growth corridor, extending from Epping & Greenvale to Wallan, for toilet flushing, clothes washing, garden and public open space irrigation. This climate-resilient water supply will reduce reliance on drinking water sources and support liveability, urban greening and cooling in the region.

As significant parts of the upper reaches are yet to be developed, the region is a stormwater priority waterway area. The northern area dual pipe is being collaboratively investigated for its opportunity to support stormwater harvesting, waterway health and regeneration to meet stormwater harvesting, evapotranspiration and infiltration targets; and will likely be supported by the Upper Merri Creek Stormwater Harvesting priority action listed below.

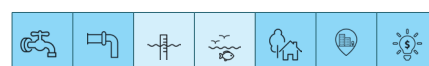
# Action descriptions

This section provides a description of priority structural, systemic enabling and place-based enabling actions. For each action, an overview is provided together with details on the action status, lead agency and implementation partners.

## Structural Action 1

### Eastern alternative water scheme – stage 1

The Eastern alternative water scheme will explore opportunities for alternative water supply and use in the eastern region of Melbourne. Possible sources include high-quality recycled water, stormwater, rainwater and greywater, which can be used for non-drinking water purposes such as flushing toilets, clothes washing, irrigation, car washing, watering gardens and other industrial uses. Developing alternative water schemes will strengthen the water system's climate resilience, help customers save drinking water and improve waterway health and liveability.

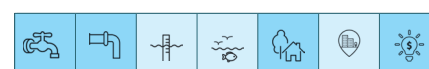


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	Yarra Valley Water
<b>Implementation Partners</b>	South East Water, Melbourne Water, DEECA, councils in south-eastern and eastern areas

## Structural Action 2

### Eastern alternative water scheme – stage 2

The Eastern alternative water scheme will explore opportunities for alternative water supply and use in the eastern region of Melbourne (see Action 2). This action relates to the potential expansion of the proposed scheme further north to support agriculture in the Yarra Valley. The water will provide a safe, secure irrigation supply to enable farmers to increase productivity and diversify into alternative higher-value crops, generating jobs and economic growth.



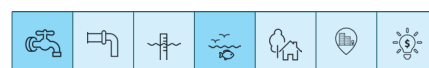
<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	Yarra Valley Water, South East Water, Melbourne Water, councils in the inner, eastern and north-eastern metropolitan areas

## Structural Action 3

### Stronger state building and plumbing regulations to improve the water efficiency of buildings

Review existing and consider new improved water efficiency building and plumbing requirements via a Regulatory Impact Statement process. This includes evaluating the costs and benefits of: (a) requiring a broader range of developments to install rainwater tanks, and (b) raising water efficiency of water appliances and fixtures such as toilets, taps and showers.

While this action will be implemented as part of the *Central and Gippsland Region Sustainable Water Strategy*, it is relevant to development across the state. Regular maintenance is needed for rainwater tanks to function correctly, so ways to improve the maintenance and functionality of tanks will also be assessed to help increase water efficiency and support implementation of any future rainwater tank requirements.



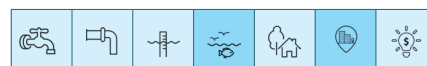
<b>Status</b>	Business Case
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	All Forum partners



## Structural Action 4

### Annulus and Banksia Street wetlands project

The Annulus and Banksia Street billabongs, at Yarra Flats in Ivanhoe, are a series of natural wetlands of cultural significance to the Wurundjeri Woi-wurrung people. Changes in flow conditions due to catchment urbanisation have starved the billabongs of naturally occurring replenishing flows. There are plans to reintroduce regular flows to these systems to ensure their ecological and cultural values are restored. A new stormwater wetland complex will improve water quality sourced from the Banksia Street main drain and deliver high-quality water to the Annulus and Banksia Street billabongs. Additionally, an improved water regime to Annulus billabong will be achieved through a new connection to the Yarra River.

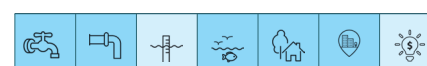


<b>Status</b>	Detailed Design
<b>Lead Agency</b>	Melbourne Water
<b>Implementation Partners</b>	Wurundjeri WWCHAC, Projects Victoria, Banyule City Council, Friends of Yarra Flat, DEECA

## Structural Action 5

### Beveridge northwest (Hazelwynde) stormwater harvesting

Hazelwynde is a 740-hectare parcel of land owned by Yarra Valley Water in Beveridge, north of Melbourne, which will become surplus to operational needs in 2023. The vision for Hazelwynde includes establishing a community that meets its own water needs through leading-edge water management, including stormwater harvesting opportunities. Treating runoff for use across this urban area would save millions of litres of drinking water every year. It would also support the long-term health of local waterways by improving stormwater quality and reducing flows to local creeks. Opportunities are being shaped through collaboration with community groups, property development experts, local government planning authorities and other government agencies.

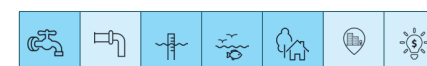


<b>Status</b>	Feasibility and Concept
<b>Lead Agency</b>	Yarra Valley Water
<b>Implementation Partners</b>	Melbourne Water, Mitchell Shire Council

## Structural Action 6

### Fawkner Park stormwater harvesting

Fawkner Park in South Yarra is one of Melbourne's most popular parks, with over 9,000 people enjoying the space every day. The park currently uses drinking water to service its sporting pavilions, sportsgrounds, and paths lined with Moreton Bay figs and other exotic trees. There is an opportunity to harvest, treat and store stormwater from the upstream catchment within the City of Melbourne and City of Stonnington to irrigate the park and its surrounding landscape. It is estimated that the scheme could replace 35 megalitres of drinking water per year, support the long-term health of this green space and improve the quality of water that flows to the Yarra River. This action is a collaboration between City of Melbourne and City of Stonnington.

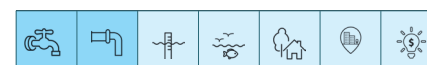


<b>Status</b>	Feasibility and Concept
<b>Lead Agency</b>	City of Melbourne
<b>Implementation Partners</b>	City of Stonnington, South East Water

## Structural Action 7

### Northern growth areas dual pipe

The Aurora and Wallan Recycled Water Treatment Plants produce high-quality recycled water to provide a climate-resilient water supply, reducing reliance on drinking water sources. As Melbourne's northern suburbs continue to develop from Epping North to Wallan, Yarra Valley Water is planning to invest in more recycled water infrastructure. This includes a new recycled water treatment plant at Wollert. With the Upper Merri Creek being identified as a stormwater priority area, rich in cultural values, unique features and biodiversity, Yarra Valley Water continues to work with our industry partners and stakeholders to diversify our alternative water supply, including stormwater harvesting. This action will support liveability, waterway health, urban greening and cooling in the region, while continuing to reduce reliance on drinking water sources.

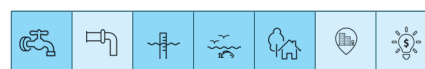


<b>Status</b>	Business Case
<b>Lead Agency</b>	Yarra Valley Water
<b>Implementation Partners</b>	Melbourne Water, Mitchell Shire Council, Hume City Council, Whittlesea Council

## Structural Action 8

### Flagstaff Gardens precinct stormwater harvesting

Flagstaff Gardens in West Melbourne is the oldest park in the municipality. It is highly visited and widely used by residents, office workers and tourists, who enjoy its extensive lawns, native and exotic trees, tennis courts and bowling green. There is an opportunity to harvest and store stormwater from the City of Melbourne's Elizabeth Street drainage system to potentially replace 15 megalitres of drinking water per year. This water would be used for irrigation of the park and to support the long-term health of the Flagstaff Gardens precinct. In addition to this local opportunity, this action will also explore a precinct-wide stormwater harvesting scheme to replace potable water for the irrigation of surrounding landscapes.

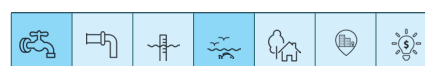


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	City of Melbourne
<b>Implementation Partners</b>	Greater Western Water

## Structural Action 9

### Upper Merri Creek stormwater harvesting

The Upper Merri Creek is highly valued by the community and is home to large and diverse remnants of native vegetation as well as protected and threatened flora and fauna. Stormwater harvesting in the Upper Merri Creek catchment aims to reduce the impact of anticipated urban development and keep the creek healthy for fish and other wildlife. Removing excess urban runoff through harvesting the stormwater helps to improve stormwater quality entering the Merri Creek and local waterways, reduce reliance on drinking water sources, and support urban greening and cooling in the region.



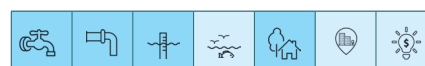
<b>Status</b>	Idea development
<b>Lead Agency</b>	Melbourne Water
<b>Implementation Partners</b>	Yarra Valley Water, Hume City Council, Whittlesea City Council, Mitchell Shire Council, Wurundjeri WWCHAC, Victorian Planning Authority

## Structural Action 10

### Fishermans Bend water recycling plant and recycled water network

Fishermans Bend is a 485-hectare urban renewal development in inner Melbourne. A water recycling plant is being planned for construction in the precinct to supply high-quality water through a dedicated 'purple pipe' to all buildings for clothes washing, toilet flushing, and irrigation of gardens, parks and sporting facilities. The climate-resilient water source will reduce use of drinking water and provide greening and urban cooling benefits to the community. This is a catalyst action for the precinct that will enable the implementation of the wider Fishermans Bend Water Sensitive City Strategy. At full capacity, the water recycling plant will provide around 18.5 megalitres of water per day.

This action will undertake a feasibility assessment for the design and construction of the water recycling plant and associated network.

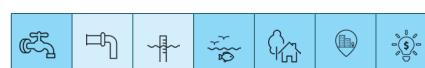


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	South East Water
<b>Implementation Partners</b>	Port Phillip City Council, City of Melbourne, Melbourne Water, Fishermans Bend Task Force

## Structural Action 11

### Wallan restorative project

The Wallan Restorative Project seeks to reduce the impacts of urban development on the ecological health of the Upper Merri Creek. As development progresses, there are opportunities to significantly reduce urban stormwater runoff. This will be achieved through the regeneration of an ephemeral stormwater treatment wetland to increase evaporation, urban cooling and infiltration. Yarra Valley Water will explore integrating this scheme with future stormwater harvesting treatment wetlands and investigate the feasibility of mixing the harvested water into the existing recycled water network for irrigation uses. Removing excess urban runoff will help to protect Merri Creek and reduce reliance on drinking water sources.

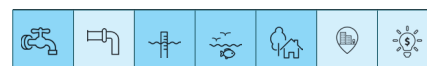


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	Yarra Valley Water
<b>Implementation Partners</b>	Melbourne Water, Mitchell Shire Council

### Structural Action 12

#### Carlton Gardens alternative water supply

Carlton Gardens is located on the north-eastern edge of the Melbourne central business district and is one of Australia's most significant heritage gardens. Over 40 megalitres of water per year is required to maintain this space, some of which is stormwater that is used to top up the lake and irrigate garden beds. Increased access to alternative water sources such as stormwater will be needed to retain a good level of amenity and comfort for visitors, particularly on hotter days. This action will investigate options to provide alternative water sources to Carlton Gardens. A preliminary assessment estimates that a stormwater harvesting scheme within this area could supply enough water to replace 10.5 megalitres of drinking water per year and support the long-term health of this significant public green space.

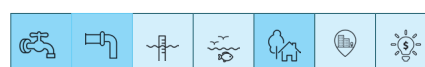


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	City of Melbourne
<b>Implementation Partners</b>	To be agreed

### Structural Action 13

#### Doncaster Hill recycled water project - stage 1

The Doncaster Hill water recycling facility will provide high quality recycled water to the community in Melbourne's east. The new facility will support the strategic commitment to increase sustainable water supplies to the community by delivering recycled water to over 5,000 properties in and around Doncaster Hill, as well as local sports grounds and parks. Construction of the underground facility is expected to begin in 2025.



<b>Status</b>	Detailed design
<b>Lead Agency</b>	Yarra Valley Water
<b>Implementation Partners</b>	Manningham City Council

### Structural Action 14

#### Scammell Reserve stormwater harvesting

Metropolitan Golf Club and Monash City Council plan to harvest and treat stormwater from council drains to provide an irrigation supply for the golf course (68 hectares) and Scammell Reserve (1.5 hectares of public open space). The system could supply up to 95 megalitres of water in an average rainfall year and 70 megalitres in a dry year. The water will reduce reliance on drinking water sources and support liveable communities, urban greening and cooling in the region.

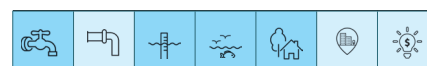


<b>Status</b>	Detailed design
<b>Lead Agency</b>	Monash City Council
<b>Implementation Partners</b>	Metropolitan Golf Club, Melbourne Water

### Structural Action 15

#### Central Reserve stormwater harvesting

Central Reserve in Glen Waverley is a high-profile sporting precinct which includes multiple ovals and facilities. Stormwater will be sourced from local council drains, treated and harvested to provide an irrigation supply to 5 hectares of active public open space. The water will reduce reliance on drinking water sources and support liveable communities.



<b>Status</b>	Detailed design
<b>Lead Agency</b>	Monash City Council
<b>Implementation Partners</b>	To be agreed



## Structural Action 16

### Curtain Square stormwater harvesting

Curtain Square is located in Carlton North and is a popular park for the community. There is an opportunity to harvest stormwater from an existing Melbourne Water drain and treat it using a vegetated system. The scheme will include a 420-kilolitre underground tank and a pump station to distribute the water to Curtain Square for irrigation of the landscape. It is estimated that the scheme will replace 10 megalitres of drinking water per year and support the long-term health of this green space for the local community.

## Structural Action 17

### Box Forest retarding basin – wetland

Public access to urban green spaces is highly sought after by communities and essential for health and wellbeing. The Box Forest Retarding Basin in Glenroy is currently fenced, and there is an opportunity redesign the site into a multi-functional space, with a wetland in the base of the existing basin to treat stormwater and potential to harvest the water for irrigating nearby playing fields. The future site will support liveable communities by increasing access to additional green spaces. It will also improve the quality of stormwater that flows into the local waterway, while maintaining the site's function in reducing flood risk.

## Structural Action 18

### Darling Gardens stormwater harvesting

Harvested stormwater will be treated, stored and used to irrigate Darling Gardens, Clifton Hill, reducing the reliance on drinking water sources, providing urban greening benefits and reducing nuisance flooding.

## Structural Action 19

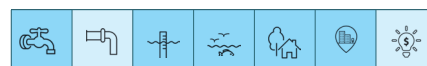
### Sir Zelman Cowen Park stormwater harvesting

Sir Zelman Cowen Park in Kooyong is a popular community space bordering Gardiners Creek, featuring sportsgrounds, a playground and a picnic area. This action will extract stormwater from Gardiners Creek and KooyongKoot catchment into above-ground storage tanks, treat it with a UV disinfection system and distribute it to two sports ovals onsite with an irrigation pump. It is estimated that this action will save around 12 megalitres of drinking water.

## Structural Action 20

### Inner Circle Railway linear park stormwater harvesting

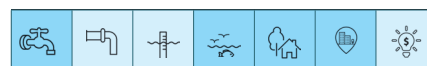
The Inner Circle Railway linear parklands extend from Rushall Station in North Fitzroy to Bowen Crescent, Princes Hill, and follow the alignment of the former Inner Circle Railway. There is an opportunity to divert stormwater into a newly constructed treatment wetland to improve the quality of the water and use it to irrigate the parklands during drier months. A harvesting scheme will reduce reliance on drinking water sources, improve the quality of water that flows into Merri Creek, provide urban greening benefits and reduce nuisance flooding in the nearby streets.



**Status** Detailed design

**Lead Agency** Yarra City Council

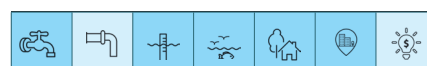
**Implementation Partners** Melbourne Water, Greater Western Water



**Status** Feasibility and concept

**Lead Agency** Melbourne Water

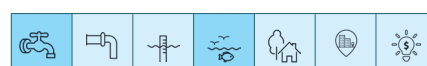
**Implementation Partners** Merri-bek City Council, Greater Metropolitan Cemeteries Trust



**Status** Feasibility and concept

**Lead Agency** Yarra City Council

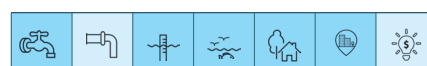
**Implementation Partners** Melbourne Water, Greater Western Water



**Status** Detailed design

**Lead Agency** City of Stonnington

**Implementation Partners** Melbourne Water



**Status** Feasibility and concept

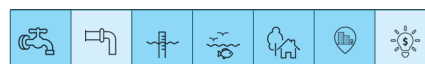
**Lead Agency** Yarra City Council

**Implementation Partners** Melbourne Water, Greater Western Water

### Structural Action 21

#### Barkly Gardens stormwater harvesting

Barkly Gardens is a large park in the heart of bustling Richmond. Harvested stormwater will be treated, stored and used to irrigate Barkly Gardens, reducing reliance on drinking water sources, providing urban greening benefits and reducing nuisance flooding.



**Status** Idea development

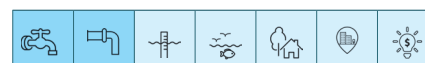
**Lead Agency** Yarra City Council

**Implementation Partners** Melbourne Water, Greater Western Water

### Structural Action 22

#### Kalkallo stormwater pilot

The Kalkallo stormwater harvesting scheme in Melbourne's north aims to treat stormwater to the highest possible standard for reuse. Supported by Australian Government funding, it provides the opportunity for partners to develop a controlled proof-of-concept case study for stormwater treatment. This could help inform new and more-specific regulations to expand water sources and help secure supplies for the future.



**Status** Feasibility and concept

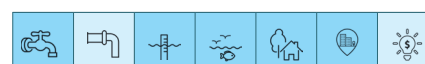
**Lead Agency** Yarra Valley Water

**Implementation Partners** Melbourne Water

### Structural Action 23

#### Warrawee Park stormwater harvesting

Warrawee Park (passive public open space) and D W Nichol Reserve (active public open space) are adjacent to each other in Oakleigh. Both are high-visibility public open spaces. A design has been completed for a stormwater harvesting system and an opportunity to seek funding for construction is currently being awaited. Significant drainage upgrade works along Atherton Road, completed in recent years, included a connection point for the future stormwater harvesting system.



**Status** Detailed design

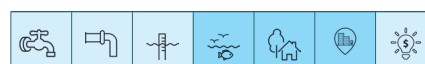
**Lead Agency** Monash City Council

**Implementation Partners** Melbourne Water

### Structural Action 24

#### Gardiners Creek naturalisation – Highbury to Warrigal

Historically, Gardiners Creek has been highly modified and concrete-lined. Sections have been progressively naturalised and the reach adjacent to Burwood Station will be naturalised as part of the Suburban Rail Loop Project. There is an opportunity to restore the creek corridor between Highbury Road and Warrigal Road to enhance biodiversity and habitat for native species, and improve community experience, use and recreation in the area.



**Status** Idea development

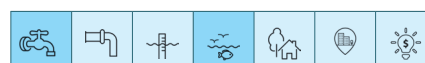
**Lead Agency** Monash City Council

**Implementation Partners** To be agreed

### Structural Action 25

#### Darling Park stormwater harvesting

Darling Park is located in Malvern East adjoining Gardener's Creek, and comprises multiple sportsgrounds, playground, and passive recreational spaces. This action will augment the existing stormwater harvesting system at Darling Park, by extending the pipeline to irrigate Stanley Grose Oval via the irrigation ring main. An additional control system and a new UV disinfection system will be required to meet irrigation practice. It is estimated that 6.6 megalitres of drinking water can be saved for this site.



**Status** Detailed design

**Lead Agency** City of Stonnington

**Implementation Partners** Melbourne Water

## Structural Action 26

### Jingella/ Ashwood/ Holmesglen stormwater harvesting

Jingella Reserve, Holmesglen Reserve and Ashwood Reserve are highly valued public open spaces. A feasibility study explores opportunities to divert excess flow away from Gardiners Creek and treat, store and use the water for irrigation of ovals and gardens across the three reserves. Recent road and drainage upgrade works included a future diversion point from the drainage system to enable a harvesting scheme to be connected. A harvesting scheme will reduce reliance on drinking water sources and improve the quality of water that flows into Gardiners Creek.

## Structural Action 27

### Peter Hopper Lake upgrade

Peter Hopper Lake, located within Redleap Recreation Reserve in Mill Park, has experienced water-quality issues in recent years. This highly valued community asset is undergoing substantial work to remove the mud and debris that has collected in the bottom of the lake over many years. To improve water quality into the future, a new litter trap will be installed to remove rubbish, and a sediment pond and raingarden will be constructed at the lake inlet to filter the stormwater to ensure good water quality in the lake. This will beautify the lake, improve the recreational uses for the community and enhance the biodiversity at the site.

## Structural Action 28

### Macleay Park raingarden and stormwater harvesting

The Macleay Park raingarden system will treat stormwater from a 149-hectare residential catchment in Balwyn North. It includes a gross pollutant trap, a 500- square-metre raingarden and a treatment facility that will remove nutrients from urban stormwater entering local waterways, the Yarra River and Port Phillip Bay. A harvesting scheme will supply about 12 megalitres of water per year to irrigate the ovals and sportsgrounds. This action will reduce reliance on drinking water sources and support liveable communities.

## Structural Action 29

### T H King Oval stormwater harvesting

T H King Oval is located beside Gardiners Creek in the Glen Iris Wetlands. There is an opportunity to harvest 4 megalitres of water per year from the wetlands, store it in above-ground tanks, treat it with a UV disinfection system and use it to irrigate TH King Oval. This water would replace lower-quality water currently extracted from Gardiners Creek for this purpose.

## Structural Action 30

### De Chene Reserve stormwater harvesting

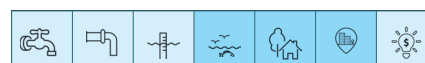
De Chene Reserve is in Coburg, next to Merri Creek. Raingardens will treat stormwater from a 120-hectare residential catchment and harvest the water for irrigating De Chene Reserve. The raingardens and harvesting system will reduce reliance on drinking water sources, improve the quality of water that flows into Merri Creek, and create a new landscaping feature for the local community to enjoy.



**Status** Feasibility and concept

**Lead Agency** Monash City Council

**Implementation Partners** To be agreed



**Status** Construction

**Lead Agency** Whittlesea City Council

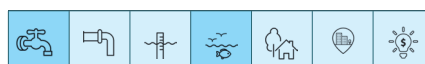
**Implementation Partners** To be agreed



**Status** Detailed design

**Lead Agency** City of Boroondara

**Implementation Partners** Melbourne Water



**Status** Detailed design

**Lead Agency** City of Stonnington

**Implementation Partners** Melbourne Water



**Status** Feasibility and concept

**Lead Agency** Merri-bek City Council

**Implementation Partners** Melbourne Water

### Structural Action 31

#### Sumner Park raingarden and stormwater harvesting

Sumner Park is in Brunswick East, close to Merri Creek. This action proposes to harvest stormwater from an existing Melbourne Water drain, treat the water using a vegetated system, store it in a tank, and use the water to irrigate Sumner Park. This will improve the quality of the water that flows into Merri Creek, reduce reliance on drinking water sources and provide urban greening benefits.



**Status** Feasibility and concept

**Lead Agency** Merri-bek City Council

**Implementation Partners** Melbourne Water

### Structural Action 32

#### Jackson Reserve wetland and stormwater harvesting

Jackson Reserve is in Coburg North, close to Edgars Creek. This action proposes to harvest stormwater from an existing Melbourne Water drain, treat the water using a vegetated system, store it in a tank, and use the water to irrigate sportsgrounds at Jackson Reserve. This will improve the quality of water that flows into Edgars Creek, reduce reliance on drinking water sources and improve community facilities at the site.



**Status** Feasibility and concept

**Lead Agency** Merri-bek City Council

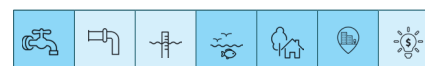
**Implementation Partners** Melbourne Water

### Structural Action 33

#### Reddish Reserve stormwater harvesting

Reddish Reserve is located in Hadfield, close to Fawcner Memorial Park, and drains into Merlynston Creek. The reserve includes sportsgrounds, a play space and a number of mature canopy trees, and contributes to the important network of open spaces providing cooling and habitat in the north of Merri-bek.

This project proposes a stormwater harvesting and detention system to be located in the reserve. The harvested water would provide an alternative water source for irrigation of the reserve, with the potential to contribute to flood mitigation in identified flood-prone residential areas downstream.



**Status** Feasibility and concept

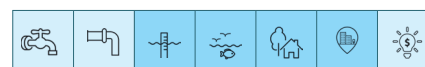
**Lead Agency** Merri-bek City Council

**Implementation Partners** Melbourne Water

### Structural Action 34

#### Valley conservation reserve water and sediment management

Valley Conservation Reserve is a 15.7-hectare bushland reserve in Mount Waverley. The reserve provides vital habitat, including 318 indigenous plant species, and is of regional zoological significance. The reserve is suffering from significant erosion upstream and sediment deposition is impacting waterbodies and wetlands. Multiple stages of works are proposed to stabilise key areas and reduce sediment loads moving downstream. A feasibility assessment aims to identify key target areas and solutions that can be seamlessly integrated into the reserve to preserve the unique attributes of this highly valued community parklands.



**Status** Feasibility and concept

**Lead Agency** Monash City Council

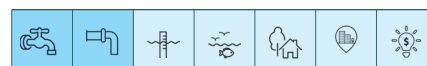
**Implementation Partners** To be agreed



### Structural Action 35

#### Brushy Creek dual pipe

New recycled water pipelines are planned to supply high-quality recycled water through Croydon, Chirnside Park and Lilydale, following the upgrade to the Brushy Creek sewage treatment plant in Chirnside Park. Recycled water could be used for clothes washing, toilet flushing, and irrigation of gardens, parks and sporting facilities. This climate-resilient water source will reduce reliance on drinking water and provide sustainable greening and urban cooling benefits to the community.



**Status** Business Case

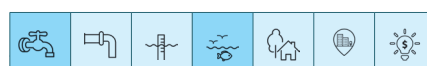
**Lead Agency** Yarra Valley Water

**Implementation Partners** To be agreed

### Structural Action 36

#### Cloverton stormwater harvesting

This action proposes to harvest 11 megalitres of water each year from an existing Melbourne Water wetland to irrigate Cloverton Sporting Reserve. This reserve is in both a mandated recycled water area and stormwater priority area (as defined by the Melbourne Water Healthy Waterways Strategy 2018), creating a tension between the different supply sources. There are important learnings to be gained, which will be applicable to other priority areas, regarding choices in supply options and appropriate supply to a range of end uses.



**Status** Detailed design

**Lead Agency** Hume City Council

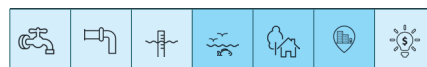
**Implementation Partners** Melbourne Water

### Structural Action 37

#### Bogong Reserve water and sediment management

Bogong Reserve is a spacious recreational reserve in a bushland setting, with a wetlands area, playground, shared pathway and dog off-leash area. Future development of the precinct will generate increased flows and sediment and nutrient loads, which will flow to Bogong Reserve. This reserve will be the key open space for residents of the developing precinct to relax in and enjoy.

Bogong Reserve is a short walk from the Glen Waverley Suburban Rail Loop station and receives stormwater runoff from the area. The existing gross pollutant trap, designed to trap litter and organic matter, is poorly performing. Integrated site planning has identified actions to replace the gross pollutant trap and rehabilitate the existing wetland to improve water quality within the reserve and downstream creek, as well as enhance the amenity, biodiversity and recreational values of the reserve.



**Status** Feasibility and concept

**Lead Agency** Monash City Council

**Implementation Partners** To be agreed

### Structural Action 38

#### Jack Roper stormwater harvesting

Jack Roper Reserve is one of the most popular and well-used passive recreation open spaces in the City of Hume. It is enjoyed by the community for walking and relaxing. The current water supply is sourced from Jack Roper Lake, but this lake has frequent water-quality issues that limit its use as a viable water source. This action proposes to harvest 6.4 megalitres of stormwater per year from the neighbouring residential catchment, treat it in a new raingarden and use it to irrigate the reserve.



**Status** Detailed design

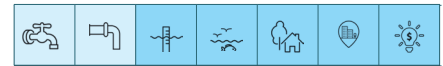
**Lead Agency** Hume City Council

**Implementation Partners** Melbourne Water

### Structural Action 39

#### Greening the Greyfields

This action demonstrates new urban development planning approaches to sustainably revitalise aging suburbs in the City of Maroondah. Recent planning scheme amendments for the redevelopment of two precincts in the municipality require better IWM outcomes in existing residential areas and community public spaces. This action will build on these requirements by supporting development of strategic partnerships and new precincts, creating more permeable urban landscapes, reducing flood risk, enhancing urban waterways and stimulating innovative local economies.

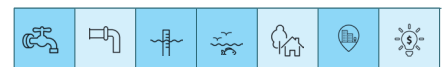


<b>Status</b>	Benefits realisation
<b>Lead Agency</b>	Maroondah City Council
<b>Implementation Partners</b>	DEECA, Victorian Planning Authority, Swinburne University

### Structural Action 40

#### Redmond Court wetland reset in Banyule

The Redmond Court Wetland was previously a lake, supplying irrigation water to sportsgrounds at Parade College. When the land was sold to developers for housing, the lake was transformed into a retarding basin and wetland to slow stormwater runoff and improve the quality of water draining from the subdivision. This action seeks to restore the wetland and improve its performance.

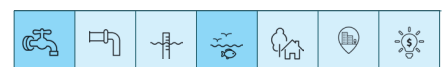


<b>Status</b>	Construction
<b>Lead Agency</b>	Banyule City Council
<b>Implementation Partners</b>	Melbourne Water

### Structural Action 41

#### Investigate stormwater harvesting opportunities within Whitehorse

Whitehorse City Council endorsed its IWM strategy in 2022. One of the outcomes is all water is valued as a resource. Both council and the community recognise that water is not an endless resource, so are finding practical ways to reduce dependence on drinking water and make good use of stormwater, rainwater and wastewater, wherever possible. This action seeks to undertake a high-level feasibility assessment of stormwater harvesting and large-scale WSUD to provide water security for council facilities and open space, improve the health of local waterways and enable increased greening and cooling outcomes.

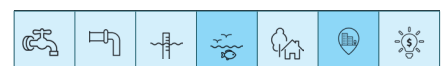


<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	Whitehorse City Council
<b>Implementation Partners</b>	To be agreed

### Structural Action 42

#### Audit of existing WSUD assets

The Whitehorse Integrated Water Management Strategy 2022–2042 commits to an audit of existing WSUD and vegetated assets to assess functionality, recommend maintenance requirements and rectification works, and determine renewal costs to inform future maintenance budgets. The audit seeks to verify treatment performance of existing assets and finalise their contribution towards strategy targets. The findings will improve the planning, design, management and construction of future assets to support better water quality leaving the catchments.



<b>Status</b>	Feasibility and concept
<b>Lead Agency</b>	Whitehorse City Council
<b>Implementation Partners</b>	To be agreed

### Systemic Enabling Action 1

Secure funding and resourcing to enable Traditional Owners to make decisions and determine IWM priorities on their Country.

Commitment to working in partnership with Traditional Owners is a key part of the *IWM Framework for Victoria* (2017). The IWM Forum partners will secure funding and resourcing to increase Traditional Owner self-determination and decision making in water management on their Country. This action is related to the *Central and Gippsland Region Sustainable Water Strategy* (CGRSWS) and *Water is Life* strategies.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA, water corporations and local governments
<b>Implementation Partners</b>	BLCAC*, WWCHAC**, WTOAC***

### Systemic Enabling Action 2

Build capacity across IWM Forum partners to plan and deliver IWM

Improve capacity of practitioners and managers to ensure IWM-related skills and knowledge are influenced by current evidence, policies and science, and actively maintained within IWM forum partner organisations, to enable effective identification and delivery of IWM opportunities.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA, water corporations and local governments
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 3

Develop an investment framework for IWM

Develop a framework to improve how investments are made in IWM opportunities to best realise the multiple community and environmental benefits. This is CGRSWS Action 3-3: Maturing the IWM investment framework.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 4

Embed IWM in land-use planning and urban development

Identify and implement guidance and requirements for supporting IWM in land-use planning and urban development. This action is related to CGRSWS Action 3-9: Strengthen IWM in land-use and infrastructure planning.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA, Department of Transport and Planning
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 5

Clarify roles and responsibilities for delivering IWM outcomes

Clarify roles and responsibilities of IWM forum partners and land-use planning and urban development sectors for delivering IWM outcomes articulated in the Strategic Direction Statements.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	All IWM forum partners

Note:

\*Bunurong Land Council Aboriginal Corporation.

\*\* Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation.

\*\*\* Wadawurrung Traditional Owners Aboriginal Corporation.

### Systemic Enabling Action 6

Develop guidance for stormwater harvesting and infiltration

Develop guidance for cost-effective, practical solutions/approaches at different spatial scales to achieve the flow volume reductions articulated in the Urban Stormwater Management Guidance (EPA Publication 1739.1).

<b>Status</b>	In progress
<b>Lead Agency</b>	Melbourne Water, EPA, local governments
<b>Implementation Partners</b>	All IWM forum partners, development sector

### Systemic Enabling Action 7

Develop policy and regulatory support for increased use of recycled water and treated stormwater

Develop policy and regulatory enablers to improve uptake of recycled water and treated stormwater to supply a broader range of beneficial uses. This action links strongly to the following CGRSWS actions:

- Action 3-8: Use of recycled water and stormwater for greener, open spaces.
- Action 3-10: Develop template guidance for recycled water use to streamline approvals.
- Action 3-11: Identify priority projects to contribute to state of knowledge of emerging contaminants.
- Action 3-12: Improving stormwater regulations to support increased capture and use.
- Action 3-15: Develop a stormwater offsets framework.
- Action 3-13: Implement Melbourne Urban Stormwater Institutional Arrangements (MUSIA).
- Action 3-16: Embedding stormwater flow requirements.
- Action 3-17: Building community confidence in recycled water and stormwater.
- Action 3-18: Clearer guidance on recycled water accounting and reporting

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	All IWM Forum Partners and development sector

### Systemic Enabling Action 8

Further develop the IWM resource hub to share data and information

Further develop the IWM resource hub to share information to enhance knowledge and build capacity.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 9

Develop a WSUD asset maintenance framework

Develop a water sensitive urban design (WSUD) asset maintenance framework by considering current organisational approaches to WSUD asset maintenance and best practice guidelines.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA*
<b>Implementation Partners</b>	Melbourne Water, local governments

Note: \* indicates that DEECA will collaboratively seek a lead organisation and partners to deliver this action.



### Systemic Enabling Action 10

Develop a framework for installation and maintenance of rainwater tanks

Develop a framework for installation and maintenance of rainwater tanks to ensure rainwater tanks are installed and operated as intended.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA, water corporations
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 11

Develop sub-catchment scale targets for total suspended solids and total nitrogen prevented from discharging to waterways

Develop sub-catchment scale targets for total suspended solids and total nitrogen prevented from discharging to all waterway reaches. The Healthy Waterways Strategy 2018 has sub-catchment targets for priority catchment areas and this work is complementary to the Healthy Waterways Strategy 2018 targets and the total suspended solids and total nitrogen targets for Port Phillip Bay and Western Port Bay.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA*
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 12

Strengthen policy and regulatory support for urban greening

Strengthen policy and regulatory support for urban greening, including planning controls for private and public open space to deliver urban greening that is supported by IWM. This could include fit-for-purpose water use and could maintain or increase onsite detention, permeability and canopy cover.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA*
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 13

Improve community knowledge and involvement in urban water management

Improve community knowledge and involvement in the urban water cycle, including IWM solutions. This action is related to CGRSWS Action 9-5: Building community knowledge and involvement in water management.

<b>Status</b>	In progress
<b>Lead Agency</b>	Water corporations, DEECA
<b>Implementation Partners</b>	All IWM forum partners

### Systemic Enabling Action 14

Develop and deliver a water efficiency plan for Greater Melbourne

Develop and deliver a water efficiency plan for Greater Melbourne to ensure that Melbourne continues to focus on water conservation and efficiency to support the deferral of major system augmentations in the medium and longer term. This is GMUWSS: Water for Life Action 4.1.

<b>Status</b>	In progress
<b>Lead Agency</b>	Water corporations
<b>Implementation Partners</b>	All IWM forum partners

Note: \* indicates that DEECA will collaboratively seek a lead organisation and partners to deliver this action.

### Systemic Enabling Action 15

Investigate opportunities to use recycled water and stormwater to improve environmental flows

Investigate enabling the use of treated wastewater and stormwater to improve environmental flows. This is CGRSWS Action 8-22: Develop guidelines for using recycled water for the environment, and CGRSWS Action 8-23: Stormwater for the environment.

<b>Status</b>	In progress
<b>Lead Agency</b>	DEECA, water corporations
<b>Implementation Partners</b>	All IWM forum partners

### Place-Based Enabling Action 1

Undertake strategic assessments of catchment scale spatial IWM opportunities – Yarra catchment

Assessments of priority actions against the IWM targets identified in the Yarra Catchment Scale IWM Plan: Targets Driving Outcomes show that further efforts are required in some areas to avoid falling short of delivering strategic outcomes for the Yarra catchment. A strategic assessment of catchment-wide IWM opportunities that can address performance gaps will ensure that ongoing investment is directed to where the greatest gains can be delivered.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	DEECA*

### Place-Based Enabling Action 2

Greater Western Water stormwater harvesting fund

Greater Western Water supports alternative water management schemes through the provision of a stormwater harvesting fund to co-deliver new place-based actions across the Greater Western Water service area (applicable to Werribee, Maribyrnong, Yarra and Coliban catchments). The proposed fund aims to support open-space managers to progress stormwater harvesting schemes to irrigate public parks, gardens, sportsgrounds and golf courses, and deliver a greener, cooler, more liveable west.

<b>Status</b>	In progress
<b>Lead Agency</b>	Greater Western Water

### Place-Based Enabling Action 3

Assess open space irrigation for urban cooling opportunities

As average temperatures continue to rise, and the number of extreme heat days each year increases, keeping cool is more important than ever. With growing population comes increasing demand for potable water, greater areas of urbanised land and the need for high quality community assets such as green open space.

Yarra Valley Water is exploring opportunities across the Yarra catchment to improve urban greening and cooling outcomes to enhance urban amenity and quality, improve landscape connectivity and build resilience to climate change. Yarra Valley Water has undertaken an opportunity assessment across its service area and will further consider how using recycled water, rainwater and stormwater can support greening and cooling initiatives through open-space irrigation.

<b>Status</b>	In progress
<b>Lead Agency</b>	Yarra Valley Water

#### Place-Based Enabling Action 4

##### Explore large-scale stormwater harvesting opportunities

Large-scale alternative water supply schemes offer the opportunity to improve water security and protect our environment, as well as enhance liveability and support communities to thrive. In collaboration with other partners, Melbourne Water explores stormwater harvesting opportunities to support large-scale stormwater harvesting networks. These include a range of potential sources at the sub-catchment scale and networks of multiple sources to supply a range of demand opportunities, including peri-urban agriculture, irrigation of ovals, sportsgrounds and golf courses, as well as cultural and environmental flows.

<b>Status</b>	In progress
<b>Lead Agency</b>	Melbourne Water

#### Place-Based Enabling Action 5

##### Support implementation of Flood Management Strategy for Port Phillip and Western Port – Action Plan 2021–2026

Large-scale alternative water supply schemes offer the opportunity to improve water security and protect our environment, as well as enhance liveability and support communities to thrive. In collaboration with other partners, Melbourne Water explores stormwater harvesting opportunities to support large-scale stormwater harvesting networks. These include a range of potential sources at the sub-catchment scale and networks of multiple sources to supply a range of demand opportunities, including peri-urban agriculture, irrigation of ovals, sportsgrounds and golf courses, as well as cultural and environmental flows.

<b>Status</b>	In progress
<b>Lead Agency</b>	Melbourne Water

#### Place-Based Enabling Action 6

##### Implementation of the Fishermans Bend Water Sensitive City Strategy

Fishermans Bend is Australia's largest urban renewal precinct, covering approximately 480 hectares in the heart of Melbourne. An established working group is in place, with representatives from partner organisations, to support the implementation of the Fishermans Bend Water Sensitive City Strategy. This action will deliver studies and projects, including the development of guidelines to support policy development and implementation. It also supports individual organisations to deliver on the objectives of the strategy in a consistent way.

<b>Status</b>	In progress
<b>Lead Agency</b>	Fishermans Bend Sustainability Working Group

#### Place-Based Enabling Action 7

##### Governance for smart tanks in Fishermans Bend

Fishermans Bend is Australia's largest urban renewal precinct, covering approximately 480 hectares in the heart of Melbourne. New developments in Fishermans Bend are required to install smart rainwater tanks to reduce potable water use and assist with managing flooding. This action will determine a suitable governance model to ensure the long-term success of smart tanks within Fishermans Bend. The effective implementation of smart tanks is critical for reducing flood risk and enabling the necessary design standards and technology protocols to be implemented.

<b>Status</b>	In progress
<b>Lead Agency</b>	Fishermans Bend Sustainability Working Group

Note: \* indicates that DEECA will collaboratively seek a lead organisation and partners to deliver this action.

### Place-Based Enabling Action 8

#### Mapping IWM opportunities in streetscapes in the Melbourne Local Government Area

City of Melbourne has developed a systematic approach to understand the suitability of WSUD opportunities within streetscapes across the municipality. This action seeks to use spatial data to enable planners and designers to undertake high-level feasibility assessments for IWM. An IWM priority map will also be developed that communicates the priority, feasibility and typologies that may be applied to different street segments.

<b>Status</b>	In progress
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<b>Lead Agency</b>	City of Melbourne
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### Place-Based Enabling Action 9

#### Guidelines for proprietary products in the Melbourne Local Government Area

City of Melbourne has been receiving an increasing number of planning permit applications for WSUD incorporating proprietary products to deliver stormwater treatment. Council undertook a risk assessment to understand the risks of accepting proprietary products when compared to nature-based approaches to WSUD. This action seeks to develop policy to clarify when and how proprietary products may be approved as part of stormwater and IWM regulatory requirements within the Melbourne Planning Scheme.

<b>Status</b>	In progress
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<b>Lead Agency</b>	City of Melbourne
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### Place-Based Enabling Action 10

#### Permeable pavement design and construction guidance

City of Melbourne has implemented permeable paving across multiple sites and undertaken research to understand its performance and maintenance requirements over time. This action seeks to consolidate these findings into guidelines to support council with the future design, installation and maintenance of permeable paving, including typical standard drawings.

<b>Status</b>	Ideas stage
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<b>Lead Agency</b>	City of Melbourne
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### Place-Based Enabling Action 11

#### Gardiners Creek (KooyongKoot) Masterplan implementation

The implementation of the Gardiners Creek/Kooyongkoot Masterplan will transform and enhance the creek corridor through revegetation, WSUD treatment and biodiversity improvements. Together with shared path upgrades and opportunities for passive and active recreation, these improvements will promote a healthier community and environment.

<b>Status</b>	In progress
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<b>Lead Agency</b>	City of Stonnington and City of Boroondara
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### Place-Based Enabling Action 12

#### Whittlesea City Council – WSUD asset renewal program

Through a program of renewal works, this action will improve the performance of WSUD assets that fail to provide the stormwater quality treatment functions they were designed to. An audit of 10% of the City of Whittlesea's WSUD assets, including sedimentation ponds, wetlands, raingardens and swale drains, has been completed. The audit provided improvement recommendations, cost estimates for maintenance and renewal, and a prioritisation list.

<b>Status</b>	In progress
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<b>Lead Agency</b>	Whittlesea City Council
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### Place-Based Enabling Action 13

#### Whittlesea City Council – stormwater harvesting performance audit

This action includes an audit and review of the performance of stormwater harvesting assets within the City of Whittlesea. Recommendations will be made to improve the performance of each asset to ensure potable water substitution and water quality are optimised.

<b>Status</b>	In progress
<b>Lead Agency</b>	Whittlesea City Council

### Place-Based Enabling Action 14

#### Mullum Mullum Creek collaborative management plan

This action will develop a collaborative management plan for Mullum Mullum Creek. The plan will form the basis to transform Mullum Mullum Creek into an iconic waterway that provides high social, cultural and environmental benefits. Development of the plan will require engagement with Yarra Valley Water, Parks Victoria, DEECA, the Wurundjeri WWCHAC and other parties, in order to cultivate a shared vision, strategic directions and objectives for the creek.

<b>Status</b>	In progress
<b>Lead Agency</b>	Manningham City Council, Maroondah City Council

### Place-Based Enabling Action 15

#### Develop plan for the management of erosion risks along the Yarra River, Warrandyte

This action will produce a management plan to identify remedial works and mitigation opportunities along the Yarra River in Warrandyte. It will conduct investigations into riverbank erosion, and the management of access and measures to preserve native flora, fauna and habitat along the Yarra River corridor. The action will include stakeholder engagement with the Wurundjeri WWCHAC and other stakeholders as required.

<b>Status</b>	In progress
<b>Lead Agency</b>	Manningham City Council, Melbourne Water

### Place-Based Enabling Action 16

#### Manningham IWM Masterplan

This action will produce an IWM masterplan for the City of Manningham, to identify and prioritise stormwater treatment projects and harvesting schemes across the municipality. Thirty opportunities will be assessed to quantify the benefits delivered for potable water savings, stormwater-runoff and pollutant-load reductions, and area of enhanced biodiversity. A shortlist of opportunities will be prepared based on the benefit:cost ratio. The most cost-effective opportunities will be taken through to concept design.

<b>Status</b>	In progress
<b>Lead Agency</b>	Manningham City Council

### Place-Based Enabling Action 17

#### Conduct community education on alternative water

This action will roll out ongoing community education and engagement programs on alternative water use for various purposes.

<b>Status</b>	Ideas stage
<b>Lead Agency</b>	Water corporations, local governments, DEECA

Note: \* indicates that DEECA will collaboratively seek a lead organisation and partners to deliver this action.

**Place-Based Enabling Action 18**

Enabling the realisation of IWM opportunities in the proposed Cloverton Metropolitan Activity Centre

This action seeks to continue collaboration with Yarra Valley Water, Melbourne Water and Hume, Whittlesea and Mitchell councils to identify and implement IWM opportunities in the proposed Cloverton Metropolitan Activity Centre. This Activity centre intersects at the boundaries of Hume, Whittlesea and Mitchell councils, and will be the primary employment and service centre for the growing suburbs of Mickleham, Kalkallo, Donnybrook, Beveridge and Wallan – estimated at 380,000 residents and 50,000 jobs at full build out. One of the adjacent on-the-ground IWM opportunities currently under investigation is Structural Action 32: Cloverton stormwater harvesting

Status	In progress
Lead Agency	Hume and Whittlesea City Councils



# Useful resources

1. [Central and Gippsland Region Sustainable Water Strategy 2022](#)
2. [Flood Management Strategy for Port Phillip and Western Port](#)
3. [Greater Melbourne Urban Water & System Strategy](#)
4. [Healthy Waterways Strategy](#)
5. [Integrated Water Management Framework for Victoria](#)
6. [Living Melbourne: Our metropolitan urban forest strategy](#)
7. [Melbourne Sewerage Strategy](#)
8. [Municipal Association of Victoria Strategy 2021-2025](#)
9. [Open Spaces for Everyone Strategy](#)
10. [Plan Melbourne 2017-2050](#)
11. [Protecting Victoria's Environment – Biodiversity 2037 \(Biodiversity 2037\)](#)
12. [Victoria's Climate Change Strategy](#)
13. [Victoria's Housing Statement: The Decade Ahead 2024-2034](#)
14. [Water is life: Traditional Owner Access to Water Roadmap](#)
15. [Yarra Catchment Strategic Direction Statement](#)
16. [Yarra Catchment IWM Plan](#)
17. [Yarra Strategic Plan \(Burndap Birrarung burndap umarkoo\)](#)

# Glossary of terms

## **Alternative water sources**

Alternative water sources refer to any supplies other than Victoria's potable water network or 'grid'. Alternative water sources include rainwater, greywater, recycled water, groundwater, and stormwater. The use of alternative water sources needs to be safe, meet regulatory and environmental standards, and reflect community expectations.

## **Assets**

Assets are resources that provide benefit. They include: infrastructure such as treatment plants, pipes and pumps; water assets such as dams, bores and wetlands; and community assets such as sporting facilities, public gardens and street trees. Natural assets (also known as natural capital) are assets of the natural environment, for example waterways and vegetation.

## **Biodiversity**

The number and variety of plants, animals and other living beings, including microorganisms, across our land, rivers and oceans. It includes the diversity of their genetic information, the habitats and ecosystems in which they live, and their connections with other life forms.

## **Blue-green infrastructure**

Green infrastructure refers to key vegetation features such as street trees, parklands, grassed sports fields and vegetated walls. Blue infrastructure refers to waterways, wetlands, recreational lakes, stormwater retarding basins and other water body features. Blue-green infrastructure brings these assets together through integrated approaches to deliver community benefits.

## **Catchment**

An area where water falling as rain is collected by the landscape, eventually flowing to a body of water such as a creek, river, dam, lake or ocean, or into a groundwater system.

## **Climate change**

A long-term change in the earth's temperature and weather patterns, generally attributed directly or indirectly to human activities such as fossil fuel combustion and vegetation clearing and burning.

## **Community**

Includes individuals, public and private landholders, community groups and business owners.

## **Department of Energy, Environment and Climate Action (DEECA)**

A department of the Victorian Government that supports Victoria's natural and built environment to ensure economic growth and liveable, sustainable and inclusive communities. The department assists several ministers, develops and implements state policies and programs, and oversees the administration of organisations, including catchment management authorities.

## **Ecosystem**

A dynamic complex of plant, animal, fungal and microorganism communities and the associated non-living environment, interacting as an ecological unit.

## **Environment Protection Authority (EPA Victoria)**

Victoria's environmental regulator is an independent statutory authority. The authority supports Victorians to prevent and reduce the harmful effects of pollution and waste on communities.

## **Environmental water**

Water to support environmental values and ecological processes.

## **Flooding (stormwater)**

Inundation by local runoff. Stormwater flooding can be caused by local runoff exceeding the capacity of an urban stormwater drainage system or by the backwater effects of mainstream flooding causing the urban stormwater drainage system to overflow.



**Floodplain**

Low-lying land adjacent to a river or stream with unique ecosystems dependent on inundation from flood events.

**Flow**

Movement of water – the rate of water discharged from a source, given in volume with respect to time.

**Gigalitre (GL)**

One billion (1,000,000,000) litres. One gigalitre is the equivalent of approximately 400 Olympic-size swimming pools.

**Greater Metropolitan Melbourne Region**

The Port Phillip and Western Port Bay catchment area, including the Werribee, Maribyrnong, Yarra, Dandenong and Western Port catchments.

**Groundwater**

All subsurface water, generally occupying the pores and crevices of rock and soil.

**Growth areas**

Locations on the fringe of metropolitan Melbourne designated in planning schemes for large-scale transformation, over many years, from rural to urban use.

**Impervious area**

A surface or area within a catchment that significantly restricts the infiltration of water. Impervious surfaces can include concrete, road surfaces, roofs and saturated ground such as a lake or pond.

**Implementation partner**

An implementation partner is an organisation that supports the delivery of actions and will commit agreed resources with the lead organisation to ensure timely progress of the action.

**Infrastructure**

Basic facilities and networks needed for the functioning of a local community or broader society.

**Integrated water management (IWM)**

A holistic and collaborative approach to managing water that brings together all elements of the water cycle, including wastewater management, water supply, stormwater management and water treatment, considering environmental, cultural, economic and social benefits.

**Integrated Water Management Forum**

A meeting of urban water management organisations to identify, prioritise and commit to the investigation of integrated water management opportunities.

**Irrigation district**

An area declared under the *Water Act 1989* that is supplied with water by channels and pipelines used mainly for irrigation purposes.

**Lead organisation**

A lead organisation will drive the action forward and liaise with implementation partners, as appropriate, throughout all stage of action delivery. They will commit the necessary resources to progress activities to deliver the action. They will communicate with partners to clearly define their roles, responsibilities, and resource needs.

**Liveability**

A measure of a city's residents' quality of life, used to benchmark cities around the world. It includes socioeconomic, environmental, transport and recreational measures.

**Megalitre (ML)**

One million (1,000,000) litres.

**Open space**

Includes land reserved for natural landscape, parklands, recreation and active sports.

**Potable water**

Water of suitable quality for drinking.

**Rainwater**

Water that has fallen as rain or has been collected from rainfall.

**Recycled water**

Water derived from sewerage systems or industry processes that is treated to a standard appropriate for its intended use.

**Reservoir**

Natural or artificial dam or lake used for the storage and regulation of water.

### **Resilience**

The capacity of individuals, communities, institutions, businesses, systems and infrastructure to survive, adapt and grow, no matter what chronic stresses or shocks they encounter.

### **Runoff**

The portion of rainfall that ends up as streamflow, also known as rainfall excess.

### **Stormwater**

Runoff from urban areas. The net increase in runoff and decrease in groundwater recharge resulting from the introduction of impervious surfaces such as roofs and roads within urban development.

### **Sub-catchment**

A minor waterway catchment within one of the major waterway catchments in the region. There are 69 sub-catchments defined by the *Healthy Waterways Strategy 2018* (Melbourne Water) in the Port Phillip Bay and Western Port Region. Sub-catchments are used as the spatial unit for the plan analysis.

### **Traditional Owners**

People who, through membership of a descent group or clan, are responsible for caring for Country. Aboriginal people with knowledge about traditions, observances, customs or beliefs associated with a particular area. A Traditional Owner is authorised to speak for Country and its heritage.

### **Urban greening**

Growing plants wherever possible in cities to contribute to urban vegetation coverage and provide a connection to nature.

### **Urban water cycle**

The cycle of water through urban environments. Distinguished from the natural urban water cycle by the transfer of water through built infrastructure and the high runoff rates generated by impervious surfaces.

### **Wastewater**

Water that has had its quality affected by human influence, deriving from industrial, domestic, agricultural or commercial activities.

### **Water corporations**

Victorian Government organisations charged with supplying water to urban and rural water users. They administer the diversion of water from waterways and the extraction of groundwater. Formerly known as water authorities.

### **Water infrastructure**

Facilities, services and installations needed for the functioning of a water system.

### **Water sector**

Organisations involved in water management, including water corporations, local government and catchment management authorities.

### **Water Sensitive Urban Design (WSUD)**

The planning, design and construction of urban development that aims to minimise the impact on the surrounding environment and waterways by treating and reducing stormwater flows, increasing soil moisture and urban greening, and providing an alternative water source.

### **Waterways**

Rivers and streams, their associated estuaries and floodplains (including floodplain wetlands), and non-riverine wetlands.

### **Waterway health**

Waterway health is an umbrella term for the overall state of key features and processes that underpin functioning waterway ecosystems (such as species and communities, habitat, connectivity, water quality, riparian vegetation, physical form, and ecosystem processes such as nutrient cycling and carbon storage).

### **Wetlands**

Natural, modified or artificial areas subject to permanent or temporary inundation, which hold static or very slow-moving water and develop, or have the potential to develop, biota adapted to inundation and the aquatic environment. Wetlands may be fresh or saline.

For more information visit:

**[www.water.vic.gov.au/liveable/integrated-water-management-program](http://www.water.vic.gov.au/liveable/integrated-water-management-program)**



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