

Our Local Water Ways



NOVEMBER 2022

**KINGSTON'S
INTEGRATED
WATER STRATEGY**



City of
KINGSTON

Acknowledgement of Country

The City of Kingston proudly acknowledges the Bunurong People of the Kulin Nation as the Traditional Owners and Custodians of this land, and we pay our respect to their Elders, past and present and emerging.

Council acknowledges the Bunurong's continuing relationship to the land and waterways and respects that their connection and spiritual identity is maintained through ancient ceremonies, songlines, dance, art and living culture. Council pays tribute to the invaluable contributions of the Bunurong and other Aboriginal and Torres Strait Island elders who have guided and continue to guide the work we do.



Cover image:
View of Mordialloc Creek towards
the Aspendale coast line.

Figure 1. Mordialloc Creek

Our Plan

Integrated Water recognises that all parts of the water cycle are linked, including water security (for now and the future), stormwater pollution, flooding, groundwater impacts and waterway health.

The following documents explain our approach to integrated water moving forward and replace our previous Integrated Water Cycle Strategy (City of Kingston, 2012):

1.
“Our Local Water Ways” – Kingston’s Integrated Water Strategy (this document):
 A community-focused summary of Kingston’s future direction.

Kingston’s Integrated Water Implementation Plan – Towards 2030 (attachment 1):
 A description of our actions with 2030 and 2050 aspirational targets.

2.
“Our Local Water Ways” – Kingston’s Integrated Water Story, The Full Picture:
 A more detailed discussion about our journey, challenges, and opportunities. This focuses on Kingston’s current and future water projections and summarises our water modelling data. It is aimed at people with an understanding of integrated water, or those who are interested in learning more about Kingston’s strategic approach.

Our Vision and Objectives

Our vision is to become a ‘Water Sensitive City’. This is a place where healthy waterways are valued, and our community is engaged in making wise choices about water. A place where our built and natural environments are in harmony.

The broad objectives of Kingston’s Integrated Water Strategy are:

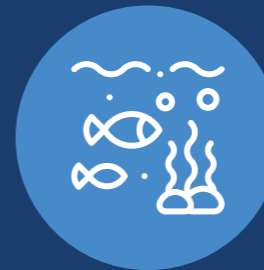
Strategic Objective 1:



Use our Water Wisely

To use water throughout the City of Kingston wisely, including less drinking water (potable water) and more use of alternative water such as rainwater tanks, harvested stormwater and recycled water from Melbourne Water’s treatment plant.

Strategic Objective 2:



Protect our Waterways and Bay from Pollution

To improve the quality of stormwater runoff from local areas flowing into water courses and Port Phillip Bay, with a focus on reducing litter and all forms of pollution.

Strategic Objective 3:



Improve our Flood Management

Improve resilience to floods in the way we prevent, manage and respond to them.

Strategic Objective 4:



Enhance our Education, Engagement and Partnerships

Work with our community and regional partners for the benefit of managing our water resources.

This Strategy includes tips on how our local community can take simple steps to support our objectives.

Our Challenges into the Future

“We need to plan for climate change because the change is happening already and it’s going to keep happening and it’s going to make life a lot more challenging for a lot of people.”

– community member

In January 2020, the City of Kingston declared a Climate and Ecological Emergency. We recognise that business as usual is not good enough, and that actions to reduce emissions must reflect the scale and scope of the challenge.

In July 2021, the City of Kingston endorsed Kingston’s Climate and Ecological Emergency Response Plan (CEERP) to guide action. Our target is to achieve net zero community emissions by 2030.

The City of Kingston has a proud history of being pioneers in Integrated Water Management and has played an important role in stormwater quality and other related initiatives since the late 1990s.

In partnership with the community and key stakeholders, we have implemented innovative projects that respond to the immense pressures that changes to our climate and increased urbanisation place on every part of the water cycle.

We need to continue to improve and innovate to prepare for climate change impacts on the water cycle, our environment and our community into the future, such as:

- Decreases in streamflow due to less annual rainfall.
- Rising sea levels and an increase in extreme rainfall events. This is likely to increase the frequency of flash flooding.
- An increase in hot days and heatwaves that will require more shade and green parklands to help protect the vulnerable members of our community.
- A need for more water to irrigate our parks to keep them green and cool to support our community’s health and liveability.

Kingston is also growing at the rate of around 800 new dwellings being built each year. Our research shows that due to climate change, population growth and urbanisation:

- We are already using water faster than nature can replace it. When combined with a gradual decline in yearly rainfall, there won’t be enough water unless we change the way that we use water.
- There will be an increased output of wastewater and urban stormwater.
- There will be more polluted runoff from residential, commercial and industrial activities, unless we intervene.
- We need sustainable groundwater and surface water management.



The good news is that we have modelled the likely impacts and have identified a plan.

This involves doing more of the type of work Kingston has already undertaken, plus some exciting new projects and some new ways of doing things.

At the local level we need the whole community to take action to support our objectives by:

- ✓ Reducing our reliance on drinking water from mains (potable water)
- ✓ Using alternative types of water like rainwater tanks, harvested stormwater and recycled water
- ✓ Helping to prevent litter and pollution from entering our stormwater pipes via residential streets, shopping strips and commercial/ industrial activities to protect the health of our waterways and Port Phillip Bay.

Figure 2. Refer to City of Kingston’s Climate & Ecological Emergency Response Plan for actions.

Figure 3.
Dandenong Catchment Map



Impacts on a Regional Level

The City of Kingston is located within the bigger Dandenong catchment (pictured).

Stormwater runoff from 40 km away in the Dandenong Ranges flows via Dandenong creek and other waterways before reaching Patterson River and Mordialloc Creek. This means that activities occurring in other municipalities, both good and bad, have an impact on our waterways.

Our Strategy is a coordinated approach that considers both the local and bigger picture, regional challenges and opportunities, and has been prepared in collaboration with state government agencies.

Managing water and drainage systems within the City of Kingston requires the involvement and co-ordination of a significant number of stakeholders. These include Melbourne Water, neighbouring councils, the Environmental Protection Authority, water retailers, emergency services agencies, Commonwealth agencies, businesses and our local Kingston community.

The Dandenong Catchment stakeholders have identified shared aspirations, such as:

- Safe, secure and affordable water supplies in an uncertain future
- Healthy and valued waterways, marine environments and urban landscapes
- Community values and town planning processes that incorporate integrated water objectives
- Existing and future flood risks that are managed to maximise outcomes for the community
- Commitment, collaboration, and capacity built to implement integrated water outcomes.

Figure 4. Patterson River flows from the Dandenong Ranges.



Our Strategic Objectives

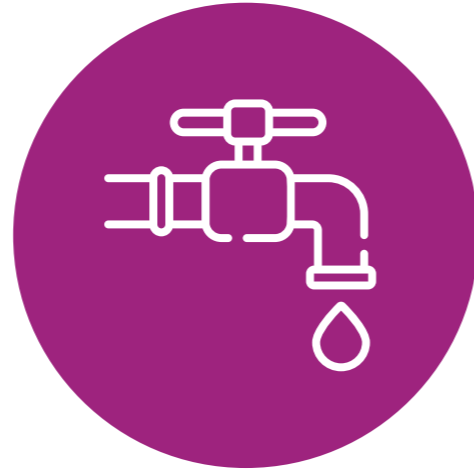
The following pages explain our four strategic objectives, supporting goals, the things we want to do, and how you can help.

Our “Implementation Plan” is attached and provides a more detailed description of the individual actions and targets that will help to achieve our objectives.



Figure 5. Aspendale Beach

Objective 1: Use our Water Wisely



To use water throughout the City of Kingston wisely, including less drinking water (potable water) and more use of alternative water, such as rainwater tanks, harvested stormwater and recycled water from Melbourne Water’s treatment plant.

Our Goals

Local Community	To increase our local community’s knowledge about potable water conservation and other alternatives, and to reduce residential water usage to below 155 litres per person per day.
Local Building Projects	To incorporate effective integrated water outcomes into private buildings, including improved use of rainwater tanks.
Local Council	<ul style="list-style-type: none"> To reduce the consumption of potable water within Kingston Council buildings, aquatic centres and for irrigating sports fields. To increase the volume of harvested stormwater for irrigating Kingston Council parks and sport fields.
Regional Partners	<ul style="list-style-type: none"> To work with South East Water to install recycled water pipeline projects. To work with Southern Rural Water to reduce reliance on bore water by replacing it with alternatives.

To achieve our goals, we will:

- Encourage our community to become comfortable with using water from rainwater tanks for suitable inside uses, like being connected to toilets and washing machines, rather than just outdoor use.
- Use more harvested stormwater. This means continuing to develop Council assets and construction projects to capture stormwater, filter the water, and store the treated water in large tanks for use in irrigating sports fields, parks and street trees, like those pictured in Figure 8.
- Work with South East Water to realise the installation of major pipelines to supply recycled water from Melbourne Water’s Eastern Treatment Plant located in Bangholme, near Patterson Lakes. This network will be used to irrigate sports fields, golf courses and large business operators at a cost.



Figure 6. Family using tank water

Figure 7. Slim rainwater tank

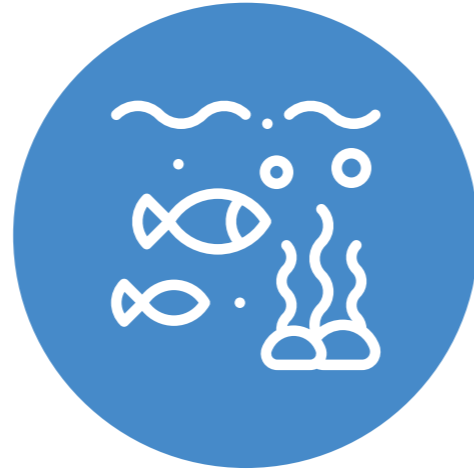
? What action can I take as a community member?

- ✓ Monitor water usage on your water bill and aim for below 155 litres per person per day.
- ✓ Buy water-efficient shower heads, toilets, washing machines and dishwashers.
- ✓ Choose Australian native plants that are drought tolerant and need less water.
- ✓ Ask a plumber if your rainwater tank can be connected to your toilet or laundry.

Did you know that Kingston’s sports fields use smart irrigation technology to save drinking water?



Objective 2: Protect our Waterways and Bay from Pollution



To improve the quality of stormwater runoff from local areas flowing into water courses and Port Phillip Bay, with a focus on reducing litter and all forms of pollution.

Our Goals

Local Community	To increase our local community's knowledge about how stormwater pollution affects waterway health and promote litter reduction programs.
Local Building Projects	To enable private developments to achieve better construction and maintenance outcomes for treating stormwater as part of new building projects.
Local Council	<ul style="list-style-type: none"> To reduce and capture litter from shopping centres and roads that flow into Mordialloc Creek, Patterson River and directly into Port Phillip Bay. To reduce and treat the volume of fine pollutants, such as silt and nitrogen, flowing from local stormwater drains.
Regional Partners	To capture and treat fine pollutants by working with Melbourne Water to build large projects like regional wetlands and treatment systems to protect our rivers, creeks and channels.

To achieve our goals, we will:

- Expand our education programs around reducing litter and install more litter traps.
- Work with our neighbour Councils to reduce the volume of litter that flows into our waters from areas outside of Kingston.
- Build more wetlands and vegetated filter systems to remove natural and chemical pollution.
- Work with Melbourne Water to install a large wetland along Mordialloc Creek near Boundary Road.
- Improve the planning and design of homes, buildings and landscapes so that more water is being reused or infiltrates into the soil. This is called 'Water Sensitive

Urban Design' (WSUD) and can include:

- Installing rainwater tanks that are used for watering, flushing toilets and other uses.
- Smaller roof and paved areas to reduce the amount of water that flows into drains.
- Paved areas that direct water to flow into garden beds.
- Porous driveways, paths and carparks that allow water to infiltrate into the ground.
- Rain gardens within private yards, and on nature strips, to treat stormwater and limit runoff.
- Wetlands or vegetated swale to filter stormwater.

Do you know that the Edithvale-Seafood wetlands originally extended from Mordialloc to Frankston?

It became internationally protected in 2001.

We refer to the following forms of pollutants that enter the stormwater drains and can flow into the Bay:

Litter – like cigarette butts, cans, food wrappers, plastic bags and paper.

Natural pollution – like soil, leaves, garden clippings and animal waste.

Chemical pollution – like fertilisers, detergents, oil and rubber from road traffic.

? What action can I take as a community member?

- ✓ Place leaves into green bins, rather than sweeping onto the roadside gutters that flow into waterways.
- ✓ Help to stop street litter and other pollutants at their source so they don't end up in our waterways, e.g. wash your car on grass or gravel or take it to a carwash that recycles the water.
- ✓ Reduce your use of pesticides, herbicides and fertilisers.
- ✓ Direct rain runoff from your paved areas into garden beds.
- ✓ Create 'raingardens' in your yard to absorb stormwater and limit runoff, and consider installing other Water Sensitive Urban Design benefits (described above) into your home and garden.

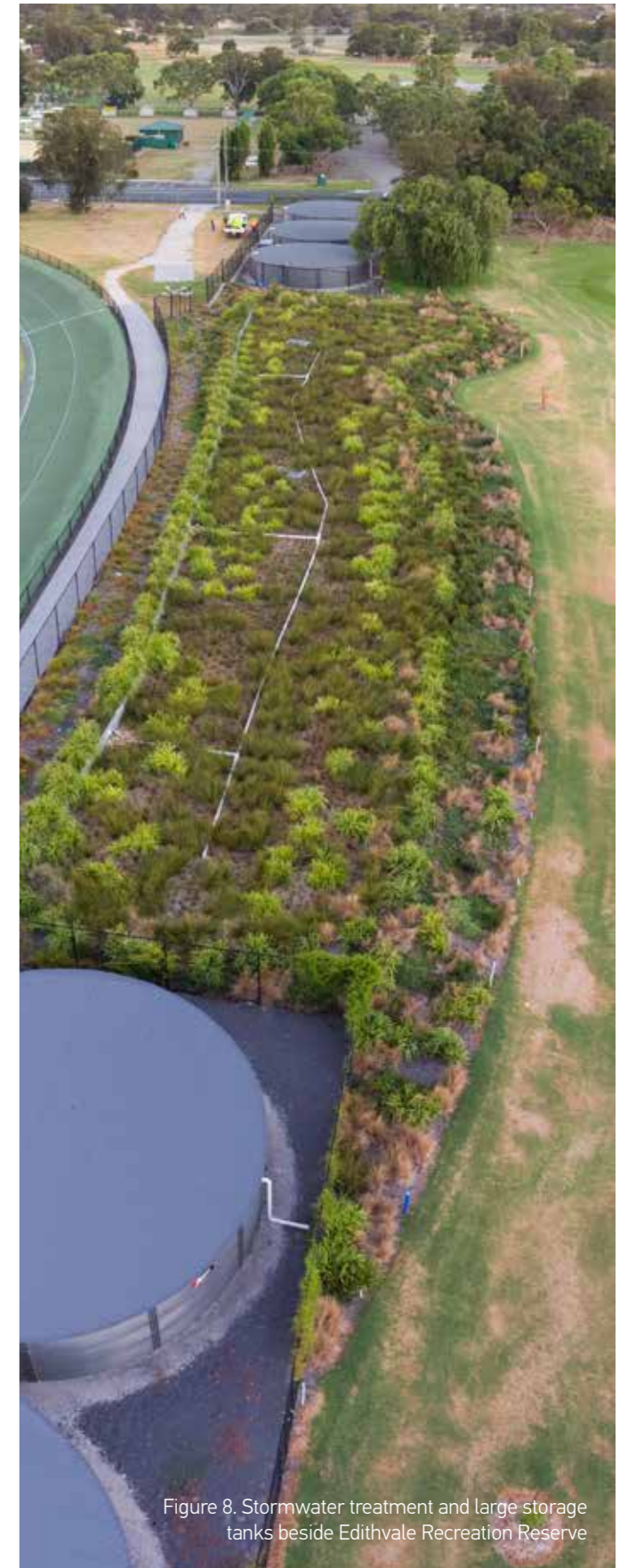
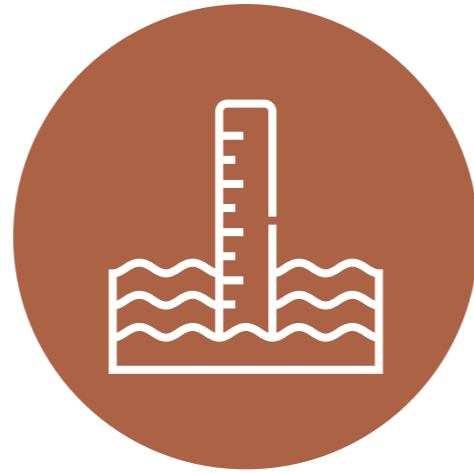


Figure 8. Stormwater treatment and large storage tanks beside Edithvale Recreation Reserve

Objective 3: Improve our Flood Management



To improve resilience to floods in the way we prevent, manage and respond to them.

Our Goals

Local Community	<ul style="list-style-type: none"> To improve information and support measures to our local community to reduce uncertainty caused by flood events. Improve response and recovery from flood events as outlined in Kingston’s Municipal Emergency Management Plan.
Local Building Projects	To ensure that new buildings are designed and constructed to be less prone to flooding, both now and under future climate change conditions.
Local Council	To reduce the frequency of flooding on roads and within properties by maintaining and upgrading the local drainage system to meet our community’s expectations.
Regional Partners	<ul style="list-style-type: none"> To reduce the risk of extreme rainfall events causing flooding inside future buildings by working with Melbourne Water to update Kingston’s planning requirements, like flood overlays and flood levels. To work with Melbourne Water to prioritise improvements to the main drainage network at Kingston hot spots to reduce the extent and frequency of flooding.

To achieve our goals, we will:

- Continually improve how we maintain and upgrade local drains in targeted problem areas.
- Work with Emergency Services agencies to improve response and recovery from flood events as outlined within Kingston’s Municipal Emergency Management Plan.
- Prepare an updated Kingston Flood Management Plan including improvement actions.
- Prepare for sea level rise and its impact on how stormwater can flow into Port Phillip Bay. This includes planning for more vulnerable locations around the mouth of Mordialloc Creek.
- Support flood prevention through how building permits, planning schemes and flood overlays are managed.

Kingston Council spends around \$8 million on renewing old storm-water drains and roads each year.

? What action can I take as a community member?

- ✓ Install larger rainwater tanks where possible.
- ✓ Keep house gutters and grates clear and check that your stormwater pipes flow well and can effectively take stormwater away from your property.
- ✓ Be aware of the likelihood of flooding in your street. Know how to act safely in the event of a flood and who to contact. Call 132 500 for emergency assistance from Victoria State Emergency Service (VicSES) or Kingston Council on 1300 653 356 for general requests.

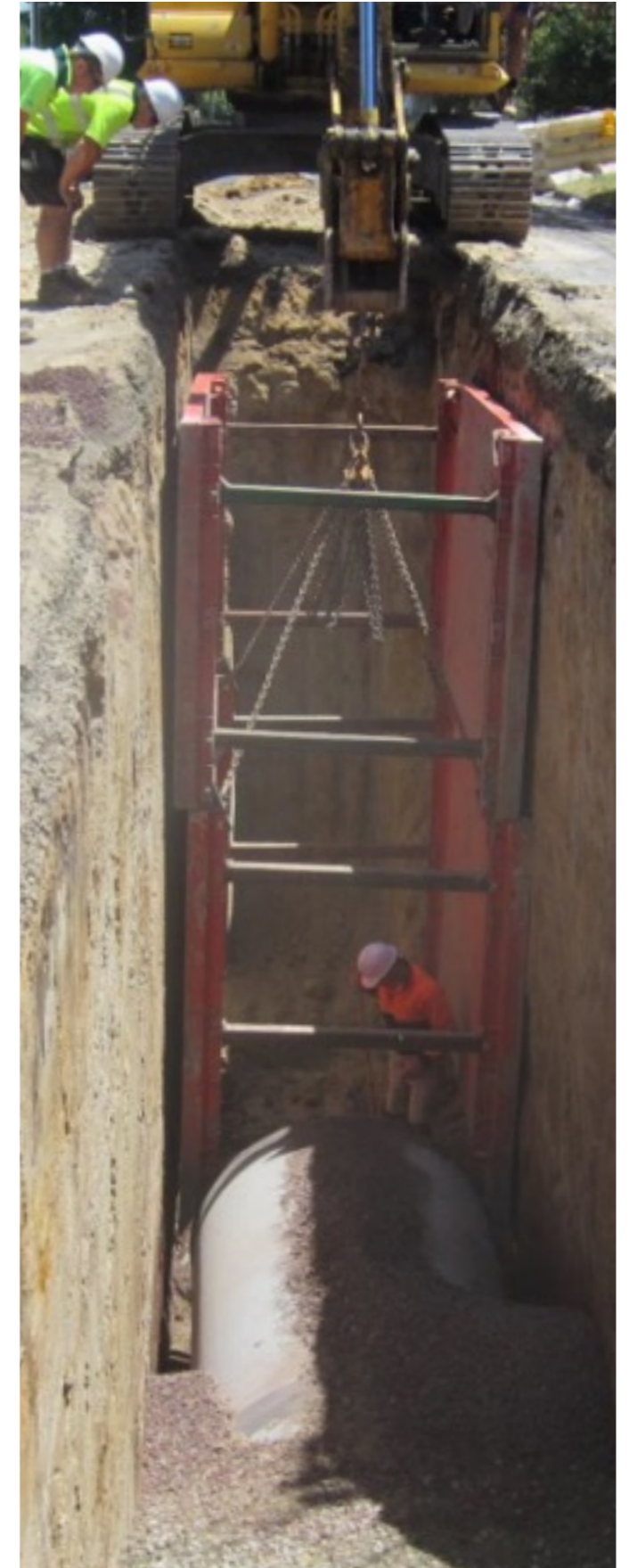


Figure 9. Constructing a large stormwater pipe upgrade in Clarinda, 2021.

Objective 4: Enhance our Education, Engagement and Partnerships



To work with our community and regional partners to manage our water resources.

Our Goals

Local Community	To assist our community to understand the benefits and to take part in integrated water action and programs.
Local Building Projects	To achieve optimal integrated water outcomes through regular reviews and updates of the City of Kingston's requirements for future building developments.
Local Council	To build knowledge and capacity of Council staff to support a coordinated approach to water management.
Regional Partners	To contribute locally and in partnership with Dandenong Catchment partners to achieve regional water management objectives.

To achieve our goals, we will:

- Raise awareness and knowledge about all aspects of integrated water across all stakeholders, including the local community, local business, local developers, Council operations and collaboration with external government agencies.
- Work with the state government to identify and promote public information to ensure that the information being provided to our local community is readily available, helpful, consistent, and effective.
- Engage our local community and highlight ways that we can all help to progress towards our vision of becoming a water sensitive city, including practical advice about how we can work together to:
 - Improve the quality of our waterways and Port Phillip Bay
 - Increase our understanding about how and why we need to use less potable drinking water and more alternative water
 - Improve our knowledge about flooding and how we can all be better prepared



Figure 10. Students from Mentone schools learning to become "i sea, i care" ambassadors. The City of Kingston has been supporting the Dolphin Research Institute to run this educational program since 2011.

Did you know that each year, students from Kingston schools participated in a leadership program to learn about the importance of protecting marine life in Port Phillip Bay?



What action can I take as a community member?

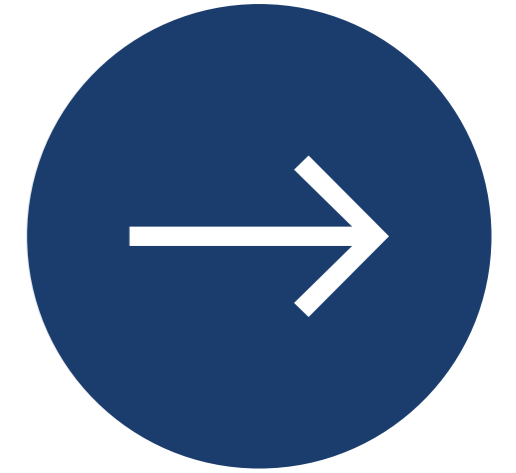
- ✓ Keep up to date with Council water management initiatives by viewing the Council website.
- ✓ Come along to community events on the topic of water sensitive urban design.
- ✓ Ask the planning department at Council for assistance with house design (Council has an ecologically sustainable design (ESD) planning officer).



Figure 11. Supporting a local conservation day.



Implementation Plan



Attachment 1 describes our plan for implementing our integrated water strategy across both public and private areas. The actions and targets will help to drive progress and measure our achievement.

Implementing these actions will significantly improve the way that we manage water. They will support other City of Kingston strategies that focus on open space planning, climate and ecological response, the need for urban cooling, increasing our urban forest and flood management.

The supply of alternative sources of water will help to support healthy trees that will provide more shade with cooling benefits, as well as contributing to reducing our greenhouse gas emissions.

Our Goals

Stakeholder Groups	To make the plan easier to understand, all information has been grouped under the headings of (i) the local community, (ii) local development, (iii) local Council and (iv) a regional approach.
Goals	Each of the strategic objectives have six 'goals' that provide the next level of detail.
Measures	This explains the method that will be used to measure the progress towards achieving each goal.
Targets	The plan lists 2030 and 2050 targets that have been applied to each of the goals and key measures. The targets have been informed by the current status (in 2021) and future projections based on planned projects and activities.
Actions	This lists the individual actions that are required to progress each goal, including information on the main agencies involved and the proposed timeframe.

Governance, Monitoring and Evaluating the Strategy

For successful implementation of this Strategy, internal governance arrangements will address coordination, resourcing, responsibilities and reduce the risk of ineffective outcomes.

An internal Council Integrated Water Working Group, with representatives from key functional areas, will oversee the implementation of the Strategy, including the Implementation Plan that will be reviewed annually, building on the previous year's activities, and will review new opportunities.

Monitoring and evaluation are critical for adaptively managing project implementation and for determining the success of the strategies and actions. A Monitoring, Evaluation and Learning (MEL) plan will be developed which will outline the review framework for this strategy. The MEL plan will specify:

- Key evaluation questions to guide the assessment of the Strategy
- Indicators, source of data and frequency of measurement
- Responsibility for measuring and reporting on indicators
- Indicator thresholds for adapting actions (if found to be failing/ineffective)
- Review frequency of Strategy.

More information

Further information and advice for home owners and business can be found:

- Within our aligned document:
Our Local Water Ways:
Kingston's Integrated Water Story
– The Full Picture
- On our Kingston website
kingston.vic.gov.au
- On the state government website
clearwatervic.com.au
- On the emergency services
website ses.vic.gov.au



City of
KINGSTON

📍 1230 Nepean Highway, Cheltenham VIC 3192

📧 PO Box 1000, Mentone 3194

☎ 1300 653 356

TIS 131 450

✉ info@kingston.vic.gov.au

🌐 kingston.vic.gov.au

Figure 14. Award-winning stormwater harvesting and treatment project constructed beside Edithvale golf course.



**KINGSTON'S INTEGRATED WATER
IMPLEMENTATION PLAN
ATTACHMENT 1**



Figure 13. Aerial of Patterson River Country Club golf course, with Mordialloc Creek and coastline shown on the previous page.



Summary of Objectives & Goals



Objective 1: Use our Water Wisely

Use water throughout the City of Kingston wisely, including less drinking water (potable water) and more use of alternative water.

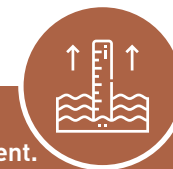
Goals



Objective 2: Protecting our Waterways

Improve the quality of stormwater runoff from local areas flowing into waterways and Port Phillip Bay.

Goals



Objective 3: Improve our Flood Management.

Improve resilience to floods in the way we prevent, manage and respond to them.

Goals

Local Community & Business	<ul style="list-style-type: none"> • Increase our local community's knowledge about potable water conservation and other alternatives. • Reduce residential water usage to below 155 litres per person per day. 	<ul style="list-style-type: none"> • To increase our local community's knowledge about how stormwater pollution effects waterway health. • Enhance and promote litter reduction programs. 	<ul style="list-style-type: none"> • Improve information and support measures to our local community to reduce uncertainty. • Improve response and recovery from flood events – see Kingston's Municipal Emergency Management Plan.
Local Building Projects	<ul style="list-style-type: none"> • Incorporate effective integrated water outcomes into private building, including improved use of rainwater tanks. 	<ul style="list-style-type: none"> • Enable private developments to achieve better construction and maintenance outcomes for treating stormwater. 	<ul style="list-style-type: none"> • Ensure that new developments are designed and constructed to be less prone to flooding, both now and under future climate change.
Local Council	<ul style="list-style-type: none"> • Reduce potable water use in City of Kingston buildings and irrigating sports fields. • Increase the volume of harvested stormwater for irrigating parks and sports fields. 	<ul style="list-style-type: none"> • Reduce and capture litter from local shopping centres and roads that flow into waterways. • Reduce and treat pollutants, such as silt and nitrogen, flowing from local stormwater drains. 	<ul style="list-style-type: none"> • Reduce the frequency of flooding on roads and within properties by maintaining and upgrading the local drainage system.
Regional Partners	<ul style="list-style-type: none"> • Work with South East Water to install recycled water pipeline projects. • Work with Southern Rural water to reduce reliance on bore water by replacing with alternatives. 	<ul style="list-style-type: none"> • Work with Melbourne Water to build large projects like regional wetland and measures to protect rivers, creeks and channels. • Work with Melbourne Water and the EPA to monitor and reduce pollution. 	<ul style="list-style-type: none"> • Work with Melbourne Water to update Kingston's planning requirements, like flood overlays and flood levels. • Prioritise improvements to the main drainage network at flooding hot spots.

Kingston's Actions towards 2030 Targets



Objective 1: Use our Water Wisely

To use water throughout the City of Kingston wisely, including less drinking water (potable water) and more use of alternative water such as rainwater tanks, harvested stormwater and recycled water from Melbourne Water's treatment plant.

Ref No.	Action Item	Timeframe	Key Agencies
K1a	Continue to monitor Kingston Council's and broader community's consumption of potable water and promote educational programs that align with state government strategies.	Monitor water usage annually.	City of Kingston, South East Water
K1b	Implement water-saving initiatives into Council buildings and improve the efficiency of irrigating Council parks and sports fields.	Council improvements to be prioritised within annual works programs.	City of Kingston
K1c	Investigate, design and implement Council's master plan for installing stormwater water harvesting projects, similar to Edithvale Recreation Reserve that stores more than 1 million litres of treated stormwater. See action K2c for stormwater treatment. Plans include the gradual construction of major stormwater treatment projects to irrigate around 20 sports fields, at an estimated cost of \$40 million, between 2024 and 2050.	Investigation and design for 2 sports fields are scheduled for completion by mid-2023. More reserves will be prioritised for installation at the rate of one reserve every two years, subject to funding.	City of Kingston
K1d	Continue working with the state government to introduce recycled water pipelines within the City of Kingston. Plans are being developed for the following pipelines: <ul style="list-style-type: none"> Dingley Scheme: Located along the Mordialloc Freeway reserve to irrigate sports fields, parks, golf courses and market gardens within the Kingston green wedge. Patterson River Scheme: Located beside the Long Beach trail to irrigate Bonbeach Sports Reserve, with potential for extensions to Chelsea Reserve, Beazley Reserve, and golf courses. 	The Dingley Scheme will be designed by 2023 and stage 1 truck main constructed by 2025. The staging of the Patterson River Scheme is subject to further investigation and funding confirmation.	South East Water, DELWP, City of Kingston

Liveability & Nature Benefits

- The provision of alternative water will significantly help to green and cool Council parks, sports fields, streetscapes, including trees and grassed areas.
- These objectives align and contribute towards the City of Kingston's Urban Cooling Strategy (2020), Biodiversity Strategy (2018), Green Wedge Plan (2012), Urban Forest Strategy (due 2023), and the Climate Change Strategy (2018)/Climate & Ecological Emergency Response Plan (2021).

Kingston's Actions towards 2030 Targets



Objective 2: Protecting our Waterways and Bay from Pollution

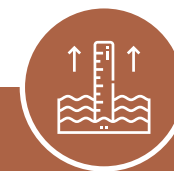
To improve the quality of stormwater runoff from local areas flowing into water courses and Port Phillip Bay, with a focus on reducing litter and all forms of pollution.

Ref No.	Action Item	Timeframe	Key Agencies
K2a	Assess urban catchments draining into Melbourne Water channels or flowing into Port Phillip Bay and commence a prioritised program to implement measures to reduce litter. Continue to support the research and improvement actions arising from the joint agency project known as 'Whole-of-catchment picture of litter management in the Lower Dandenong Creek system' with the report's short & long-term action plan to be completed by mid-2023.	Install large litter traps in Mordialloc shopping centre during 2023. Develop a prioritised plan for gradual installation at other Kingston locations between 2024 to 2030.	City of Kingston, Melbourne Water
K2b	Undertake sample audits of private developments to evaluate the effectiveness of integrated water assets (e.g. rainwater tanks and rain gardens), including construction standards and ongoing maintenance. Review and update Council documents and processes.	Undertake site audits by late 2023 and completed updates to documents by mid-2024.	City of Kingston
K2c	Investigate, design and implement Council's master plan for installing large multi-purpose projects that treat stormwater, to remove pollutants such as silt and nitrogen, and reuse the stored clean water for irrigating Council reserves as described under action K1c.	The timing for constructing these projects align with action K1c.	City of Kingston
K2d	Work with Melbourne Water to implement the construction of the planned wetland along Mordialloc Creek, located east of Boundary Road. Timing is subject to state government funding.	The design is scheduled for completion by 2023.	City of Kingston, Melbourne Water
K2e	Advocate for Melbourne Water to work in partnership with Council to investigate opportunities, identify barriers and develop a costed and prioritised master plan to naturalise sections of the Mordialloc Settlement Creek. This is a large concrete-lined channel that stretches 8 km from Namatjira wetland to Mordialloc Creek.	Discuss investigated opportunities with Melbourne Water by mid-2024 to inform a master plan.	City of Kingston, Melbourne Water

Liveability & Nature Benefits

- Treating stormwater to remove pollutants will significantly help to improve water quality in Port Phillip Bay and key waterways such as Patterson River and Mordialloc Creek, resulting in benefits for healthy waterways, beach users and marine life.
- These objectives align and support the City of Kingston's Coastal & Marine Management Plan, and Climate & Ecological Emergency Response Plan (2021). Plus, numerous state government plans, including DELWP's Draft Marine & Coastal Strategy (2021), a DELWP report on Assessing City-wide Alternative Water Networks (ACAWN) Opportunities in Greater Melbourne (2021) and EPA's Officers for the Protection of the Local Environment (OPLs) program to support local Council's investigate pollution.
- Note that the strategies, actions and targets within the regional catchment planning documents underpin and support all objectives and actions within Kingston Council's Strategy. Refer to the Kingston's Integrated Water Story – The Full Picture (Appendix 3) for more information on the regional Dandenong catchment targets.

Kingston's Actions towards 2030 Targets



Objective 3: Improve our Flood Management

Improve resilience to floods in the way we prevent, manage and respond to them.

Ref No.	Action Item	Timeframe	Key Agencies
K3a	Investigate, plan, design and construct major upgrades to Council's drainage network and maximise the performance of older pipes via the implementation of an effective maintenance strategy. Key projects include major pipe upgrades in Edithvale, Chelsea and Bonbeach that are scheduled for construction between 2022 to 2028.	Construct the ongoing capital works improvement program, typically funded at the rate of \$3 million per year (based on the 2022 program).	City of Kingston
K3b	Work with the Victoria State Emergency Service (VicSES) and the Kingston Municipal Emergency Management Planning Committee (MEMPC) to develop the Kingston Municipal Storm and Flood Emergency Plan (MSFEP) and review the effectiveness of City of Kingston's processes before, during and after a flood event.	Complete reviews and updates by late 2024.	City of Kingston, VicSES
K3c	Undertake detailed flood modelling across 100% of the City of Kingston and seek the minister's consent to advertise a Planning Scheme Amendment to introduce changes to existing flood overlays known as Land Subject to Inundation Overlay (LSIO) and a Special Building Overlay (SBO).	Complete the flood maps by mid-2024 to inform the community consultation process.	City of Kingston, Melbourne Water
K3d	Prepare an updated Flood Management Plan that reviews Kingston's strategic approach to managing flood risks and drainage assets. This will include a prioritised action plan to inform future planning needs.	Commence in 2023 and complete by early 2025.	City of Kingston, Melbourne Water

Liveability & Nature Benefits

- Reducing and effectively managing the impacts of flooding will significantly help our community by providing a safe, secure and affordable environment.
- These objectives align and support the City of Kingston's Climate & Ecological Emergency Response Plan (2021), the Housing Strategy & Neighbourhood Character Study (2020), the draft Coastal & Marine Management Plan (2021) and council's approach to Flood Management. Plus, numerous state government plans, including Melbourne Water's Healthy Waterways Strategy (2018) and Flood Management Strategy for Port Phillip and Westernport (2021).

Kingston's Targets for 2030 & 2050



Objective 4: Enhance our Education, Engagement & Partnerships

The following actions will support the implementation of objectives 1, 2 & 3.

K4a	Develop a communication plan to engage with the local community about water management topics in partnership with state government agencies to ensure consistent information.	Develop the plan by late 2023 and implement from 2023 to 2030.	City of Kingston
K4b	Investigate emerging best-practice conditions for private building projects (to increase the effectiveness of design, construction, and maintenance outcomes) and update City of Kingston's guidelines for developers.	Commence review in 2023 and issue updated guidelines by 2025.	City of Kingston
K4c	Track the progress against all actions and targets, including Council's internal capacity building, and report on contributions towards achieving regional targets within the Dandenong catchment.	2022 to 2030	City of Kingston

Figure 14. Local park
in Dingley Village



Kingston's Targets for 2030 & 2050



Objective 1: Use our Water Wisely

To use water throughout the City of Kingston wisely, including less drinking water (potable water) and more use of alternative water such as rainwater tanks, harvested stormwater and recycled water from Melbourne Water's treatment plant.

	Description of Goals & Key Measures	2030 Target	2050 Target
Local Community & Business	<p>Goals:</p> <p>1.1: To increase our local community's knowledge about potable water conservation and other alternatives.</p> <p>1.2: To incorporate effective integrated water outcomes into private buildings, including improved use of rainwater tanks.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Compare potable drinking water usage throughout the City of Kingston against the aim to limit consumption to 155 litres per person per day campaign (Ref # K1.1). This figure was estimated as 165 L/p/day in 2019. Estimate the volume of water provided by private rainwater tanks throughout the City of Kingston, based on existing and future new dwellings constructed (Ref # K1.2). This volume was 58 million litres/year in 2021. 	<p>Reduce to 140 L/p/day</p> <p>Increase to 160 ML/year</p>	<p>Reduce to 130 L/p/day</p> <p>Increase to 400 ML/year</p>
Local Council	<p>Goals:</p> <p>1.3: To reduce the consumption of potable water within Kingston Council buildings, aquatic centres and for irrigating sports fields.</p> <p>1.4: To increase the volume of harvested stormwater for irrigating Kingston Council parks and sport fields.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Measure the volume of potable water used by Kingston Council (Ref # K1.3). City of Kingston's water consumption was 247 ML/year in 2016 and has reduced to 170 ML/year in 2021. Measure the volume of harvested stormwater used by Kingston Council (Ref # K1.4). This was 12 ML in 2021. 	<p>Reduce to 150 ML/year</p> <p>Increase to 30 ML/year</p>	<p>Reduce to 120 ML/year</p> <p>Increase to 35 ML/year</p>
Regional Approach	<p>Goals:</p> <p>1.5: To work with South East Water to install recycled water pipeline projects.</p> <p>1.6: To work with Southern Rural water to reduce reliance on bore water by replacing it with alternatives.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Measure the volume of recycled water used to irrigate public sport fields and passive recreational open spaces throughout the City of Kingston (Ref # K1.5). This figure was less than 1 ML in 2021. Measure the volume of bore water used by Kingston Council (Ref # K1.6). This figure was 8 ML in 2021. 	<p>Increase to 40 ML/year</p> <p>Reduce to 5 ML/year</p>	<p>Increase to 80 ML/year</p> <p>Reduce to no use</p>

Kingston's Targets for 2030 & 2050

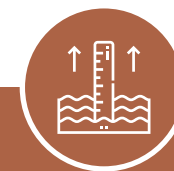


Objective 2: Protecting our Waterways and Bay from Pollution

To improve the quality of stormwater runoff from local areas flowing into water courses and Port Phillip Bay, with a focus on reducing litter and all forms of pollution.

	Description of Goals & Key Measures	2030 Target	2050 Target
Local Community & Business	<p>Goals:</p> <p>2.1: To increase our local community's knowledge about how stormwater affects waterway health (leading to a change in community behaviour) and promote litter reduction programs.</p> <p>2.2: To prevent stormwater pollution by working with Melbourne Water and the Environment Protection Authority (EPA) to monitor and take preventative action.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Community survey results that measure the level of water cycle awareness throughout the City of Kingston. Currently rated at an intermediate level (Ref # K2.1). 	Good level of positive change in community behaviour.	High level of positive change in community behaviour.
Local Development	<p>Goals:</p> <p>2.3: To enable private developments to achieve better construction and maintenance outcomes for treating stormwater as part of new building projects.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Monitor the effectiveness of Council strategies to enable private developments to achieve EPA best practice stormwater treatment outcomes, both during construction and in the longer term. Currently rated at a low level of effectiveness due to a lack of maintenance (Ref # K2.3). Note that private rainwater tanks (RWTs) contribute around 400 kg/year of Total Nitrogen (TN) removed in 2021, and this is estimated to increase to around 700 kg/year by 2030 and a very significant 2,000 kg/year by 2050. 	Improved level of effectiveness	Good level of Effectiveness
Local Council	<p>Goals:</p> <p>2.4: To reduce and capture litter from shopping centres and roads that flow into Mordialloc Creek, Patterson River and directly into Port Phillip Bay.</p> <p>2.5: To reduce and treat the volume of pollutants, such as silt and nitrogen, flowing from local stormwater drains.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Measure the area of urban catchments within the City of Kingston that have a system in place to capture litter prior to entering Melbourne Water channels or flowing into Port Phillip Bay (Ref # K2.4). This figure was 2% in 2021. Estimate the amount of kg/year of Total Nitrogen removed by stormwater treatment systems throughout the City of Kingston from all assets (e.g private, council and state government systems), and shown as a % of EPA best practice (Ref # K2.5). 	<p>Improve to 10%</p> <p>Increase to 17,800 kg/yr (68%)</p>	<p>Improve to 40%</p> <p>Increase to 21,300 kg/yr (79%)</p>
Regional Approach	<p>Goals:</p> <p>2.6: To capture and treat fine pollutants by working with Melbourne Water to build large projects like regional wetlands to protect our rivers, creeks, and channels.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Progression towards investigating the feasibility of state government funded large-scale treatment projects, followed by design and implementation (Ref # K2.6). Model (or measure) the pollutant removal and liveability benefits for proposed projects (Ref # K2.6). 	Plans for major projects have been completed.	Major works have been constructed.

Kingston's Targets for 2030 & 2050



Objective 3: Improve our Flood Management

Improve resilience to floods in the way we prevent, manage and respond to them.

	Description of Goals & Key Measures	2030 Target	2050 Target
Local Community & Business	<p>Goals: 3.1: To improve information and support measures to our local community to reduce uncertainty caused by flood events. 3.2: Improve response and recovery from flood events as outlined in Kingston's Municipal Emergency Management Plan.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> The level of community satisfaction from survey results (Ref # K3.1). Monitor the effectiveness of the coordination of resources and communication between Emergency Services agencies to respond to flood events and assist with recovery. Currently rated at an intermediate level (Ref # K3.2). 	<p>Good level of community satisfaction Good level of effectiveness</p>	<p>High level of community satisfaction High level of effectiveness</p>
Local Development	<p>Goals: 3.3: To ensure that new developments are designed and constructed to be less prone to flooding, both now and under future climate change conditions.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> The level of compliance with planning permit requirements (Ref # K3.3). 	<p>Good level of compliance</p>	<p>High level of compliance</p>
Local Council	<p>Goals: 3.4: To reduce the frequency of flooding on roads and within properties by maintaining and upgrading City of Kingston's local drainage system to meet our community's expectations.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Measure the percentage of local catchment areas within the City of Kingston that have a good stormwater capacity rating to cater for medium storm events, based on 1 in 5-year rainfall intensity (Ref # K3.4). This figure was estimated to be 45% of urbanised areas in 2021. 	<p>Improve to 50%</p>	<p>Improve to 70%</p>
Regional Approach	<p>Goals: 3.5: To reduce the risk of extreme rainfall events causing flooding inside future buildings by working with Melbourne Water to update Kingston's planning requirements, like flood overlays and flood levels. 3.6: To reduce the extent and frequency of flooding associated with the Melbourne Water drainage system by advocating for Melbourne Water to prioritise improvements in problem areas and working collaboratively on possible solutions.</p> <p>Key Measures:</p> <ul style="list-style-type: none"> Manage the timeframe for introducing updated Planning Scheme flood overlays to set floor levels above designated flood levels throughout all areas within the City of Kingston (Ref # K3.5). Progression towards constructing improvements to the main drainage network to reduce the impact of an extreme flood event (Ref # K3.6). 	<p>Overlay advertised by 2025</p>	<p>Overlay approved</p>



📍 1230 Nepean Highway, Cheltenham VIC 3192

📮 PO Box 1000, Mentone 3194

☎ 1300 653 356

TIS 131 450

✉ info@kingston.vic.gov.au

🌐 kingston.vic.gov.au