Theme 2:

Water and coastal management

Background

Water is a precious natural resource that is essential for the vitality and wellbeing of our community and environment.

South Australia faces climate change challenges—including declining average rainfall, prolonged droughts, and more frequent and intense storm events—we must proactively manage water to enhance resilience, support equity in water allocations and safeguard our future.

Water is a precious natural resource that is essential for the vitality and wellbeing of our community and environment.

Image credit: Stellar Momentum

Water and coastal management

Urban infill and reduced landscape permeability are increasing stormwater runoff and contributing to higher pollutant loads entering streams and Rivers the feed into coastal waters in Gulf St Vincent. Without intervention, this will place further pressure on natural waterways and marine ecosystems. Water Sensitive Urban Design (WSUD) is essential to reversing this trend—ensuring new developments incorporate permeable surfaces, green infrastructure, and stormwater treatment to improve water quality and reduce urban flooding.

Our coastal environments are increasingly under threat from the impacts of climate change. Over the coming century, sea levels are projected to rise by up to a metre or more, contributing to increased coastal erosion and the inundation of low-lying areas. These and other changes will significantly affect coastal ecosystems, potentially leading to habitat loss and altered coastal conditions. We play a critical role in identifying coastal hazards and planning adaptive responses that enhance the resilience of our region and contribute to broader climate resilience efforts.



Our waterways are important assets that require ongoing protection. Erosion control, pollutant management, flow regime and invasive species removal are critical priorities for maintaining the health of these ecosystems. Meanwhile, aging stormwater infrastructure, coupled with increasing demands from urban development and climate variability, reinforces the need for strategic investment in stormwater management, upgrades, and maintenance.

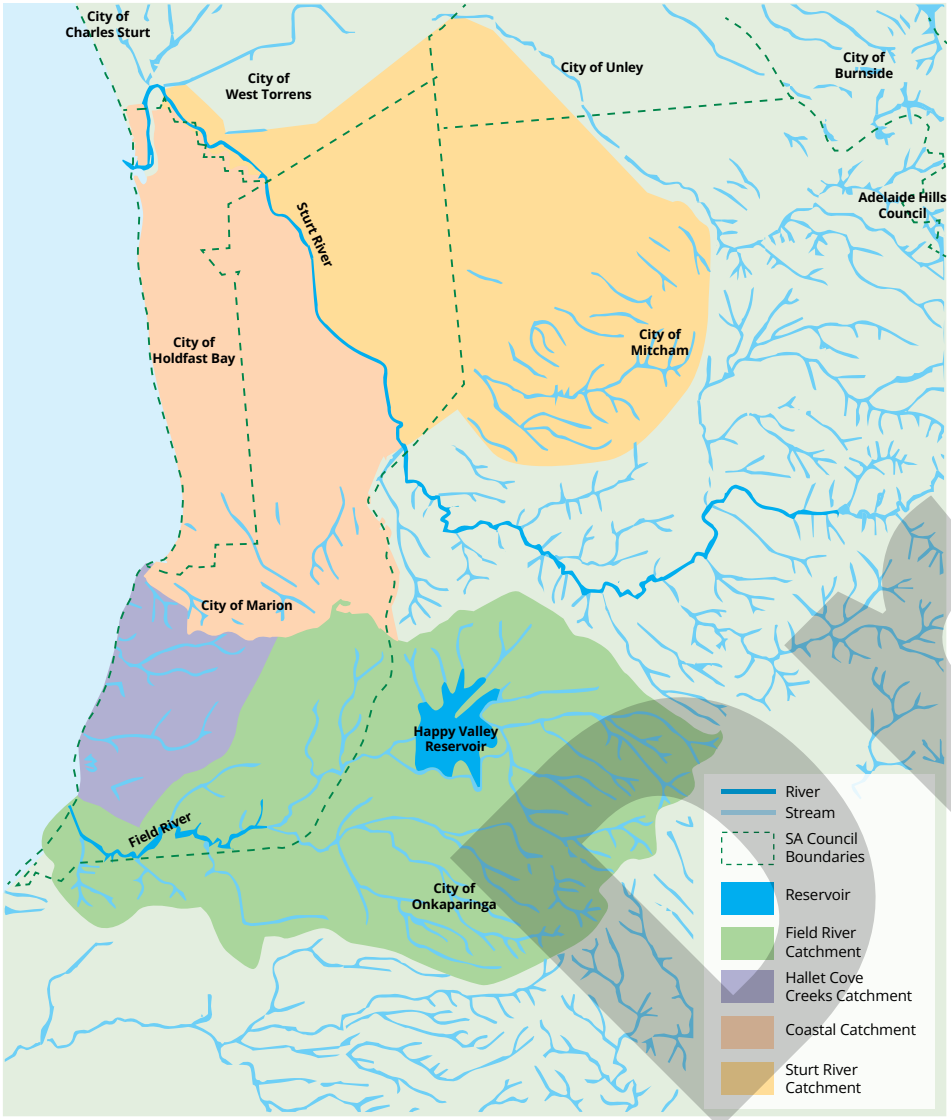
The transition to a water sensitive city is part of South Australia's broader Resilient Water Futures framework, which outlines a holistic approach to integrated water management, drinking water security, stormwater resilience, and environmental sustainability.

This transition requires collaboration across multiple agencies, including:

- EPA – oversees water quality policies, pollution prevention and monitoring and reporting on the State of the Environment.
- Green Adelaide and the Department for Environment and Water – manage surface and ground water allocation and planning.
- Adjoining councils and the Stormwater Management Authority – stormwater management and planning.
- SA Water – storage, treatment and supply of potable water via mains water reticulation and management of sewerage system.

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City of Marion catchments map



City of Marion has four stormwater catchments in the City of Marion, each at different stages of management planning as shown in the below table.

Catchment	Catchment Management Plan	Responsible Councils	Status
Coastal Catchment	Glenelg to Marino Stormwater Management Plan	City of Marion City of Holdfast Bay	Approved 2014 Due for review in 2026
Sturt River Catchment	Lower Sturt River Catchment Stormwater Management Plan	City of Marion City of Mitcham	Draft in progress
Hallett Cove Creeks Catchment	Hallett Cove Creeks Catchment Stormwater Management Plan	City of Marion	Approved 2014
Field River Catchment	Field River Catchment Stormwater Management Plan	City of Marion City of Onkaparinga	Draft in progress

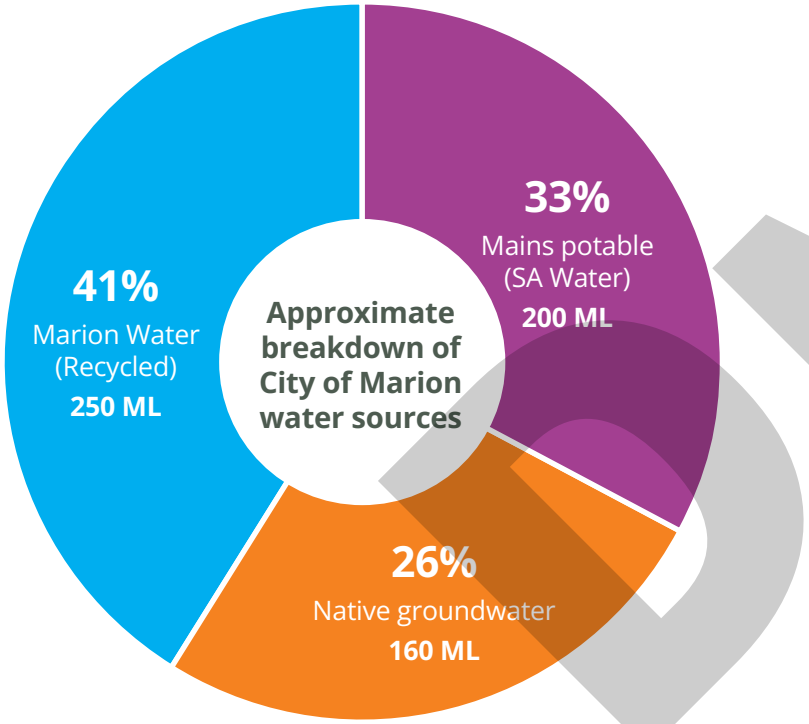
By embedding water sensitive principles into urban planning, investing in resilient infrastructure, and collaborating across agencies, we are actively working towards a water-secure, climate-adaptive, and liveable future for all.

The Marion Water Plan 2023-2026 guides councils water business, treated stormwater is pumped to our parks, gardens and ovals, displacing potable water previously used to irrigate these high value public open spaces. In addition, water is also supplied to adjacent councils, schools and sports grounds at Flinders University and the Women's Memorial Playing Fields in Mitcham. The Marion Water Plan 2023-2026 includes a strategy that supports sustainable economic growth whilst prioritising supply to City of Marion sites first.

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Water and coastal management

The graph below shows a breakdown of the water sources used for council operations. This is an approximate average based on water consumption over several years. It is worth noting that annual water consumption is subject to significant seasonal variations of up to 50%. The water use hierarchy demonstrates how we prioritise water use, considering local conditions and seasonal variations in water availability.





Water use hierarchy

Where council needs to use water to maintain existing services, we will strive to access the water sources in accordance with the following hierarchy:

1. On-site retention – Retain rainwater onsite - using water sensitive urban design or storage in line with approved water allocations.
2. Groundwater – Sustainable use of native groundwater resources in line with water allocation plans for the region.
3. Recycled water – Treated stormwater from Marion Water if supply is feasible (as per Marion Water Plan).
4. Potable Water – Drinking quality mains water supplied by SA Water through the mains reticulation.
5. Other sources – This may be supplied in emergencies only if the other sources are unavailable.

Future water sources that might be considered, however are not a short-term priority for council operations, may include sewer mining, connection to the Glenelg Adelaide Pipeline for recycled sewage water, connections to other aquifer storage and reuse schemes, greywater reuse onsite, temporary carting of water from external sources for emergencies.

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Water and coastal management

Our role

We are committed to being a leader in delivery of WSUD, supporting Adelaide's vision as a water sensitive city. We recognise that water is fundamental to a thriving, climate resilient, and liveable city, and we are dedicated to integrated, sustainable water management that protects resources for both the environment and future generations.

We will lead by example, embedding water sensitive principles into all aspects of our operations, capital works and asset design, while empowering the community, businesses, and developers to adopt innovative and sustainable water practices.

Through collaboration with stakeholders, we will drive:

Clean, healthy waterways – Protecting and restoring natural ecosystems to support healthy waterways that exceed water quality standards.

Water Sensitive Urban Design (WSUD) - Creating greener, cooler, and flood-resilient suburbs.

Water recycling and efficiency – Maximising the use of stormwater, recycled water, and alternative sources and minimise the use of potable water.

Smart and resilient water infrastructure – Future-proofing our city's water systems to adapt to climate change and urban growth.

Community leadership and partnerships – Educating, engaging, and enabling the community to be water wise.

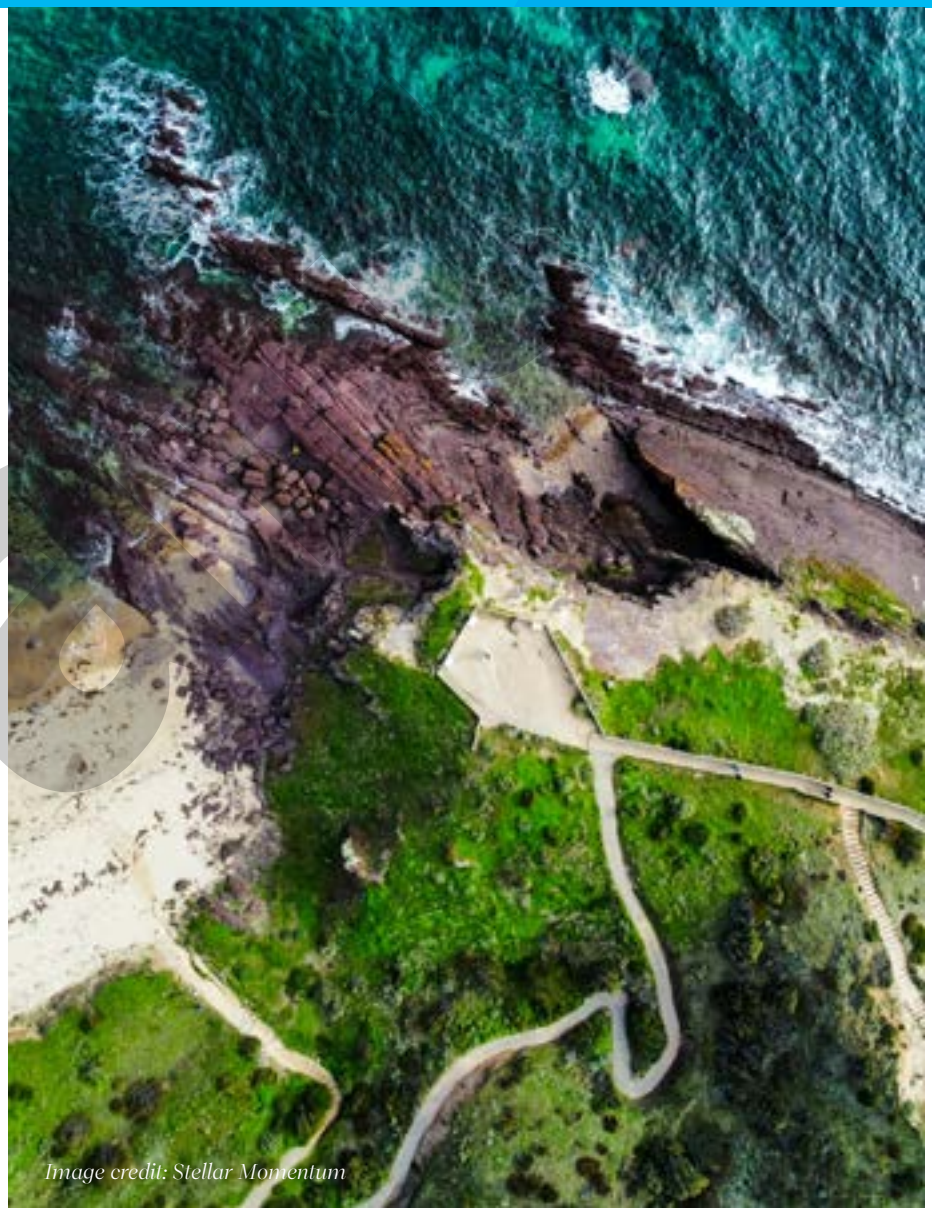


Image credit: Stellar Momentum

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Strategic alignment and targets

This theme aligns with the following priorities in our Strategic Plan:

- **L2.1** Use sustainable and Universal Design Principles, smart technology, and codesign to enhance accessibility.
- **L4.2** Council infrastructure is assessed for climate risks and actions are taken to embed and improve resilience.
- **S1.6** Manage our coastal environment and respond to the impacts of sea level rise, climate and storm surge.
- **L4.1** Advocate to the community on the benefits of environmentally sustainable design in buildings.
- **S1.4** Pioneer new methods in sustainable management of water through water sensitive urban design, water recycling, and provision of water for the environment.
- **S2.3** Build resilience to climate change by managing the impacts and risks.

Alignment with state and national targets

We support these directions around water management that have been set by the South Australian and Australian Government.

Managing groundwater supplies within sustainable limits as per the Central Adelaide Prescribed Wells Area Water Allocation Plan.

The priorities of the Resilient Water Futures initiative led by SA Water.

Aligning with the South Australian Coast Protection Policy (2022), which includes planning for a 0.3m sea level rise by 2050[10], a 1m rise by 2100[11], and consideration of other coastal changes expected over the next 200 years due to ongoing sea level rise and coastal erosion.

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Water and coastal management

Targets for council operations

These targets will measure our progress in improving water management for our operations.

1. Continually increase the use of **recycled water** for our operations by 2030.

2. Ensure potable mains supply water does not exceed **30%** of the total water used for irrigation of council land and aim to keep total potable water consumption **below 200Ml** per year.

3. Expand Marion Water to enable supply of up to **300Ml** per year by 2030.

4. Maintain groundwater extraction within sustainable limits of up to **200Ml** per year.

5. Install **200** new street tree inlets by 2030.

6. Complete and implement updated **Stormwater Management Plans (SMPs)** for all catchments by 2030.

Stretch target for council operations

1. Install 1000 new street tree inlets by 2030 (subect to grant funding).

Community and environmental indicators and goals

- Decrease reliance on the River Murray for metropolitan water supply.[12]
- Increase stormwater harvesting and reuse over the use of potable mains supply water.[13]
- Increase uptake of WSUD features such as rainwater tanks, permeable paving, greywater systems or raingardens.[14]
- Minimise stormwater runoff.[15]
- Stormwater quality within acceptable limits.[16]
- Groundwater levels and quality to be within acceptable limits.[17]
- Marine condition monitoring reports to be within acceptable limits.[18]
- Reduce marine debris.[19]
- Reduce microplastics in wetlands, watercourses and coastal environments.[20]
- Reduce community per capita mains water consumption.[21]

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Water and coastal management

Current activities

✓ Stormwater management
Construction and maintenance of the stormwater infrastructure network is informed by catchment-based SMPs and a Stormwater Asset Management Plan to reduce risks of flooding and protect water quality.

✓ Water sensitive streetscapes and reserves
To reduce stormwater runoff and improve water quality in our streets and reserves, we continue to expand, monitor and maintain WSUD features - such as street-sweeping, gross pollutant traps, street tree water inlets, raingardens and permeable paving.

✓ Improving waterways
Collaborating with Green Adelaide and the EPA to define and establish water quality and environmental flow requirements for waterways within our control.

✓ Responsible use of groundwater
Working alongside Green Adelaide and the EPA, we ensure our operations protect groundwater quality and our water extraction is within our agreed allocation and sustainable limits and help reduce reliance on potable water.

✓ Monitor coastal climate change
Our coastal monitoring program is focused on monitoring, assessing and responding to coastal climate change risks.

✓ Coastal hazard adaptation planning
We work with the community and other stakeholders to plan for coastal hazards particularly associated with coastal climate change and sea level rise.

✓ Marion Water
The Marion Water Business delivers recycled water for council reserves and our customers to reduce reliance on potable water in our region.







✓ Promote awareness of water quality
Supporting the work of lead State Government agencies by raising awareness with the community on water quality issues, particularly where public health is a consideration.

✓ Collaboration and partnerships
In partnership with Water Sensitive SA, neighbouring councils, water authorities and industry experts, we work to improve integrated water management and collaborate on the transition to a water sensitive region.

✓ Advocacy
We advocate to the State Government for holistic catchment-scale planning that integrates water quality, hydrology, biodiversity to improve outcomes for the marine environment.

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Priority WC1

Protect and enhance our water catchments and coast

Objectives

- **WC1a** Advocate for the rivers, creeks, wetlands and groundwater across the city to meet or exceed acceptable standards[22] in health and quality.
- **WC1b** Maintain and improve council's stormwater network to reduce runoff, improve water quality, mitigate against flooding and support climate-resilience.
- **WC1c** Integrate WSUD into council-managed landscapes to increase green infrastructure and mitigate extreme urban heat.
- **WC1d** Increase organisational capacity to design, build and maintain WSUD treatments.
- **WC1e** Monitor our coastline and develop and implement planned responses to coastal climate change hazards.



Image credit: Stellar Momentum

New activities

The following new activities will be undertaken over the course of this plan in addition to our current activities:

WC1.1 Stormwater Management Plans (SMPs): Pending funding from the Stormwater Management Authority, collaborate with the City of Onkaparinga on the development of a SMP for the Field River catchment and review the Glenelg to Marino Stormwater Management Plan to ensure stormwater infrastructure is climate resilient.

WC1.2 Integrate WSUD in major council projects: Ensure the review of the Environmentally Sustainable Design (ESD) Guidelines and Streetscape Guidelines include guidance on WSUD features for council projects.

WC1.3 Improve WSUD maintenance programs: Review maintenance levels for WSUD assets with a focus on data collection and defining levels of service through the asset management framework.

WC1.4 Build staff knowledge and skills: Strengthen WSUD skills and knowledge through workforce training and development.

WC1.5 Coastal Hazard Adaptation Plan: Develop a Coastal Hazard Adaptation Plan for the City of Marion[23].

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Priority WC2

Conserve water, diversify our water sources and create water sensitive council facilities



Objectives

- **WC2a** Create water sensitive council buildings and facilities.
- **WC2b** Maximise stormwater capture and reuse initiatives including onsite retention and managed aquifer recharge schemes.
- **WC2c** Prioritise use of rainwater and irrigation with recycled water for climate resilient landscapes.
- **WC2d** Use native groundwater within sustainable limits.
- **WC2e** Maximise irrigation efficiency in council reserves through innovation and smart technology.

New activities

The following new activities will be undertaken over the course of this plan in addition to our current activities:

WC2.1 Marion Water Business: Review the Marion Water Plan 2023-2026 to expand how it supports climate resilience and identify future new areas of water supply and demand.

WC2.2 Water sensitive buildings: Review the ESD Guidelines to identify minimum mandatory standards for water resilience in new buildings and upgrades.

WC2.3 Irrigation planning: In the review of council's irrigation plans, ensure use of recycled water and groundwater is prioritised over mains potable water where feasible and utilise digital/smart water infrastructure where appropriate.

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Priority WC3

Promote the establishment of a water sensitive city



Objectives

- **WC3a** Collaborate with stakeholders - other councils, government agencies, SA Water, businesses and community - for coordinated approaches and improved governance of catchment-scale, integrated water management.
- **WC3b** Promote WSUD practices for existing homes, businesses and small-scale developments.
- **WC3c** Demonstrate leadership and innovation in the application of smart and adaptive water infrastructure.

New activities

The following new activities will be undertaken over the course of this plan in addition to our current activities:

WC3.1 Resilient Water Futures: Increase the integration of water resilience measures throughout existing council services and reviews of council plans with support from Water Sensitive SA[24].

WC3.2 Expand stormwater monitoring: Expand monitoring of catchment drains to assess stormwater volume, water quality, and WSUD effectiveness.

WC3.3 Water sensitive developments: Work with partners such as Water Sensitive SA and PlanSA to expand educational campaigns and advocate for new planning policy around water sensitive homes, businesses and developments with an increased focus on onsite water retention.

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