

# Water Management Action Plan **2023 - 2027**



April 2023



# CITY OF WEST TORRENS

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### **Kurna Acknowledgement**

The City of West Torrens is located on the Traditional Homelands of the Kurna Nation of People, the first Traditional Owners and Custodians of the Adelaide Region. It is important to recognise that, while colonisation has resulted in the dispossession and dislocation of the Kurna Meyunna, their Spiritual, Cultural Heritage and relationship with their Country is enduring. Kurna's Connection and obligation to their Ancestral Lands the (Yarta) is still as important to the living Kurna people today. The Kurna people have lived on their lands for more than 50,000 years and developed strong and enduring spiritual, social, economic and governance systems that are still relevant for Aboriginal Title and are recognised within the 1836 Letters Patent.

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### Document history

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1.0	28 September 2022	Draft for Executive approval
2.0	1 February 2023	Draft for Executive review
3.0	18 April 2023	Final

## Introduction

### Purpose

Water is one of our most valuable resources. The provision of a clean and sustainable water supply, and healthy waterways are important for the vitality and wellbeing of our community and environment. The likely impacts of climate change for South Australia indicate an increase in high intensity rainfall events, higher temperatures, higher evaporation rates and reduced overall rainfall. Hence efficient and sustainable management of our water resources is integral for our community and environment.

The City of West Torrens (CWT) and the community have a role to play in the sustainable management of water resources in the western region of Adelaide.

It is now timely to review and update Council's previous Water Management Action Plan for 2023-27 to ensure we respond to emerging issues, and continually improve the way we use and manage water.



The purpose of the Water Management Action Plan 2023-27 (the Action Plan) is to build upon the important work already undertaken and to provide a program of works to continually enhance Council's water

management activities. It provides a framework for prioritising sustainable water management actions over the next five years and describes how progress will be measured as we plan, deliver and advocate for improved water management.

### Earlier Achievements

The City of West Torrens first introduced a Water Management Action Plan in 2009 which addressed issues relating to the drought Adelaide was experiencing at that time. At the height of the drought, severe water restrictions were in force and metropolitan councils were turning off taps to irrigate all but the most essential green open spaces. There was a heightened awareness amongst the community of the need to use water wisely and conserve wherever possible.

That earlier Action Plan aimed to minimise the consumption of, and dependence on, potable (drinking) water for non-potable needs, resulting in:

- Upgrades to more efficient irrigation systems and practices at park and reserves to reflect the Irrigated Public Open Space Code of Practice (IPOS);
- Installation of water sensitive urban design installations such as raingardens;
- Installations and plumbing of rainwater tanks at Council owned buildings;
- Rainwater tank rebates and water efficient product distribution to residents; and
- Continued expansion of the Glenelg to Adelaide Pipeline (GAP) network for recycled wastewater irrigation from the Glenelg Wastewater Treatment Plant to Council's open spaces.



That Action Plan was then replaced by the Water Management Action Plan (2014-2019). It built upon the earlier work undertaken and aimed to drive adaptations and enhancements in:

- Water resource demand and supply;
- Diversifying water resources;
- Greening open spaces sustainably; and
- Improving stormwater management through water sensitive urban design (WSUD).

As a result, Council increased its water security through effective monitoring and controls focused on reducing water usage. Council has now achieved 100% IPOS compliance for open space irrigation, well in advance of its target date of 2024.

As water use for irrigation purposes being highly variable and dependent on climatic conditions, which can fluctuate from year to year depending on rainfall levels, setting water reduction targets for irrigation usage has not been found to be the most useful, or accurate, method to manage and demonstrate how we manage water for such purposes.



### Development of the Water Management Action Plan

The community consultation and engagement undertaken for preparing Council's Community Plan 2030 received feedback from over 1,000 members of the community. This helped to develop a sound understanding of the needs and aspirations of the community and helped to develop Council's strategic objectives, including: Reducing the City's impact on the environment; preparing for and responding to the challenges of a changing climate; open spaces that foster the natural environment, support biodiversity and encourage people to spend time outdoors; protecting and expanding the urban forest.

This Action Plan builds on the work already achieved, responds to the water-related community aspirations in Council's Community Plan 2030, objectives in Council's Climate Mitigation and Adaptation Strategy, and the State Government's 30 Year Plan for Greater Adelaide. As such, it has

been developed with consideration of current water management issues and directions, community aspirations, and the local, state and federal water policy environment.

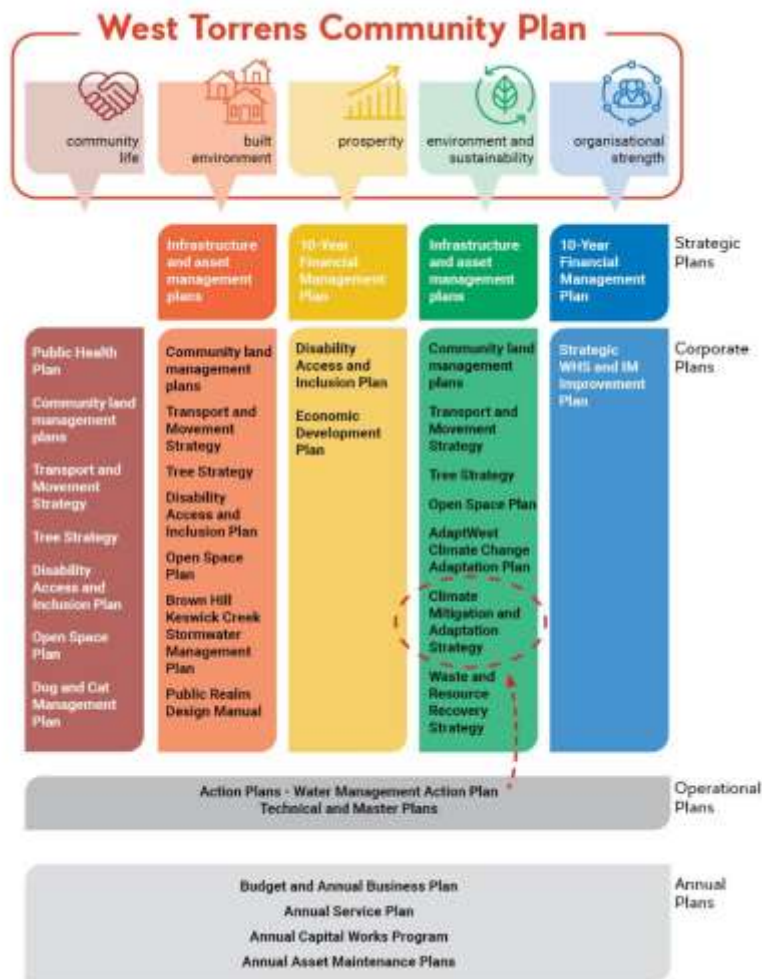
### Strategic alignment

Our community has expressed its desire to live and work in a city that is prepared for and responds to the challenges of a changing climate, provides open spaces that foster the natural environment, support biodiversity and encourage people to spend time outdoors. The ability to meet these desires is dependent on efficient and sustainable water management.

Council's Community Plan 2030 reflects our community's vision for "West Torrens - committed to being the best place to live, work and enjoy life". It presents aspirations for a vibrant and connected community within a liveable and sustainable city and proposes long-term and short-term strategies to guide the operations, investment and decisions of Council.



Within City of West Torrens corporate planning framework the Water Management Action Plan (WMAp) sits within the environment and sustainability focus area. The WMAp is an operational plan and sits below and is linked to the Climate Mitigation and Adaptation Strategy which is a corporate plan.



The WMAP sits within the following State Government and Council strategic framework:

**State Government:**

**SA's 30 Year Plan for Greater Adelaide** - Sets out targets to protect and secure our water resources.

**Adelaide Plains Water Allocation Plan 2022** - describes how water licences and permits for the groundwater resources within the Adelaide Plains area will be issued and managed in the future.

**Green Adelaide** - Green Adelaide is driving an integrated 'hills to sea' approach to ensure the sustainable management of all water sources so the benefits to the environment and community are maximised.

**SA Water** - Responsible for the distribution and maintenance of potable water and recycled water networks throughout South Australia.

**The Planning and Design Code** - The Code sets out a comprehensive set of policies, rules and classifications which, when combined with mapping, apply in the various parts of the State for the purposes of development assessment in South Australia

**Relevant legislation:**

- *Local Government Act 1999*
- *Planning, Development and Infrastructure Act 2016*
- *Metropolitan Drainage Act 1935*
- *Water Industry Act 2012*
- *Safe Drinking Water Act 2011*
- *South Australian Water Corporation Act 1994*
- *Landscape South Australia Act 2019*
- *Environment Protection Act 1993*

**Council:**

**Climate Mitigation and Adaptation Strategy** - sets out overarching objectives and initiatives for mitigation of, and adaptation to, the effects of a changing climate.

**Stormwater Asset Management Plan** - Council's suite of Asset Management Plans includes a plan for stormwater.

**Tree Strategy** - sets out the ongoing management of trees in streets and parks.

**Open Space Plan** - highlights the importance of creating greener and cooler public open spaces.

**Design guidelines for 'Street Trees in Challenging Spaces'** - guidelines for planning and planting street trees in confined spaces.

**AdaptWest Climate Change Adaptation Plan** - AdaptWest provides a forward plan for the delivery of regional priorities to manage stormwater to protect and enhance where we live and work.

**Brown Hill Keswick Creek Catchment Stormwater Management Plan** - The plan is designed to substantially reduce the number of properties affected by very large flood events.

**Stormwater Management Plan** - West Torrens Drainage Catchments (draft currently in development).



## Our city and community

West Torrens comprises 37 square kilometres of Adelaide's western metropolitan area and is situated between the Adelaide Central Business District (CBD) and Gulf St Vincent. As a result, its location makes it a sought after place to live.



The region, its plants, animals and waterways, including the River Torrens (Karrawirra Pari) have continuing cultural and spiritual significance to Kurna people. The river is not only a special place for Kurna, but is also valued for its natural landscape appeal, biodiversity and open space and recreation activities.

Approximately 61,000 residents live in West Torrens and the need for residential properties increases each year. The influx of people to our city means that the need for services and amenities are always changing and, as a result, a large portion of Council's annual budget is earmarked for upgrades and maintenance, as well as the development of new infrastructure and provision of services.

The majority of the land area within West Torrens is dedicated to residential development while the commercial areas comprise a range of industrial, logistic, distribution and retail establishments. West Torrens is well-known for its shopping facilities including Harbour Town, Ikea, Brickworks Marketplace, Kurralta Central and Mile End Homemaker Centre.

Infill development is a current and ongoing issue impacting the City of West Torrens. This will both increase our residential population in the future and also, have a range of impacts on water resources that will need to be managed.

Adelaide Airport occupies a significant area of land in the centre of West Torrens, taking up approximately 38% of land within the Council boundary.

Approximately 6% of the total land area within West Torrens is dedicated to public open space, including the River Torrens Linear Park, local and neighbourhood parks, and other public open space such as public ovals and sporting grounds.

Approximately 30% of the population of West Torrens was born overseas, and 30% of our residents speak a language other than English at home. More people of non-English speaking ancestry and a larger percentage of overseas arrivals live in West Torrens compared to Greater Adelaide, with the largest groups being from India, Greece, China and Italy as well as those born in the United Kingdom.



Many residents of European heritage migrated to Australia in the second half of the twentieth century, whereas the past few years have seen many new migrants from non-European countries such as India, China, the Philippines, Malaysia and Bangladesh.

The community is culturally diverse and is undergoing population growth and change, where our existing senior citizens are transitioning into the elderly category and younger populations are moving into the area.

## Water management in West Torrens

### Our roles and responsibilities in water management

Roles and responsibilities related to managing water in the urban landscape are complex and span multiple agencies and authorities, including Local and State Government.

- Water quality policies are managed by the Environment Protection Authority, while water access policies are managed by the Department for Environment and Water, and Green Adelaide.
- SA Water and Local Government manage the infrastructure system, although some parts of the stormwater system (for example creeks) are privately owned.
- The Department of Infrastructure and Transport, and Local Government have a significant impact on the creation and movement of stormwater by regulating the type and location of built infrastructure.
- Human health impacts are managed by SA Health and SA Water, while flood related issues involve the Department of Environment and Water and State Emergency Services.
- The Stormwater Management Authority implements the State-Local Government Stormwater Management Agreement and operates as the planning, prioritising and funding body in accordance with that Agreement.

Water flows through West Torrens without regard to administrative boundaries. Development in one part of a catchment may have impacts far away, often in other council areas. The City of West Torrens therefore collaborates with a range of stakeholders in managing water issues, particularly stormwater management activities.



Council has a key role in planning and managing the local water cycle. Council is responsible for strategic planning for its region through the development of plans, land use planning, stormwater drainage, local roads, streets, footpaths, nature strips and street trees, many parks and playing fields and much of the land around our waterways.

## Influencing water management

The City of West Torrens has the ability to influence the way water is used and valued by the community, and governing bodies through its approach to water management. In particular, Council can make a significant impact in three key ways, as outlined below. These have been given due consideration when developing the Council's targets and actions. These key areas of influence are:

### Leading by example

Council takes an integrated water management approach to its own developments and capital works and asset management programs.

### Assisting local communities

Council is committed to working with local communities to empower them to take water sensitive urban design planning into their own hands and be part of the solution. The Council will do this by educating the community about solutions available to them, such as raingardens and water efficiency measures and the benefits of each, while providing rebates and grants to financially assist the community in implementing these solutions.

### Promoting Water Sensitive Urban Design

West Torrens is a state leader in applying WSUD such as raingardens and tree inlets along streets and is committed to promoting the inclusion of WSUD across the landscape. It will continue to work with developers, water authorities and the South Australian Government to ensure new developments are planned to be water efficient, use best practice stormwater management, flood protection and mitigation.



## Our water resources

The City of West Torrens uses a number of sources of water which includes mains water, groundwater (bore water), recycled water (GAP) and stormwater.

Mains water is supplied by SA Water and is used for drinking water, servicing toilets and kitchens in Council buildings and facilities and open space irrigation in areas not serviced by GAP or groundwater.

Groundwater is used by Council to irrigate Weigall Oval, Thebarton Oval and Camden Oval. This licensed groundwater is accessed via bores from confined tertiary sedimentary aquifers. The bores provide water at a low cost relative to mains water. Metering of groundwater extraction commenced in 2010. The irrigation demand for groundwater is seasonal which therefore allows the groundwater aquifers a chance to recover during the winter period when not being pumped. In addition, recharging of the aquifers occurs via aquifer storage and recovery schemes operating within the West Torrens Council area at Glenelg Golf Course and the SA Water Glenelg Wastewater Treatment Plant.

The origin of the groundwater extracted by Council is within the Central Adelaide Prescribed Wells Area. Sustainable management of ground water extraction and use of bore water is an important resource consideration. A Water Allocation Plan for the Adelaide Plains is being finalised by the Department for Environment and Water for this area to provide for the sustainable management of the groundwater resources.

Recycled water from the Glenelg to Adelaide Parklands Recycled Water Project, commonly known as GAP water is also used for irrigation. The GAP scheme filters and disinfects wastewater before reuse. The treated wastewater is pumped from the Glenelg wastewater treatment plant via a pipeline to irrigate ovals, parks, reserves and open space. The project is designed to reduce Adelaide's reliance on River Murray water, reduce wastewater being pumped into the Gulf St Vincent, and increase water availability to support urban greening and also builds resilience to the impacts of climate change.

Stormwater runoff is collected by a network of underground drains and channels. The majority of this runoff drains into the Patawalonga Lake (Barcoo Outlet), with some smaller areas discharging into the River Torrens and directly into the Gulf St Vincent. Council recognises stormwater as a valuable resource and it is captured and reused using Water Sensitive Urban Design along our streets and open space network to irrigate plants and trees.

Natural watercourses have been substantially altered to serve as stormwater drainage channels and the natural wetlands have been drained and reclaimed for residential development and the Adelaide Airport. The River Torrens remains as the only semi natural watercourse intact for most of its length.

The breakdown of Council's water supply mix is shown in the chart below in Figure 1. This chart demonstrates Council's achievement and commitment to sustainable water management through diversification of supply sources. Over 50% of Council's water usage is from sources other than mains water.

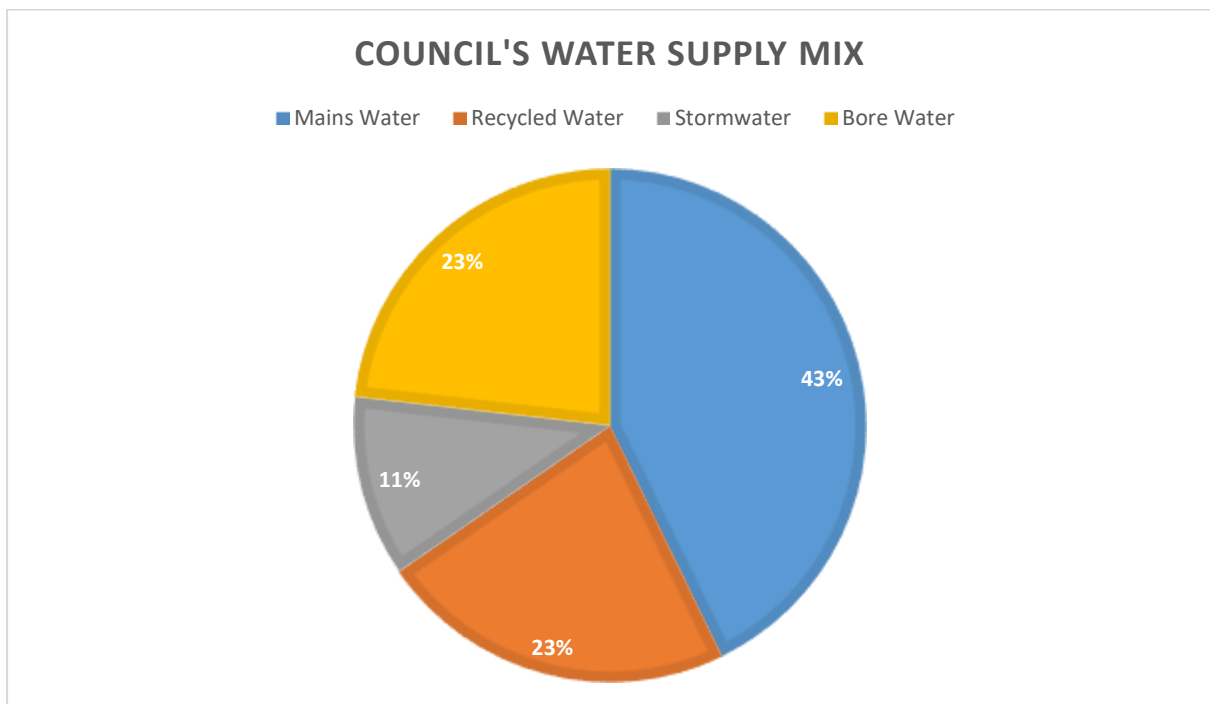


Figure 1 - Council's Water Supply Mix



## Emerging issues

West Torrens is experiencing changes to its urban landscape and climate, and this Plan aims to address emerging issues and to continually improve upon our management of water. Some key issues for water management are described below.

### Climate change

Climate change has a significant impact on rainfall and seasonal water availability. Despite the implementation of the Adelaide Desalination Plant, waterproofing the city for a changing climate is important and there is the need to optimise the use of recycled water (GAP) to water parks and reserves, as well as the utilisation of water from bores and stormwater.

South Australians are faced with complex challenges due to climate change, including sea level rise, reduced average rainfall, intensification of storm events, and more frequent and severe heatwaves, bushfires and droughts. These changes are already being felt by South Australia's people, environment and economy. Average temperatures across the state are now warmer than in the past and are projected to rise to as much as 2.2 degrees Celsius above the long-term average by 2050.<sup>1</sup>

Between 1997 and 2009 South Australia experienced the Millennium Drought. A feature of the drought was a long period without major wet episodes, which prevented water storages from recovering. At the height of the drought, severe water restrictions were in force and metropolitan councils were turning off taps to irrigate all but the most essential green open spaces. There was a heightened awareness amongst the community of the need to use water wisely and conserve wherever possible.

This drought period was subsequently followed by two years when local flooding occurred across Adelaide. These flood events raised awareness of the need to reduce stormwater runoff from hard surfaces, such as roofs and roads, an issue further exacerbated by an increase in infill development.

Both droughts and floods are common in Adelaide and it is necessary to plan for both. Using an integrated total water cycle approach to water management enables councils, businesses and residents to implement solutions that save water and reduce flooding at the same time.



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<sup>1</sup> Climate Change in Australia (2021), *South Australia's Changing Climate*, <https://www.climatechangeinaustralia.gov.au/en/changing-climate/state-climate-statements/south-australia/>, accessed 10 June 2022.



## **Urban development**

West Torrens has experienced significant urban redevelopment such as in-fill residential development activity with increase in housing densities. This in-fill development is expected to continue and increase further in the future. This has led to an increase in impermeable surfaces, preventing rainwater from seeping into the ground and putting more rainwater into the stormwater system. This increases the potential for flooding and the amount of pollutants that enter local waterways and the Gulf.

However new development provides the opportunity to implement best practice water management systems such as water efficient appliances, rainwater tanks and raingardens which reduce stormwater runoff and hence flooding, while increasing water security and improving the health of local waterways.

## **Stormwater and surface water quality**

Stormwater pollutants can severely affect the health of our waterways by smothering seagrass and causing toxic algal blooms. While stormwater is just one component of the water cycle, stormwater runoff quality runoff is an important indicator of how well we are tracking towards our water sensitive future. This is because the methods to achieve best practice are diverse and deliver multiple water sensitive benefits. For example, the primary purpose of a rainwater tank is to store harvested rainwater for use, but it also prevents pollution running off into stormwater drains and natural waterways, as well as providing stormwater detention which helps to reduce flooding.

As a leader in applying WSUD, measures such as raingardens and tree inlets along streets are considered to be important elements for watering roadside vegetation with stormwater runoff, reducing our reliance on mains water supply, and filtering out pollution that would have otherwise have discharged to the Gulf St Vincent.

## **Groundwater**

The water currently extracted from Council's bores is typically of good quality, although salinity is increasing. Uncertainty about the groundwater allocation process and the security of supply and potential future extraction charges are driving consideration of alternative water supply options.

## **Recreation and open spaces**

Council maintains a network of open spaces and public places that cater for a range of recreational activities for West Torrens residents and visitors. Community demand for well-maintained sports grounds and high quality, landscaped settings creates a high water supply demand. In a typical year around 60% of the water used by Council is used to maintain these spaces to their optimal amenity level in line with the Irrigated public open space code of practice (IPOS).

To increase water security while maintaining these spaces it is important to ensure water is efficiently used, via an optimal mix of water supply sources that balance social, environmental and economic benefits.



## Irrigated Public Open Space Code of Practice (IPOS)

When considering the management of open space, ovals and playing fields, it is important to understand the technical process by which they are managed. Irrigation Management of Council's Public Open Space is undertaken via the Code of Practice: Irrigated Public Open Space (IPOS). IPOS provides the tools and reporting models necessary to implement best practice irrigation management in the provision of public open space such as sports fields, parks and reserves. As mentioned previously 100% of all Council open space irrigation is IPOS compliant.

The objective of IPOS is to provide fit for purpose turf based on efficient irrigation management and sound horticultural practices. The Code of Practice brings significant benefits not only to Council but to the community and environment in a broader context. These benefits are summarised as:

- Fit for purpose turf
- Significant water savings translating into reduced watering costs
- Increased flexibility for the irrigator in the case of water restrictions
- Recognition of the level of irrigation efficiency in assessing exemption applications in the case of water restrictions
- Efficient irrigators are not penalised for efficiencies already demonstrated
- Community recognition/accountability/demonstration of efficient watering practices employed
- Potential aversion of public health and safety issues – particularly in the case of school ovals and sporting grounds
- Increased amenity levels associated with appropriately irrigated public open space

Through IPOS water savings come from:

- System scheduling during the shoulder periods either side of the peak season - significant savings are also generally available at smaller sites where system constraints are not so much of an issue.
- Efficient irrigation systems - particularly older systems, were poorly designed resulting in significantly greater water use than would otherwise be required
- Ongoing monitoring and reporting of irrigation performance and adjustment of irrigation scheduling to match climatic conditions.



The process for irrigating public open spaces is comprised of six steps outlined within the code:

1. Implement a strategic approach to irrigation management underpinned by a policy statement and commitment to appropriately resource and manage the irrigation of the sites under their control.
2. Ensure that systems are functioning to the appropriate performance standard with periodic system audits and ongoing regular maintenance.
3. Ensure that an appropriate horticultural maintenance program is in place to maintain soil structures and turf nutrient requirements.
4. Determine the baseline irrigation requirement that using long term average climatic data is used to set the monthly irrigation schedule and consumption.
5. Amend the determined irrigation schedule on a regular basis to account for climatic variance to the long term average. This will ensure that the turf is receiving the required water requirement to maintain it at the predetermined quality level.
6. Monitor irrigation water consumption against irrigation requirement and report on irrigation efficiency and turf quality.

As such, when assessing the management of IPOS, emphasis is placed on the irrigation efficiency, as opposed to just the irrigation consumption:

- Irrigation efficiency is calculated by dividing the actual consumption by the requirement.
- Efficiency is the only method of measuring water used for the purpose of irrigating.
- Optimum efficiency is 100 %, with the desired outcome being within 10% of this.

Public open space irrigated under IPOS has a site specific irrigation management plan in place to maximise its water efficiency, taking in to consideration:

- Vegetation type (each plant has unique water requirements)
- Soil (soil type will determine water availability and infiltration rate)
- Activities undertaken on the site (use of the site will determine suitable vegetation standards for parks and ovals).

The allocation of water is subject to an order of irrigation hierarchy, as below:

1. Sports Grounds
2. Strategic Regional Parks
3. Local/ Neighbourhood Parks with playgrounds
4. Local/Neighbourhood Parks without playgrounds
5. Traffic Control Devices
6. Tree Watering (Street and Reserve)

Every site that meets IPOS standards is assigned a water allocation dependent on:

- Area to be irrigated
- Required turf standard
- Climatic conditions
- Vegetation type
- Soil type
- Irrigation system distribution efficiency

## Vision, objectives and actions

### Vision

Our vision for water management is - A Council committed to becoming a water sensitive and climate resilient city through sustainable water usage and holistic best practice water management across all operations.

### Objectives and actions

Five objectives have been developed for this Water Management Action Plan 2023-27, building on the work of the previous two water management action plans. The five objectives were developed through a workshopping process with internal stakeholders, with the objectives from the previous plans used as a starting point.

In addition, the objectives respond to:

- City of West Torrens desire to become a water sensitive and climate resilient city
- Review of the *Water Management Action Plan 2014 - 2019*;
- The recently updated *City of West Torrens Community Plan 2030*;
- Council's Climate Mitigation and Adaptation Strategy;
- Council's Open Space Plan; and
- Relevant state and national legislative requirements, plans and strategies.

The objectives have also been developed with consideration of Council's scope of influence to ensure that local issues are addressed in the most effective and practical way possible.

The objectives seek to reflect the community's aspiration for a city that responds to climate change, and protects and conserves our natural resources. This requires determining an optimal water mix to ensure an efficient and sustainable water supply, while also considering the objectives of economic costs, social preferences and environmental impacts.

Council activities and operations will play a vital role, however, for our vision to be fully realised, the City of West Torrens must also build community capacity, and foster partnerships across other parts of the public sector in relation to integrated water cycle management.

#### **The five objectives for this plan are:**

1. Improve water security.
2. Maintain green spaces and cool places.
3. Mitigate flooding.
4. Protect our waterways and natural environment.
5. Support community wellbeing.

These objectives will be achieved through a number of actions. The actions are intended to be a significant step in the transition towards a water sensitive and climate resilient city.



## 1. Improve water security

### Actions:

#### The following actions will be undertaken to help achieve and enhance water security:

- Undertake an optimal water mix study to develop targets for using alternative water sources, including sustainable bore water use.
- Investigate the feasibility and financial sustainability of purchasing harvested (non-potable) water from other sources (e.g. neighbouring councils, Adelaide Airport).
- Continue extension of the GAP to irrigate more public open spaces in West Torrens.
- Undertake water efficiency audits for Council buildings and facilities to identify opportunities for improvement, such as:
  - Install taps and appliances with the highest efficiency ratings in Council buildings and facilities.
  - Install rainwater tanks and connect to indoor water appliances (toilet facilities, hot water service, laundry taps) in Council-owned buildings where practical and where it can cater for the water use demand.
- Improve Council's water cycle management through the use of technology, behavior change programs, effective policy and procedures.
- Use Water Sensitive Urban Design techniques to support a water sensitive city such as in Council buildings and capital works, where practicable, such as:
  - Permeable paving for footpath and trafficable surface replacement works
  - Raingardens/tree water wells installed around trees in streets and open spaces
  - Stormwater harvesting, such as rainwater tanks.
- Utilise new industry standard maintenance guidelines for WSUD assets.
- Report annually on Council's water consumption and sustainability performance to elected member body and provide such information on Council's website.



## 2. Maintain green spaces and cool places

### Actions:

**The City of West Torrens will create green spaces and cool places for our community by the following actions:**

- Irrigate Council's open spaces within the efficiency bounds defined by IPOS.
- Seek opportunities to install irrigation systems that are IPOS compliant for new irrigated open space areas.
- Install water data loggers to monitor water use which will help ensure irrigation is undertaken in an effective and efficient manner to maintain green and cool open spaces.
- Expand the scale and scope of green and cool streetscapes throughout West Torrens.
- Design streetscapes to maximise opportunities for greening.
- Effectively engage with the community to gain their support for the greening and cooling of streetscapes.
- Continue to sustain healthier streetscapes and green spaces:
  - Increase mulching around street trees
  - Install tree water wells and raingardens to maximise passive irrigation
  - Seek opportunities to create permeable footpaths.



### 3. Mitigate flooding

#### Actions:

**The City of West Torrens will mitigate flooding within our community by the following actions:**

- Implement the upcoming Council-wide Stormwater Management Plan for Local Drainage.
- Continue collaborative arrangements with other local catchment councils to coordinate flood mitigation outcomes, such as the Brown Hill Keswick Creek Stormwater Management Plan, and planning for stormwater management for the Lower Sturt catchment.
- Provide infrastructure and ongoing maintenance appropriate for long-term stormwater and flood management.
- Reduce risk of flooding through stormwater management planning and infrastructure which ensures post development flows equal or improve on pre development flows.
- Research the level of compliance of new residential developments with required stormwater management measures (i.e. rain water tanks and plumbing connections) to increase community flood protection.
- Build and maintain Council's internal capacity (technical expertise, resource allocation, operational processes/guidelines etc.) to effectively plan, design, construct, maintain, and renew existing and new WSUD infrastructure for sustained performance and beneficial outcomes.



#### 4. Protect our waterways and natural environment

**Actions:**

**The City of West Torrens will support the health of our waterways and natural environment through the following actions:**

- Support climate resilient streetscapes and open spaces by planting species suitable to local conditions.
- Develop water sensitive streetscapes and open spaces, such as installing WSUD.
- Seek opportunities to capture and use stormwater to protect and enhance biodiversity and the health of the natural environment.
- Create streetscapes and open spaces that respond to the passive use of stormwater as well as the active use of stormwater through harvesting techniques.





## 5. Support community wellbeing

### Actions:

**The City of West Torrens will support the wellbeing of our community through the following actions:**

- Continue to offer the community Council's rainwater tank and raingarden rebate program to encourage water conservation, as well stormwater or grey water treatment and reuse.
- Engage effectively with households and businesses in West Torrens to encourage water-sensitive behaviour and practices in the community.
- Educate and engage the tenants of City of West Torrens owned buildings and facilities on water-sensitive behaviour and practices.
- Promote and encourage the community to apply water sensitive urban design techniques.
- Seek opportunities to use temperature sensors across West Torrens to promote cool spaces for the community to visit during hot weather.





## Conclusion

Through the use of an integrated approach to water management it is possible to implement solutions that have multiple benefits throughout the water cycle.

A set of objectives and actions have been developed to help achieve integrated water management and the ultimate vision as a water sensitive and climate resilient city.

Throughout the life of this Action Plan, Council will increase its portfolio of alternative water supplies and increase its efficiency. It will encourage the use of water planning in local developments and continue to promote and adopt water sensitive urban design and sustainable stormwater solutions.

While the actions in this plan will be tracked and evaluated annually, the entire plan will be reviewed in 2027 to evaluate all actions undertaken and their effectiveness.

## Implementation, monitoring and reporting

Progress on delivering the Action Plan will be reported on regularly through the Strategy department, such as via departmental Activity Reports and annual reporting mechanisms.

## References

<https://www.environment.sa.gov.au/topics/climate-change/climate-change-action-plan-2021-2025>

<https://www.climatecouncil.org.au/resources/water-security-report/>

<https://www.unwater.org/publications/un-world-water-development-report-2021/>

<https://www.climatechangeinaustralia.gov.au/en/changing-climate/state-climate-statements/south-australia/>