

CITY OF MELTON

INTEGRATED WATER MANAGEMENT PLAN

2018-2028



DEFINITIONS AND ABBREVIATIONS

DELWP	Department of Environment, Land, Water and Planning
Fit for purpose water	A quality of water that is appropriate for the purpose for which it is intended to be used
Gigalitre (GL)	One thousand (1,000) megalitres
Integrated water management (IWM)	An approach to water management that considers all elements of the water cycle together rather than their individual parts in isolation
LGA	Local Government Area
Megalitre (ML)	One million (1,000,000) litres
MERI	Monitoring, evaluation, reporting and improvement
MUSIC model	Model for Urban Stormwater Improvement Conceptualisation
Precinct Structure Plan (PSP)	A long-term plan for urban development prepared by the Victorian Planning Authority that describes how the land is expected to be developed, and how and where services are planned to support development
Water sensitive urban design (WSUD)	A design approach which integrates the urban water cycle, including stormwater, groundwater and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal

Acknowledgement of Country

Melton City Council acknowledges local Aboriginal Australians, recognising the people of the Kulin Nation as the original custodians of the land now known as City of Melton. On behalf of the municipality, Council pays respect to their Elders, past, present and future.

This Plan was developed by Alluvium Consulting Australia for Melton City Council and made possible by financial assistance from the Victorian Government through the Melbourne Water Corporation as part of the Living Rivers Stormwater Program.



Acknowledgements

We would like to acknowledge and thank all those who attended consultation and workshop activities that were critical in developing this plan.

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It is with pleasure that I introduce Melton City Council's Integrated Water Management Plan 2018-2028 which outlines the municipality's transition to a water sensitive city.

A water sensitive city is one that is liveable, resilient and sustainable. It is one which delivers safe and reliable water to all, now and in the future, while providing healthy and cool landscapes.

As a growing municipality, Melton City Council understands that urbanisation will increase the pressure on our water resources, with water scarcity and pollution posing the greatest risks. The Plan aims to anticipate and respond to these challenges.

The Integrated Water Management Plan seeks to achieve the objectives of:

- Reduced reliance on potable water
- Healthy waterways and wetlands, and
- Valued landscapes that are connected and accessible.

To achieve these, we will need to work with all levels of government, industry, community groups and residents.

The Integrated Water Management Plan includes an action plan that will assist Council in achieving its objectives and targets, and ultimately in transitioning to a water sensitive city.

I would like to take this opportunity to thank everyone that participated in the development of the plan through attending workshops or providing input. We look forward to working together over the next 10 years to deliver on our water management objectives.



Cr Bob Turner
Mayor, City of Melton

I am happy to present to you the City of Melton Integrated Water Management Plan 2018-2028. This Plan recognises the role of water in providing a liveable and resilient city.

In coming years, climate change and urban development will alter the way water flows through the municipality. This Plan sets targets and objectives to assist in managing these impacts to protect the health of our ecosystems, the prosperity of our communities and the liveability of our City using an integrated water management approach.

Integrated Water Management brings together all the elements of the water cycle, including rainfall, stormwater and wastewater to achieve the greatest social, environmental and economic outcomes. The action plan considers projects that will assist Council in reducing its reliance on potable water, protecting and enhancing its waterways and wetlands and supporting a water-wise community.

The Plan is designed to bring together departments from within Council to improve collaboration on water related projects, as well as supporting stronger links between Council, community and external stakeholders.

In developing the Plan, we have consulted broadly within the organisation as well as with external stakeholders including residents, industry and water management authorities. As a result, the Plan reflects the needs of Council and its community, and provides a roadmap for transitioning to a water sensitive city together.

Over the next decade, our attention will be on the implementation of the Plan. We will seek to work with community and other stakeholders including government and non-government organisations. Through an integrated approach to water management, together we can achieve the right balance of water to be a liveable, resilient and sustainable city.



Kelvin Tori
Chief Executive Officer, Melton City Council

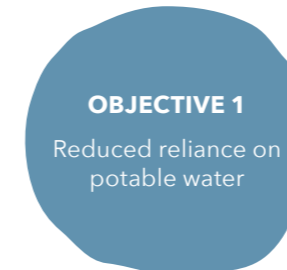
Water is critical for the liveability of our City, the health of our ecosystems and the prosperity of our communities.

Integrated Water Management (IWM) brings together all elements of the water cycle to achieve the greatest social, economic and environmental benefits for the community. An IWM approach ensures that the water cycle is more resilient to the impacts of climate change and a growing population while continuing to make the City of Melton a great place to live, work and recreate.

Vision
 Melton City Council uses and manages water sustainably to enhance urban and natural environments and support community health and wellbeing.

AIM

The aim of this plan is to guide the City of Melton towards becoming a Water Sensitive City in the context of significant population growth, urbanisation and climate change. It sets out targets and actions for the period 2018-2028 to assist Melton City Council in achieving the vision.



OBJECTIVE 1
 Reduced reliance on potable water

OUTCOMES

- Effective and efficient use of all water sources across Council assets
- Increase use of non-potable water sources



OBJECTIVE 2
 Healthy waterways and wetlands

OUTCOMES

- Ecological and habitat values within the City of Melton's waterways improve over time
- Stormwater drainage and WSUD assets are resilient and effective



OBJECTIVE 3
 Valued landscapes that are connected and accessible

OUTCOMES

- Maximise connections between the community, waterways and open spaces
- Reduced urban heat island effect across the City of Melton
- An informed and water-wise community

WATER CYCLE CHANGES BY 2040

- Population growth, urbanisation and climate change within the City of Melton will significantly alter the water cycle so that by 2040:
- The urbanised area will grow from 13% to 38% of the local government area (LGA).
 - An additional 33 GL of stormwater will be generated within the LGA each year.
 - Potable water consumed by community and businesses will triple, from 10 GL/year to 30 GL/year.
 - Council's potable water consumption will grow from 200 ML/year to 600 ML/year.
 - Wastewater generated will grow from about 8.3 GL/year to 24.6 GL/year for treatment and disposal, or potentially reuse.
 - Under a medium climate change scenario, the majority of Victoria will experience higher average temperatures (estimated to be +2.3°C by 2065), a decline in rainfall (-4.7% by 2065) and an increase in evapotranspiration (+7.4% by 2065). These conditions will combine to reduce runoff in the Werribee River basin by 18% by 2065 (DEWLP, 2016).

APPROACH TO IMPLEMENTATION

Council interacts with the water cycle both directly through the management of public assets, as well as indirectly through working with community and other stakeholders including government and non-government organisations. Achieving the objectives in the plan will require direct action as well as advocacy approaches and collaboration with stakeholders such as other tiers of government, water corporations, neighbouring councils, and the community. This plan is designed to bring together departments within Council to improve collaboration on water related projects as well as supporting stronger links between Council, community and external stakeholders.

TARGETS

- The IWM Plan identifies the following targets for Council to meet by 2028:
- A reduction in potable water use of **90 ML/year** through water use efficiency
 - 23 ML/year** of irrigation demand met from non-potable water sources (including stormwater and recycled water)
 - 214 kg/year** nitrogen reduction from existing urban stormwater via implementation of water sensitive urban design (WSUD)
 - An additional **10 tonnes/year** of litter through the application of WSUD and gross pollutant traps.

MONITORING PROGRESS

The plan will be monitored annually to ensure that the priorities remain correct and emerging opportunities for delivery and management are integrated as appropriate. Progress towards the vision and delivery of the targets will be reported on annually.

The protection and efficient management of our water resources is critical to the liveability and prosperity of our community. Achieving the right balance of water to meet our needs and the environment's needs will ensure the City of Melton's landscapes are resilient to population growth, urbanisation and climate change.

WHAT IS A WATER SENSITIVE CITY?

Integrated water management (IWM) is a planning approach that brings together all elements of the water cycle and land use planning to achieve optimal social, economic and environmental outcomes. It considers land use planning and water together to ensure that the challenges of population growth and an uncertain climate can be addressed while continuing to make the City of Melton a great place to live, work and recreate.

- To provide the context for the IWM Plan, it is useful to understand the term 'Water Sensitive City'. This term is described by the Co-operative Research Centre for Water Sensitive Cities as a city that:
- Is a potential water supply catchment, providing a range of water sources at different scales for different uses,
 - Provides ecosystem services and a healthy natural environment with social, ecological, and economic benefits, and
 - Has a community whose citizens have knowledge and a desire to make wise choices about water and become actively engaged in decision-making.

The development of this IWM Plan and the concept of the Water Sensitive City are intrinsically linked. The journey toward becoming a Water Sensitive City is defined by the six states of 'transition' (Figure 1). The early phases reflect the historical and engineering driven development of cities from water supply and wastewater management through to traditional drainage infrastructure. As understanding of the environment has grown, cities like Melbourne have legislated to protect waterways and installed water sensitive urban design (WSUD), becoming Waterways Cities.

This continuum places Melton City Council's approach to IWM within a broader context, and by developing an IWM Plan with clear goals and targets, the City of Melton can continue its evolution toward becoming a Water Sensitive City.

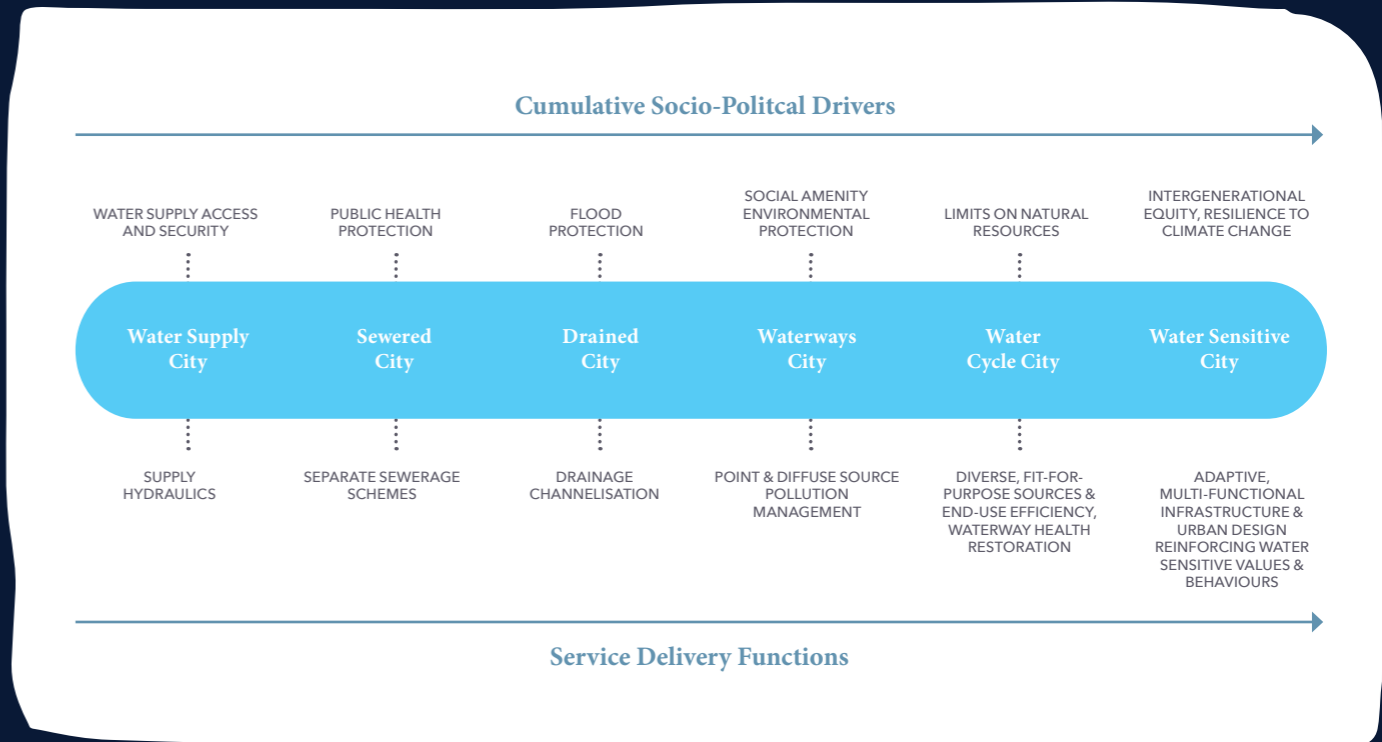


Figure 1. Urban Water Transitions Framework (Brown, 2009)

CITY OF MELTON AS A WATER SENSITIVE CITY

Water-wise community

A shared understanding of the need for considered use of potable water, and appreciation and protection of our waterways

Resilience to climate change

Mitigation of urban heat island effect through healthier, greener urban spaces and increased tree canopy; improved flood management; reduced demand on potable water in low rainfall due to access to alternate supplies

Increased biodiversity and ecological values

Increased habitat through healthy natural and constructed waterways and wetlands, and increased streetscape and urban vegetation

High quality public spaces

Constructed wetlands, raingardens, passive irrigation systems, increased tree canopy and efficient irrigation systems for improved public amenity

Reduced waterway pollution

Water sensitive urban design (WSUD) measures for reduced stormwater pollution flowing into our waterways

Financial savings and avoided costs

Savings on water utility costs and drinking water infrastructure upgrades through reduced potable water consumption and the use of 'fit-for-purpose' water

Water sensitive built environment

Buildings that include water efficient fittings, fixtures and whitegoods, raingardens, rainwater tanks, permeable surfaces and stormwater infiltration

Improved community health and wellbeing

Cool, green streets, parks, and open spaces encourage community participation and interaction with our natural spaces for improved mental and physical health

CITY OF MELTON'S WATER FUTURE

The aim of this plan is to guide the City of Melton towards becoming a Water Sensitive City in the context of significant population growth, urbanisation and climate change. A schematic summary of the modelled changes in flows between the baseline year (2016) and 2040 is provided on page 12. In summary, by 2040:

- As City of Melton's population grows, the urbanised area will increase from 13% to 38% of the local government area (LGA).
- This change in land use will generate an additional 33 GL of stormwater each year.
- Potable water consumed by the community and businesses within the City of Melton will triple, from 10 GL/year to 30 GL/year.
- Council's potable water consumption will grow from 200 ML/year to 600 ML/year, most of which is on sports fields and open spaces (73%), and within buildings (13%).
- Wastewater generated will increase from about 8.3 GL/year to 24.6 GL/year for treatment and disposal, or potentially reuse.
- Under a medium climate change scenario, the majority of Victoria will experience higher average temperatures (estimated to be +2.3°C by 2065), a decline in rainfall (-4.7% by 2065) and an increase in evapotranspiration (+7.4% by 2065). These conditions will combine to reduce runoff in the Werribee River basin by 18% by 2065 (DEWLP, 2016).

To manage these changes, the IWM Plan focusses on Council's primary areas of responsibility while recognising the scope for influence and advocacy with stakeholders. Figure 2 summarises Council's primary responsibilities and their links to IWM. Important areas of advocacy include working with the State Government and water corporations on the provision of recycled water and with Melbourne Water on the health of waterways within the City of Melton.

Figure 3 illustrates further opportunities for advocacy and collaboration with key stakeholders.



CATEGORY	ROLE AND TASK	POTENTIAL LINK TO INTEGRATED WATER MANAGEMENT
Planning	Land use planning Conservation and land management	<ul style="list-style-type: none"> • Drainage • Waterways and water sensitive urban design (WSUD) in new developments • Existing waterway, wetland and WSUD maintenance and rehabilitation
Recreation and culture	Sport and recreation facilities Parks, gardens and reserves	<ul style="list-style-type: none"> • Greening and irrigation of open spaces • Alternative water supply • Connectivity and shared pathways
Environmental education	Supporting community groups in protecting and enhancing the environment Engaging and educating the community around environmental issues	<ul style="list-style-type: none"> • Waterway rehabilitation and revitalisation (through planting days, clean-up days) • Creating a water-wise community
Waste management	Collecting, reusing, recycling and disposing of waste Regulation of litter	<ul style="list-style-type: none"> • Waterway amenity (i.e. keeping litter from reaching waterways)
Building	Environmental specifications for new assets and renewals	<ul style="list-style-type: none"> • Water use efficiency • Alternative water sources • WSUD
Roads	Construction and maintenance of local roads	<ul style="list-style-type: none"> • Incorporation of WSUD and street trees (as part of traditional capital works)

Figure 2. Council's role in integrated water management

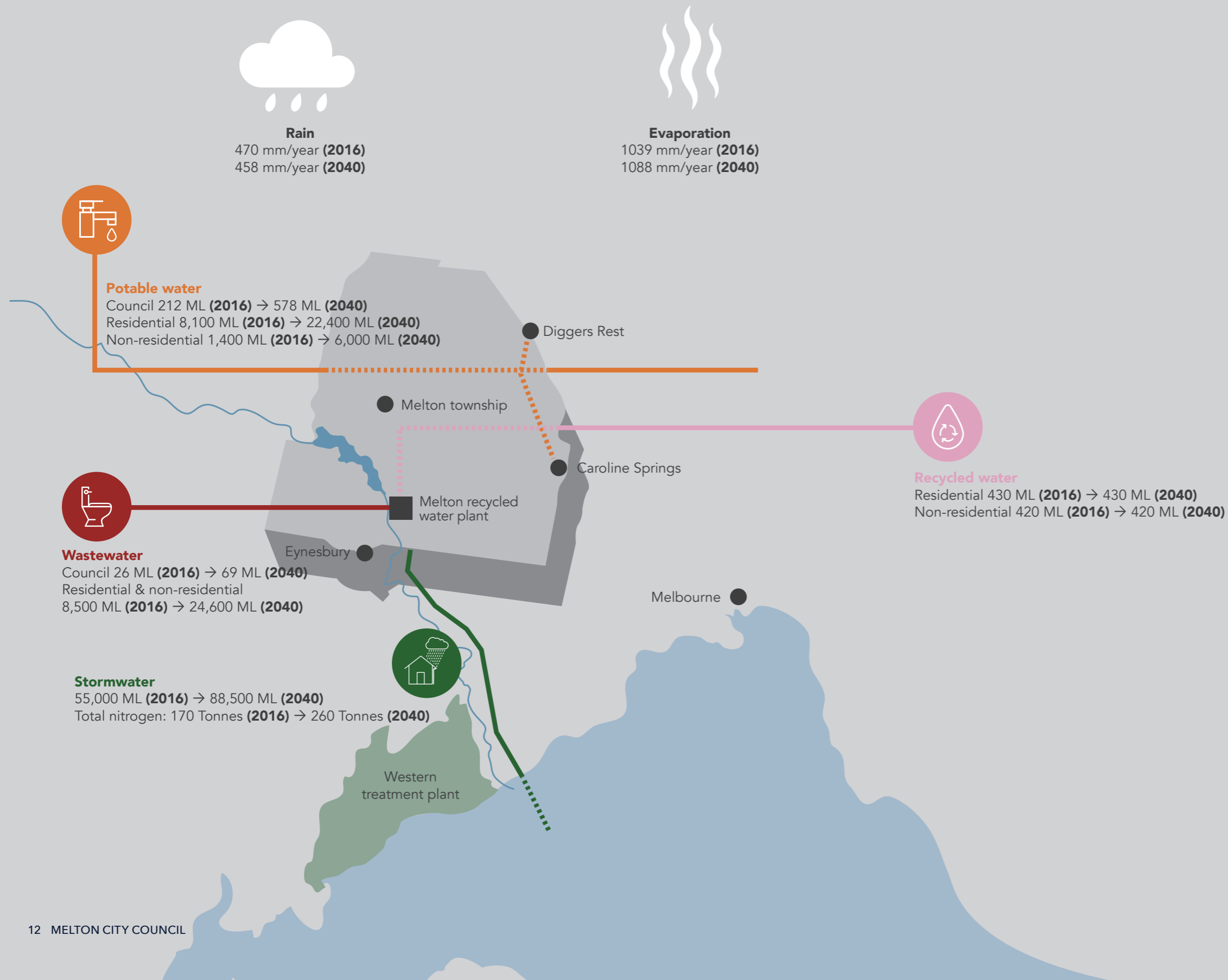
STAKEHOLDER	AREA OF RESPONSIBILITY	POTENTIAL AREA OF ADVOCACY AND COLLABORATION
Melbourne Water	Flood management (including waterways and retarding basins) Waterway health Stormwater quality Drainage schemes and larger drainage infrastructure	<ul style="list-style-type: none"> Waterway health, restoration and rehabilitation Design and implementation of surface water management assets (including wetlands) Community education and engagement Funding (e.g. Living Rivers fund)
Water corporations (City West Water / Western Water)	Potable water provision Sewage collection, conveyance and treatment Recycled water	<ul style="list-style-type: none"> Recycled water and other alternative water source provision Approving integrated water management plans for new developments Innovation and R&D in servicing of growth areas Sewage resource management and recovery
DELWP	Regulation and policy Facilitation of the Werribee IWM Forums and Working Group	<ul style="list-style-type: none"> Provision of recycled water to the west Expanded implementation of Clause 56 Implementing Greening the West
Southern Rural Water	Groundwater management Surface water extractions	<ul style="list-style-type: none"> Groundwater use
Land development industry	Environmental specifications for new assets and renewals	<ul style="list-style-type: none"> Alternative water sources Water sensitive urban design Open space provision
Victorian Planning Authority	Land use planning Preparation and approval of precinct structure plans	<ul style="list-style-type: none"> Consideration of IWM elements in planning Timing of consultation and inclusion of water sensitive assets in precinct structure plans
Neighbouring Councils and Community	Stormwater quality entering the municipality Open space management Land use planning	<ul style="list-style-type: none"> Peer to peer learning (re: water sensitive assets and design)
Traditional Owner groups	Communicating aboriginal water values Cultural and heritage approvals Interpreting landscapes for developers	<ul style="list-style-type: none"> Advice on water planning and management Communicating aboriginal water values Access to water for economic development and capacity

Figure 3. Key stakeholder advocacy and collaboration map

Integrated water management brings together all elements of the water cycle to achieve the greatest social, economic and environmental benefits for the community.



Water balance summary 2016 / 2040



POLICY DRIVERS

There are three policy drivers that support the implementation of the IWM Plan. First, the Victorian Government's *Water for Victoria* (2016), and particularly Chapter 5: *Water's role in resilient and liveable cities and towns*, highlights five outcomes that this IWM Plan is aligned to (see below).



Safe, secure and affordable supplies in an uncertain future

- A diverse range of water supplies and sources
- Water quality meets regulatory standards and community expectations
- Manage water efficiency and demand
- Secure water supply for Victorian industry and the economy
- Water available to maintain valued green community assets including for climate change



Effective and affordable wastewater systems

- Meets public health and environmental standards
- Effective sewerage systems
- Optimised onsite domestic wastewater
- Maximise waste-to-resource opportunities



Effective stormwater management protects our urban environment

- Waterway health is maintained and improved
- Community and property resilient to local flood risk
- Appropriate levels of flood protection in new development



Healthy and valued urban landscapes

- Water is prominent in the urban landscape
- Urban landscape retain moisture for cooler, greener cities and towns
- Waterways accessible as valuable open spaces
- Aboriginal cultural values associated with waterways are protected



Community values reflected in place based planning

- Diverse urban landscapes that reflect local conditions and community values
- Empowered engagement community
- Local water related risks and issues understood and managed

LINKS WITH COUNCIL AND WELLBEING PLAN 2017-2021

Secondly, the *Council and Wellbeing Plan 2017-2021* highlights Council's commitment to 'promoting, improving and protecting public health and wellbeing'. This plan also identifies specific themes. Themes 2 and 3 and their respective outcomes and objectives are well-aligned with the objectives of the IWM Plan as set out in the table below.

THEME	OUTCOME	OBJECTIVES
A thriving and resilient natural environment	A City that preserves and enhances its natural environment for future generations	<ul style="list-style-type: none"> • A resource efficient City • A City with healthy waterways, biodiversity and ecosystems • An environmentally aware community
A well planned and built City	A City with a clear vision to manage growth in a sustainable and accessible way	<ul style="list-style-type: none"> • A City that strategically plans for growth and development • Public spaces that are vibrant and engaging places for all

LINKS WITH ENVIRONMENT PLAN 2017-2027

Finally, the City of Melton's first Environment Plan sets out Council's responsibilities across three themes, the Built Environment, Natural Environment, and Resource Use. There are a number of actions within the Environment Plan that align with the targets and actions in the IWM Plan and these are set out in the table below.

Theme	1. Built Environment	2. Natural Environment	3. Resource Use
Council responsibilities	<ul style="list-style-type: none"> • Roads and drainage • Public realm • Parks and open space • Planning and land use 	<ul style="list-style-type: none"> • Biodiversity • Ecosystems • Waterways 	<ul style="list-style-type: none"> • Water use • Efficiency • Planning and land use
Objectives	1.2.1 Design and build future Council infrastructure along ESD principles 1.2.2 Design and build future Council infrastructure along WSUD principles	2.3.1 Improve management and monitoring of waterway health 2.3.2 Improve the quality of stormwater entering waterways 2.3.3 Increase community appreciation of waterways for improved stewardship	3.1 Best practice water reduction and water reuse principles are included in all Council's corporate and operational functions
	1.3.1 Ensure the environment is protected during the construction phase of development	2.4.1 Continue to support local landholders as primary agents in managing rural land	3.1.1 Reduce potable water use and increase water use from alternative water sources in Council operations
	1.4.1 Demonstrate practices that encourage sustainable urban development 1.4.2 Develop partnerships and advocate where possible to improve urban sustainability outcomes	2.5.1/2.5.2 Increase staff and local knowledge and appreciation of the City of Melton's unique biodiversity and ecosystems 2.5.3 Continue to support local environment groups, including Friend of and Landcare groups	3.1.1 a. Develop an Integrated Water Management Plan

WHAT HAVE WE DONE TO DATE

Over recent years Melton City Council has invested in projects that directly or indirectly support improved integrated water management outcomes. The table below summarises a selection of these initiatives:

INITIATIVES	OUTCOMES
Strategy	<ul style="list-style-type: none"> • Council and Wellbeing Plan 2017-2021 • Environment Plan 2017-2027 • Open Space Strategy 2016-2026 • Western Plains North Green Wedge Management Plan 2014 • Waste Management Strategy 2011-2015
Physical assets	<ul style="list-style-type: none"> • 600+ WSUD assets constructed and/or maintained • 24 rainwater tanks installed across 20 Council sites • 2 stormwater harvesting schemes • Sports ovals connected to the Class A/B recycled water network
Programs and projects	<ul style="list-style-type: none"> • Water audits undertaken in 13 high water use buildings • Planet Footprint Data Management system used to monitor water usage • Melton Botanic Garden Trail completed • Ryans Creek Rehabilitation project completed • Lake Caroline and Toolern Vale Stormwater Harvesting projects
Stakeholder engagement	<ul style="list-style-type: none"> • Community groups supported in rehabilitation works near waterways through providing grants and advice • Community engagement with our waterways supported through Environmental Grants Program • Involvement in DELWP's IWM Forums and Working Group
Investigations and studies	<ul style="list-style-type: none"> • WSUD Options Assessment - Toolern Creek and Tributaries 2014 • Werribee River Whole of Water Cycle Management Report 2014 (Southern Rural Water) • Melton and Wyndham North Integrated Water Management Analysis Report 2015 (Western Water)
Guidelines and standards	<ul style="list-style-type: none"> • City of Melton WSUD Guidelines



VISION

Melton City Council uses and manages water sustainably to enhance urban and natural assets and support community health and wellbeing.



Objective 1
Reduced reliance on potable water

The vision and objectives for this plan have been developed through a consultation process with the aim of articulating Council’s aspirations for water and how it will shape the City into the future.

OBJECTIVES

This plan has three objectives. The following table summarises where we are now in relation to those objectives, and where we want to be.

WHERE WE ARE NOW

Council requires a certain amount of water to provide services to the community and maintain healthy public spaces. Access to water is finite and Council needs to make the best use of all sources of water including potable, rainwater, stormwater and recycled waste water. In 2015, Council’s water usage was 212/ML, with 13% used in buildings and 73% used to irrigate parks and open spaces. This water demand will continue to increase as more buildings and open spaces come online to service the City of Melton’s growing community. Council will need to diversify its water supply to future-proof its assets and service delivery.

WHERE WE WANT TO BE

Melton City Council aims to reduce demand on potable water and increase use of non-potable water sources to enable the City to cope with future stressors such as climate change and urbanisation while providing high quality spaces for the community.

Water efficiency will be achieved through infrastructure improvements in buildings and irrigation systems, as well as through improved management of service levels and consumption. In addition, Council will diversify its water supply by exploring non-potable water options such as recycled water and stormwater harvesting to provide a secure, flexible water supply for a growing population in a changing climate.

Objective 2
Healthy waterways and wetlands

WHERE WE ARE NOW

Multiple waterways flow through the City of Melton including two of the major waterways in western Melbourne, the Werribee River and Kororoit Creek. The condition of the waterways in the City range from good condition, to highly degraded waterways that have been significantly modified. Melbourne Water is the responsible authority for waterways in the City, however Melton City Council has influence over their condition through the construction and maintenance of WSUD assets, litter management and waterway rehabilitation works.

WHERE WE WANT TO BE

Melton City Council aims to improve ecological and habitat values within the City’s waterways over time and ensure stormwater drainage and WSUD assets are resilient and effective.

Council will address threats to local waterways by continuing to install WSUD assets where required and ensuring existing assets are functioning effectively. Council will continue to rehabilitate waterways to provide channel stabilisation and habitat for improved biodiversity outcomes. Council will also continue to advocate for local water issues.

Objective 3
Valued landscapes that are connected and accessible

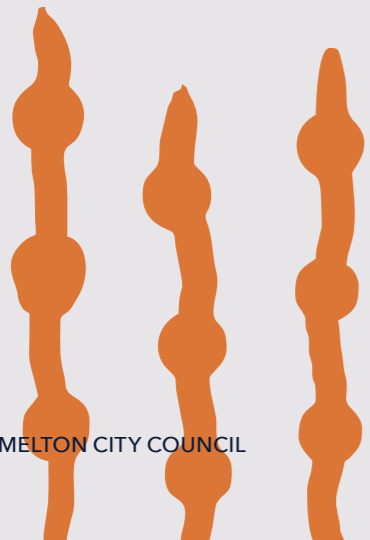
WHERE WE ARE NOW

The City of Melton’s parks, open spaces and waterways provide spaces for enjoyment, connection and recreation for its residents. Although Council has invested in improving shared paths that connect waterways and open spaces, as well as rehabilitating sections of its waterways to enhance these values, Melbourne Water currently ranks amenity, community connection and recreation from low to moderate for the Werribee Catchment, of which City of Melton is a part.

WHERE WE WANT TO BE

Melton City Council aims to maximise connections between the community, waterways and open spaces, reduce urban heat island effect, and support an informed and water-wise community.

As climate change causes rising temperatures, access to high quality open spaces will become increasingly important as refuges for residents. Council will endeavour to retain water in its landscapes to provide cool spaces for the community and to increase urban tree canopy where possible. Council will support residents in engaging with local waterways and wetlands through providing education and opportunities to participate in waterway improvement.



OBJECTIVES AND OUTCOMES

OBJECTIVE 1

Reduced reliance on potable water

OUTCOMES

Effective and efficient use of all water sources across Council assets

Increase use of non-potable water sources

OBJECTIVE 2

Healthy waterways and wetlands

OUTCOMES

Ecological and habitat values within the City of Melton's waterways improve over time

Stormwater drainage and WSUD assets are resilient and effective

OBJECTIVE 3

Valued landscapes that are connected and accessible

OUTCOMES

Maximise connections between the community, waterways and open spaces

Reduced urban heat island effect across the City of Melton

An informed and water-wise community

The table above illustrates the objectives and outcomes of the Plan.

The objectives and their related outcomes are the distillation of feedback received throughout the consultation process with internal and external stakeholders. The outcomes were separated into intermediate and longer-term, with the latter providing context for the plan's objectives. Actions were then defined to achieve both intermediate and longer-term outcomes.

The objectives and their related outcomes are the distillation of feedback received throughout the consultation process with internal and external stakeholders.



Targets allow Council to measure progress towards its vision, objectives and outcomes.

The targets have been developed based on a range of inputs including the water and pollutant load analysis, analysis of what is economically feasible, and an understanding of best practice requirements.



TARGETS

Objective 1
Reduced reliance on potable water

		TIMING	DESCRIPTION
TARGET 1.1	Reduce irrigation rates on all open spaces and sportsgrounds by 10%	2024	Reduction in irrigation rate from an average of 5.0 ML/ha/year to 4.5 ML/ha/year
TARGET 1.2	All sportsgrounds have a defined turf quality standard. Irrigation is managed on a ground by ground basis to meet this standard	2020	Irrigation management to reduce irrigation rate from 4.5 ML/ha/year to between 4.5 and 3.5 ML/ha/year
TARGET 1.3	23 ML/year (or 8%) of projected irrigation demand (passive and active open spaces) met with non-potable water sources. This includes 5 ML/year for passive open spaces	2028	Approximately 8% of total projected demand for open space as at 2028 (287 ML/year) met from any non-potable water source
TARGET 1.4	15 priority Council buildings reduce their potable water use to 0.53 kL/m²/year . Melton Waves reduces water use by 5% compared to 2016	2024	Being equivalent to a 4-star NABERS rating (based on a comparison of current water use and industry benchmark)
TARGET 1.5	All new Council buildings consume 0.35 kL/m² or less (not including aquatic centres)	2020	Being equivalent to a 5-star NABERS rating

Objective 2

Healthy waterways and wetlands

		TIMING	DESCRIPTION
TARGET 2.1	214 kg/year additional reduction in Total Nitrogen via new WSUD assets. Ensure best practice reductions are achieved in greenfield developments	2028	Reduction measured based on MUSIC modelling
TARGET 2.2	Remove an additional 10 tonnes per year of litter from established area catchments	2028	Through the addition of GPTs, water sensitive urban design and community education
TARGET 2.3	All priority WSUD assets are functioning according to design	2022	Number of priority assets determined by WSUD audit
TARGET 2.4	All new WSUD assets are designed and constructed according to Melton City Council's WSUD guidelines and specification	2020	Determined by asset design audit

Objective 3

Valued landscapes that are connected and accessible

		TIMING	DESCRIPTION
TARGET 3.1	Undertake a street tree passive irrigation trial to build internal capacity, understand budget and to guide the land development industry	2019	To support the targets of the Street Tree Strategy and to improve the irrigation of Council and developer planted street trees.
TARGET 3.2	Naturalise Arnolds Creek East	2024	Converting an artificial channel into a natural waterway with ecological value.
TARGET 3.3	Rehabilitate 2km of urban waterway every two years	2018 - 2028	Improve the condition of degraded waterway through revegetation and rehabilitation works.
TARGET 3.4	Implement 1 project per year in established urban areas that educates the community by linking stormwater quality to waterway health	2018 - 2028	Examples include installing signage on stormwater pits, images on street cleaning vehicles, information regarding WSUD asset function.
TARGET 3.5	Implement 4 projects per year for community participation on waterways and health	2018 - 2028	Examples include planting days, clean-up days, engaging school groups in planting and education.



WATER IS CRITICAL FOR THE LIVEABILITY OF OUR CITY, THE HEALTH OF OUR ECOSYSTEMS AND THE PROSPERITY OF OUR COMMUNITIES.

The Monitoring, Evaluation, Reporting and Improvement (MERI) framework is designed to support Melton City Council in monitoring the progress of the IWM Plan, providing a basis for learning, improvement and accountability.

The MERI framework supports the development of metrics to monitor and assess progress over time to understand the effectiveness, efficiency and appropriateness of actions and how these actions impact outcomes, objectives or targets.

Actions can lead to biophysical, institutional and economic outcomes. The MERI framework supports and informs the action plan, setting out that level at which targets are set and how they should be monitored and reported on.

MONITORING AND REPORTING ON THE IWM PLAN WILL COMPRISE:

1. Annual reporting on the actions and targets to an Implementation Working Group to monitor progress towards the objectives.
2. Review of the action plan every two years, with changes made as appropriate, to allow Council to revisit emerging trends and changing priorities, and to enable adaptation to new policy positions at the state or national level.
3. Review and update (if required) of the plan at 5 years.
4. Fully reviewed at nine years. New plan to be developed by ten years (2028).
5. Public reporting on progress towards targets through an annual State of the Environment report by 2020.

The action plan provides the detail to work towards achieving the objectives and vision.



5.1 Action Plan

Reduced reliance on potable water

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
1A	Improve open space irrigation efficiency	Audit irrigation approaches, infrastructure and control systems across Melton City Council, prioritising high water consuming open spaces	Operations	S	2019	High	<p>Prioritise open spaces based on audit results that include water consumption, age and performance of irrigation and community use.</p> <p>Water efficiency actions include review of irrigation infrastructure, and controls. It may also include capacity building internally to operate new systems.</p> <p>Council needs to determine preferred approach to irrigation and inform contractors as part of works specifications.</p>	1.1
		Identify gaps in irrigation data (particularly for high water using spaces). Install additional monitoring and metering to ensure consumption can be tracked		S				
		<p>Prioritise open spaces and efficiency actions across all active and irrigated passive open spaces. For high priority spaces:</p> <ul style="list-style-type: none"> Undertake a cost / water saving comparison for efficiency options Implement options according to return on investment Inform Western Water of priorities and identify opportunities for recycled water supply to those spaces 		S				
		<p>Undertake audit of sportsgrounds to identify opportunities for the conversion of sportsfields to warm season grasses.</p> <ul style="list-style-type: none"> Implement conversions according to estimates of water saved All new sportsgrounds to be planted with warm season grasses. This requirement should be reflected in IWM Plans for new developments, PSP specifications and public realm guidelines 		S				
		Identify and specify preferred irrigation infrastructure for new and upgraded open spaces. This requirement should be reflected in IWM Plans for new developments, PSP specifications and public realm guidelines.	Capital Projects; City Design, Strategy and Environment	S				
1B	Undertake water efficiency audits in Council buildings	Undertake a water efficiency audit for Council's 15 highest water using buildings (including Melton Waves)	Operations	S	2019	High	Priorities have been estimated based on water consumption and building age. Recent upgrades to Melton Waves have realised water savings described as 'low hanging fruit'. This audit will focus on accounting for losses (e.g. leaks).	1.1
1C	Implement water efficiency measures for existing and new buildings	Implement water efficiency and fixture upgrades based on the relative return on investment and volume of water saved as identified during audits under Action 1B	Operations	S	2028	Medium	<p>The aim is for the audit to identify water savings to meet the target of 0.53 kL/m².</p> <p>New building specifications should include a requirement for 5-star NABERS water consumption rates (equivalent to 0.35 kL/m²).</p>	1.4
		Define water efficiency requirements for new buildings and incorporate that into Council policy and building specifications	City Design, Strategy and Environment;	E				
		Establish or adopt water use efficiency requirements for any new water-based recreation centres based on industry best practice	Capital Projects	E				

5.1 Action Plan

Reduced reliance on potable water cont.

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
1D	Advocate for the extension of recycled water network across Melton City Council	Use the IWM Forum process facilitated by DELWP to advocate for the extension of both the Class A and Class B/C network to high priority locations. Advocacy will be directed at DELWP, the State Government, Western Water, City West Water and the land development industry	City Design, Strategy and Environment	E	2018 to 2028	High	Engage with external stakeholders to gauge their interest in advocacy for recycled water including the land development industry, the Victorian Farmers Federation, surrounding Councils and rural land owners. There may be potential for another entity (e.g. City West Water), to implement a scheme beyond their business boundary.	1.3
1E	Investigate use of non-potable water for irrigation	High level feasibility assessment for non-potable water sources for district active open space and regional passive space Prioritise alternative water supply opportunities for further design and construction Design and construct alternative water supply projects	Engineering Services	S E S	2028	High	The target is not tied to one or other non-potable water source. This will depend upon the comparison of cost between recycled water, harvesting stormwater and perhaps larger scale rainwater harvesting. It will also depend upon the availability of recycled water.	1.3



Community group Utsav Malayalee Samaj planting trees at Kororoit Creek.

5.1 Action Plan

Objective 2: Healthy waterways and wetlands

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
2A	Ensure compliance with Clause 56 in new development areas	Council to enforce compliance with Clause 56 of the Victorian Planning Provisions through the review of design plans and auditing of WSUD construction	Engineering Services	E	2018 to 2028	High	An important assumption in the water and pollutant balance is that new developments meet Best Practice Environmental Management (BPEM) stormwater pollution reduction targets and therefore Council's infrastructure focus will be within existing, urbanised catchments.	2.1, 2.2, 2.3, 2.4
2B	Incorporate WSUD into established urban areas	Continue to install WSUD assets in established urban areas	Engineering Services	S	2018 to 2028	High	The Total Nitrogen reduction target is derived from estimating biofilter installation (@ 200m ² per year). TN removal could be met or increased by including WSUD in road renewals, particularly in busy pedestrian streets. Prioritise GPT locations based on litter hotspots, proximity to waterways and visibility of waterways (i.e. do people walk and cycle along those lengths).	2.1, 2.2
		All road renewals will consider WSUD as part of their design	Engineering Services	E				
		All Council building refurbishments to consider WSUD. This requirement should be reflected in Council's Ecologically Sustainable Design policy due to be completed by 2020/2021	Operations	E				
		Install GPTs in priority locations: • Prioritise potential locations for GPTs • Install two GPTs per year at the highest priority locations	Engineering Services	E S				
2C	Build Council's capacity in water cycle management and WSUD	Engage an Integrated Water Cycle Officer to champion this plan and drive its implementation	Engineering Services; City Design, Strategy and Environment; Operations	S	2020	Medium	Seek out and attend other training courses like Australian Ecosystems wetland training on wetland vegetation and share that information with other Council staff at internal lunchtime sessions or similar.	2.1
		Undertake internal training to understand how to audit assets		S				
		Engage with neighbouring councils in the spirit of peer to peer learning to understand other councils' experiences with WSUD implementation and maintenance in similar climatic conditions		E				
		Attend appropriate Clearwater sessions around WSUD		E				
		Continue to submit funding applications to support capacity building, WSUD implementation, realising non-potable water sources and implementing waterway works		E				
		Advocate for the extension of Clause 56 to industrial, commercial and other non-residential areas		E				

5.1 Action Plan

Objective 2: Healthy waterways and wetlands cont.

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
2D	Improve WSUD performance	Prioritise WSUD assets with a view to conducting performance audits	Engineering Services	E	2028	Medium	Prioritised assets may include those that are older, larger, associated with sensitive receiving environments.	2.3, 2.4
		Ensure prioritised WSUD assets are functioning according to their design		S				
		Develop and implement a management and maintenance program to ensure assets are functioning according to their design		S				
		New WSUD assets are designed and constructed according to Melton City Council's WSUD guidelines and specification		E				
2E	Monitor WSUD performance	For specific sites, undertake water quality monitoring to assess the actual performance of WSUD assets over time	Engineering Services	S	2020 to 2028	Medium	The targets are based on theoretical improvements drawn from modelling results. The sites could be chosen considering factors like age and location to inform and refine WSUD asset choices and design specifications. This activity could also be undertaken with neighbouring councils including Brimbank and Wyndham, and in collaboration with university students.	2.1
2F	Allocate budget for WSUD activities	Register and treat WSUD assets as capital assets	Engineering Services	E	2020	Medium	Melton City Council has a large and growing number of WSUD assets. This action is to ensure that they continue to function as designed into the future.	2.3
		Determine and allocate annual budget for maintenance accordingly		E				
		Determine annual budget for rectification and renewal taking into account likely asset life		E				



5.1 Action Plan

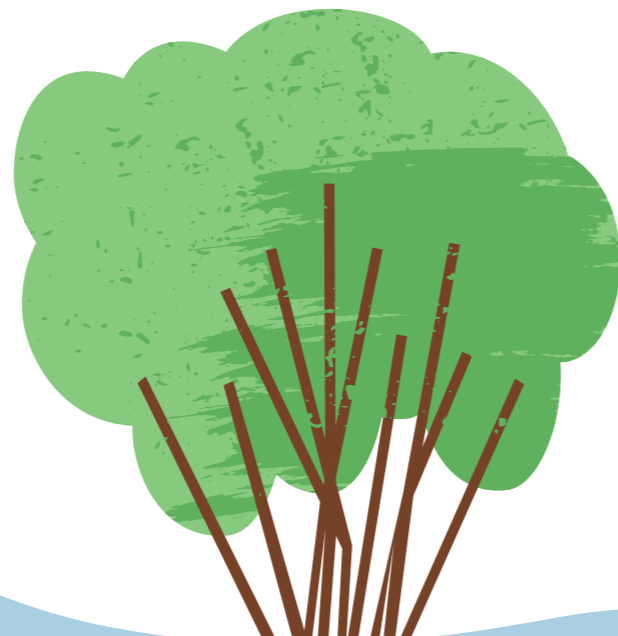
Objective 3: Valued landscapes that are connected and accessible

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
3A	Incorporate passive (or stormwater) irrigation into all street tree design	Consider passive irrigation in road reconstruction and improvement projects where possible	Engineering Services	E	2020	High	Melton City Council plants 20% of 'new' trees with the remainder planted by developers. This strategy aims to support the health and growth of these trees by ensuring they are sufficiently watered from non-potable sources. This action includes engagement with developers to agree acceptable designs and approaches, includes peer to peer learning (with neighbouring councils), as well as suggesting that passive irrigation become a valid inclusion into IWM Plans that developers submit to Council.	3.1
		Engage in peer to peer learning with councils that have investigated and implemented passive tree irrigation (including City of Melbourne, Moreland City Council, Monash City Council and Brimbank City Council)	City Design, Strategy and Environment; Engineering Services	E				
		Undertake a technical trial that involves installing and assessing the performance of passive street tree irrigation options. The aim will be to learn from Council peers and build internal capacity with a view to specifying preferred designs to Council engineers and the land development industry	City Design, Strategy and Environment; Engineering Services; Capital Projects	S				
		Include the passive irrigation of street trees as an option under IWM Plans for new developments	Engineering Services	E				
3B	Improve connectivity of, and accessibility to, waterways within public open spaces	Ensure shared pathways along waterways balance waterway health, amenity and connectivity of people to natural assets	Engineering Services	E/S	2020	Medium	This action focusses on access, and continuity of access, to waterways and natural assets like wetlands that are adjacent to and within public open spaces. The action recognises that there are challenges to accessing rural waterways under private landholdings. These actions need to be aligned with the timing of the Integrated Transport Strategy. The aim is to ensure that the community has access to waterways, so they can value them. This will drive engagement and community involvement in their improvement, as well as improving community health and wellbeing through a greater connection with nature.	NA
		Identify and prioritise critical gaps in connectivity of shared paths along urban waterway corridors		E				
		Identify critical gaps in the shared pathway network between centres of population and urban waterway corridors		E				
		Fund additional shared pathways to fill critical gaps to and along urban waterways		S				
		Seek to explore options for shared trails along rural waterways through sale, negotiation with landowners or conditions of subdivision		E				
		Consider encumbered space as an opportunity for open space development that delivers net community benefit to the satisfaction of Council	Planning Services	E				

5.1 Action Plan

Objective 3: Valued landscapes that are connected and accessible cont.

NO	ACTION	DESCRIPTION	RESPONSIBILITY	RESOURCING (E = EXISTING BUDGET S = SUBJECT TO ANNUAL BUDGET PROCESS)	TIMING	PRIORITY	NOTES	RELATED TARGET(S)
3C	Improve the quality of waterways within the City of Melton	Collaborate with Melbourne Water on the waterway naturalisation project at Arnolds Creek East	Engineering Services	S	2028	Medium	<p>There are two types of waterway improvement discussed here. Naturalisation refers to the conversion of a concrete waterway into a more natural form. This is high cost and will need to be undertaken with support from Melbourne Water.</p> <p>Rehabilitation refers to revegetation that can be completed with community groups.</p> <p>Council and Melbourne Water will need to identify priorities based on existing condition and values, proximity to population including schools and where existing rehabilitation works have been undertaken.</p>	3.2, 3.3
		Identify and prioritise lengths of waterway for rehabilitation (i.e. revegetation and erosion management) and develop a program for those works	City Design, Strategy and Environment; Operations	E				
		Fund and support community groups including school groups to rehabilitate those lengths of waterway, focussing on revegetation of the riparian corridor		S				
3D	Support the local community's engagement in local water management	Collaborate with Melbourne Water to install educational signage along well visited lengths of waterway	Operations	S	2018 to 2028	High	<p>This action is designed to engage the community with waterways either through education or via physical interaction through planting days.</p> <p>The emphasis here is on supporting and building capacity with the existing community and environment groups and to engage new people. The main method of doing this is through educational institutions.</p> <p>Rehabilitation of urban waterways is a long-term goal that will begin with engaging young and enthusiastic community members, who can in turn educate their own families.</p>	3.4, 3.5
		Undertake one significant community education project per year e.g. Paint or install educational information on stormwater related infrastructure. For example, fish at drainage inlets, waterway on the side of street cleaning trucks		S				
		Give talks at schools about the link between litter, stormwater and waterways	City Design, Strategy and Environment	S				
		Support local environmental group/s to gather data, information and images on the health and condition of waterways within the City of Melton		S				
		Support tree planting and revegetation days along waterways for school and community groups		S				





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T 9747 7200

Melton Library and Learning Hub
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and Learning Hub**
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