



# Stormwater Asset Management Plan

MELTON CITY COUNCIL





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# Executive Summary



## Purpose of the Plan

The fundamental purpose of this Stormwater Asset Management Plan (SWAMP) is to improve Council's long-term strategic management of its stormwater assets, in order to cater for the community's required levels of service in the future as detailed on page 17 Plan Improvement and Monitoring. The plan defines the state of Council's infrastructure assets at the close of the past financial year, the 10-year funding required to achieve Council's adopted asset performance targets, and planned asset management activities over a 10-year planning period.

<sup>1</sup> Source: Projected based previous year maintenance budget and applied 3% per annum over a period of 10 years

## Current State of Council's Assets

The value of assets covered by this SWAMP is \$475.31 million, distributed across the categories shown in Table 1 below.

Figure 1 below provides a high level condition snapshot of Council's stormwater assets. The Overall Score Index (OSI) is a numerical score given to an asset to represent its condition. This index takes into account all of the condition parameters and averages them to provide a score out of where 5 means nearing the end of life.

## Asset Funding Levels

The forecast lifecycle cost necessary to provide the services covered by this SWAMP over a 10-year planning period is \$16.3 million or \$1.6 million on average per year.

The breakdown of funding by asset category over 10 years is summarised in Table 3.

Historically, the asset funding level estimates were provided to Finance by the Operations and Maintenance Manager. During the service planning workshop that preceded this SWAMP, one of the key outcomes is to match the level of service provided by Council's stormwater portfolio to the expectations of the users (i.e. the community) within available resources.

Further information is detailed on page 18 Asset Funding Levels.

ASSET CATEGORY	REPLACEMENT VALUE	ANNUAL DEPRECIATION	ACCUMULATED DEPRECIATION	WRITTEN DOWN VALUE
Stormwater Drains	\$326,748,227	\$3,014,579	\$31,184,651	\$295,563,576
Stormwater Pits	\$144,881,856	\$1,566,241	\$20,385,271	\$124,496,585
Stormwater End Structures	\$2,246,273	\$25,557	\$471,271	\$1,775,002
Stormwater GPTs	\$1,435,213	\$17,431	\$117,027	\$1,318,186
<b>Total</b>	<b>\$475,311,569</b>	<b>\$4,623,808</b>	<b>\$52,158,220</b>	<b>\$423,153,349</b>

Table 1: Assets Valuations as at 30th June 2020

## Monitoring and Improvement Program

The next steps resulting from this SWAMP to improve asset management practices are as follows:

- Review and document levels of service taking into consideration customer feedback, detailed in Council Community Satisfaction Survey;
- Undertake outfall study of Arnolds Creek to recommend upgrades to improve river health;
- Review of stormwater assets hierarchy based on catchment area and proximity to main waterways;
- Increase condition survey sampling from the current 2% to 5%;
- Review ownership of stormwater assets which may be owned by Melbourne Water;
- Conduct an audit on all bio-retention assets to enable long term financial planning for their maintenance and renewal;
- Revaluation on Stormwater assets, incorporating CCTV scan assessments from the past 5 years;
- Create a register for passive irrigation assets acquired in recent years to enable Council to monitor their performance as well as planning for maintenance and renewal;
- Acquire flood mapping datasets from Water Authorities to assist in flood modelling;
- Establish better data agreements with Water authorities to enable a more timely exchange of data;
- Conduct a condition audit on GPTs;
- Review the stormwater network for gaps in data.

Further details of this can be found on page 18 Asset Funding Levels.

### STORMWATER DRAINS

\$11,221,029

Maintenance Cost

### STORMWATER PITS

\$4,904,627

Maintenance Cost

### STORMWATER END STRUCTURES

\$79,246

Maintenance Cost

### STORMWATER GPTS

\$49,748

Maintenance Cost

### TOTAL

\$16,254,650

Maintenance Cost

Table 3: Asset Funding Level over a 10-year planning period

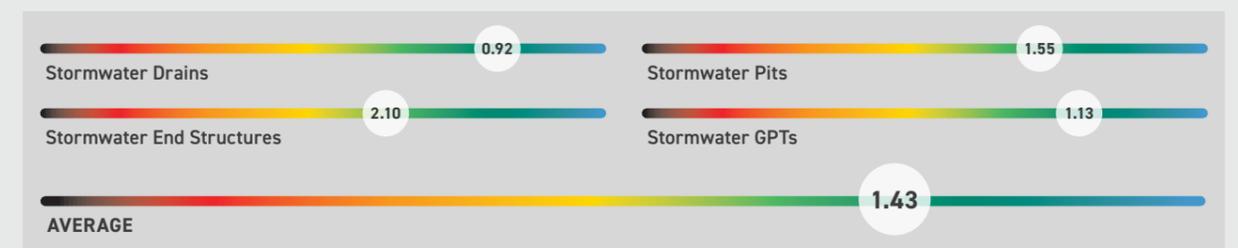


Figure 1: Overall Score Index Per Asset Category as at 30th June 2020

# Current State of Council's Assets



## Background

Council has documented a detailed stormwater condition assessment manual that has been used to assess the stormwater network condition and this is referred to as Stormwater Business Process Model (SWBPM). By understanding the condition of Council's assets and the various types of distresses that affect Council's assets, Council can utilise this data to endeavour to maintain the levels of service the community wants, in the context of affordability, and also to minimise the risk of asset failure.

Council undertakes condition assessments using CCTV scan on 2% of the stormwater drains network on an annual basis. Condition information is used to identify where assets are within their defined useful lives at any given point in time. The stormwater pits are assessed based on age to derive condition.

Statistical sampling is a recognised and widely used method, due to the fact that the stormwater pipes are buried below the ground, and a visual assessment of the stormwater pipe network is difficult to determine without the assistance of CCTV technology. However, for the sampling to provide effective results, the CCTV inspection needs to be undertaken as a random sampling. The application of asset condition based on the age of the various areas across the municipality has been undertaken in conjunction with limited CCTV including in areas where known defects have been reported.

<b>Excellent</b>	<b>RATING 0</b>	●
Brand new asset or recently rehabilitated to as new condition. Only cyclical routine maintenance is required.		
<b>Very Good</b>	<b>RATING 1</b>	●
Asset is in very good overall condition only routine maintenance is required.		
<b>Good</b>	<b>RATING 2</b>	●
Superficial defects may be present requiring minor maintenance, in addition to cyclical routine maintenance.		
<b>Fair</b>	<b>RATING 3</b>	●
Moderate deterioration. More frequent maintenance is required in addition to cyclical routine maintenance, in order to maintain adequate serviceability.		
<b>Poor</b>	<b>RATING 4</b>	●
High deterioration is evident. Maintenance costs rising in order to maintain serviceability. The asset would be at the point where it can be considered for renewal.		
<b>Very Poor</b>	<b>RATING 5</b>	●
Evidence of high level of deterioration affecting serviceability. Maintenance cost is high. The asset is now nearing the end of its useful life and should be considered for renewal.		
<b>End of Life</b>	<b>RATING 6</b>	●
Asset is no longer serviceable and should not remain in service.		

Table 3: Asset Condition Rating Description

Council contracts external engineering consultants who are trained and experienced in stormwater assets construction and maintenance to undertake condition assessment of their stormwater drains. The primary dataset of asset assessments typically relates to the physical condition, assessing either a singular defect or multiple defects that can be combined to represent a single condition score. The latest sampling condition was completed in 2020.

The dataset has since been updated to reflect the changes as a result of major renewal and upgrade works delivered via Council's capital works program as well as factoring in disposals and additions during stormwater revaluation as at 30th June 2020.

Table 3 provides an overall view with regards to the details of the condition rating scales for Council's stormwater asset stock.

## Key Indicators

Table 4 provides the quantum of stormwater assets by asset category managed by the Council as at 30th June 2020:

STORMWATER DRAINS	STORMWATER PITS	STORMWATER END STRUCTURES	STORMWATER GPTs
1,394.3 (km)	47,285 (Qty)	1,894 (Qty)	50 (Qty)
MEASURE	MEASURE	MEASURE	MEASURE
<b>\$326,748,227</b>	<b>\$144,881,855</b>	<b>\$2,246,273</b>	<b>\$1,435,213</b>
TOTAL REPLACEMENT VALUE	TOTAL REPLACEMENT VALUE	TOTAL REPLACEMENT VALUE	TOTAL REPLACEMENT VALUE

Table 4: Stormwater Asset Categories

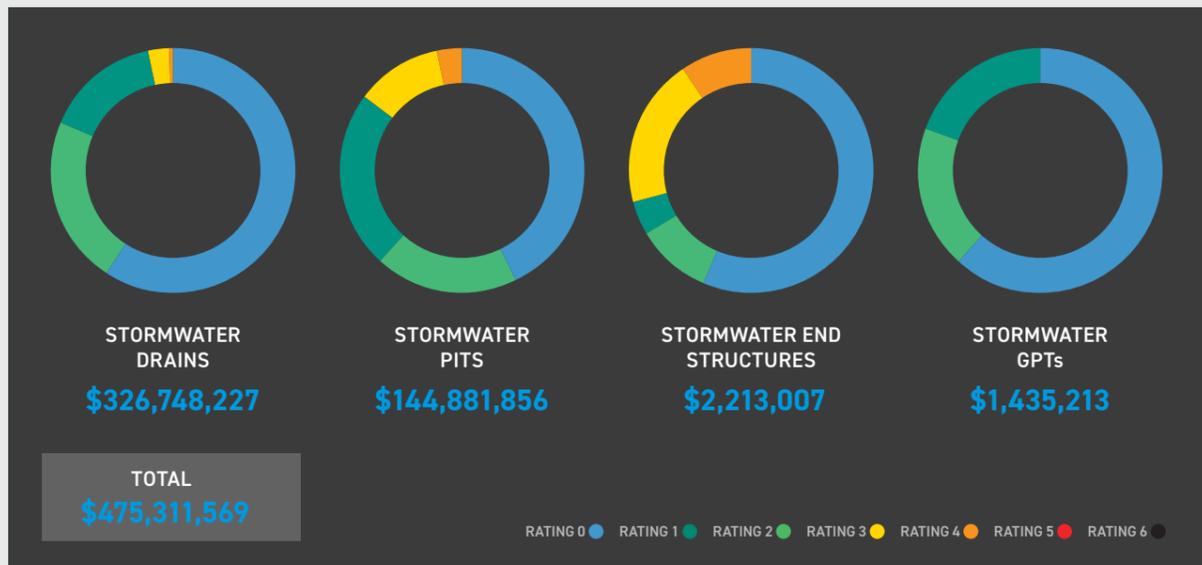


Figure 2: Stormwater Assets Condition Distribution By Replacement Value

### Asset Category Status

Figure 2 illustrates asset stock condition distribution by replacement value for each stormwater asset category.

High level development and growth in the past decade resulted in the acquisition of a large number of newly constructed stormwater assets, resulting in above average overall condition score.

In accordance with the International Infrastructure Management Manual, Council acknowledges that the primary purpose of an asset hierarchy is to ensure that appropriate management, engineering standards and planning practices are applied to the asset based on its function. It also enables a more efficient use of limited resources, by allocating increased funding to those assets that are in higher demand.

Melton City Council has documented a stormwater asset hierarchy based on the asset's capacity and its function. In addition to hierarchy, the 'Criticality' attribute is used to identify stormwater assets within flood prone locations, or important outlets based on their geographic location as well as proximity to rivers and main waterways. Further details on this have been documented in the Stormwater Business Process Model (SWBPM).



### Key Stakeholders

Assets controlled by Council are utilised by a broad cross-section of the community. It is critical that assets are maintained and renewed based on need and fit for purpose. The best judge of an asset being fit

for purpose is likely to be the user of the asset. Asset users are key stakeholders of this Stormwater Asset Management Plan.

Table 5 below identifies stakeholders where consultation is necessary when Council seeks input in relation to the determination of levels of service and intervention levels.

#### COUNCIL

Endorsement of the asset management policy, strategy and plans. Set high level direction through the development of asset management principles in the Community Strategic Plan.

#### SENIOR MANAGEMENT

Endorse the development of asset management plans and provide the resources required to complete this task. Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors. Support the implementation of actions resulting from this plan and prepared to make changes to a better way of managing assets and delivering services. Support for asset management driven budget and Long Term Financial Plans.

#### ASSET MANAGEMENT & GIS DEPARTMENT

Maintaining Council's asset registers and performing strategic predictive modelling analysis works to inform Council's Long

Term Financial Plans. Responsible for coordinating the development and implementation of asset management processes and frameworks within Council and for developing a 10 year renewal schedule for all asset categories based on adopted Strategic Asset Management Framework (SAMF).

#### FINANCE DEPARTMENT

Ensuring that the asset valuations are accurate. Development of supporting policies i.e. Asset Capitalisation Policy and Asset Valuation and Revaluation Policy. Preparation of asset sustainability and financial reports, incorporating asset depreciation in compliance with current Australian accounting standards.

#### CAPITAL PROJECT MANAGER

Responsible for the delivery of renewal and upgrade projects to Council's approved design standards, and for ensuring efficient handover of project information to enable accurate update of Council's official register of assets.

#### OPERATIONS AND MAINTENANCE MANAGERS

Business Unit Managers are responsible for understanding expectations of levels of service through effective, ongoing engagement with the community (users of the service). Planning for changes to operations and maintenance as well as undertake minor renewal works.

#### COUNCIL OFFICERS

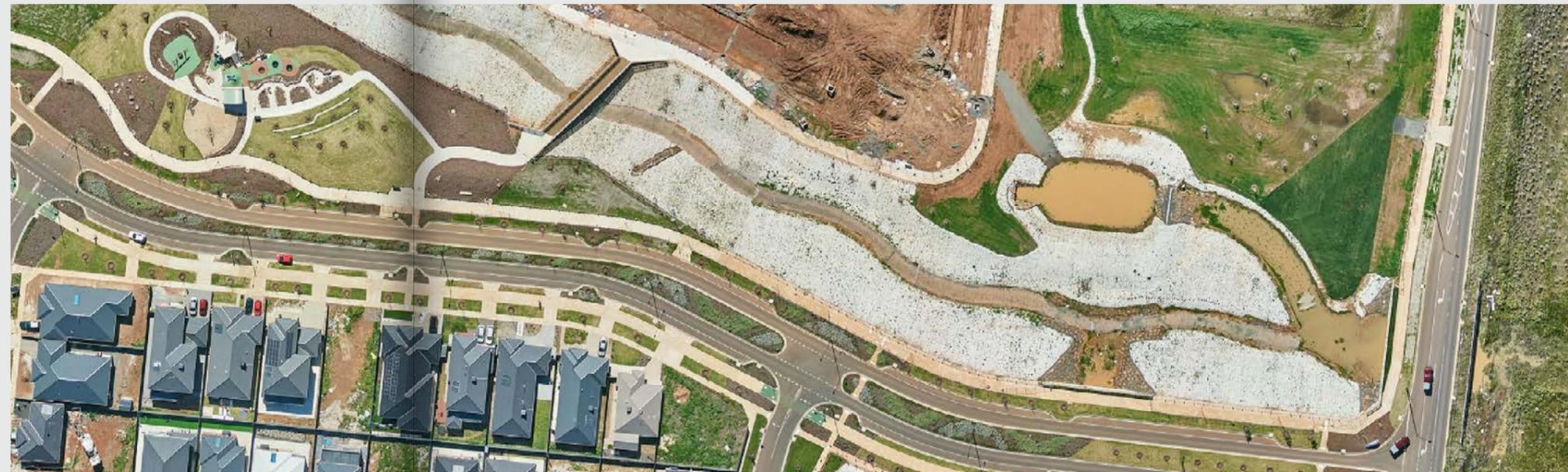
Provide local knowledge level detail on all infrastructure assets. They verify the size, location and condition of assets. They can describe the maintenance standards deployed and Council's ability to meet technical and customer levels of service.

#### MAINTENANCE CONTRACTORS

Provide regular inspections on Council's assets and perform routine maintenance works.

Table 5: Key Stakeholders

# Levels of Service



## Customer Research and Expectation

Council is continually working to improve its community consultation practices through implementing a combination of methods to encourage stakeholder engagement to gain knowledge of expectations.

The most recent customer satisfaction survey which was conducted in 2018, reported satisfaction levels on key service areas as illustrated in Table 6.

Further details on the customer satisfaction survey can be found on Council's website below:

<https://www.melton.vic.gov.au/files/assets/public/council/about-the-city/community-satisfaction-survey/overview-report-melton-2018-community-satisfaction-survey-overview-report-final.pdf>

PERFORMANCE MEASURE	MEAN SCORE	SATISFACTION LEVEL							
		EXTREMELY POOR	VERY POOR	POOR	SOLID	GOOD	VERY GOOD	EXCELLENT	
Overall Performance	7.12					●			
Services and Facilities	7.39							●	

Table 6: Community Satisfaction Survey Levels

## Strategic and Corporate Goals Alignment

This Stormwater Asset Management Plan is prepared under the direction of Council's vision, mission, goals and objectives and has been aligned to deliver cost-effective, transparent, realistic and affordable service levels in accordance with community expectations.

Council's vision is

**"A Thriving Community Where Everyone Belongs"**

Council's mission is:

**"Support The Growth, Wellbeing and Aspirations of Our Community Through Leadership, Excellence and Inclusion."**

Relevant Council goals and objectives and how these are addressed in this SWAMP are detailed in Table 7.

## Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of Council stormwater services are outlined in Table 8.

## Strategic Levels of Service

Council's Strategic Levels of Service that have been adopted as a result of this SWAMP are detailed in Table 9.

## Operational Levels of Service

For the levels of service delivered on a day to day nature (i.e. responding to customer requests for maintenance faults and responding to breakdowns), these are detailed in the Road and Drainage Maintenance Contract. The contract document specifies the required services which include but not limited to the annual service program, monthly service reporting requirements, 24-hour emergency response service, customer service response details and quality assurance.

## How we engaged with our community

In February 2021, through the establishment of Council's first Community Panel people from a broad, representative range of social, economic, age, religious, and cultural backgrounds, shared what they loved about the City of Melton; what they felt needed improvement; and what their hopes for the future of our community were.

The result is a unique vision that captures the aspirations of our residents for what our municipality will become in the next 20 years,

along with the principles to guide the development of the Asset Plan 2021-2031 (see *Asset Management Strategy* page 14).

The Community Panel ensured the community's voice was at the heart of Council's strategic planning and formed part of Council's deliberative engagement requirements under the *Local Government Act 2020*.

STRATEGIC OBJECTIVE	OUTCOME	HOW GOAL AND OBJECTIVES ARE ADDRESSED IN OSAMP
A well planned and built City	A City with a clear vision to manage growth in a sustainable and accessible way	Identify and address gaps in community infrastructure. Ensure existing assets are adequately renewed, maintained, fit for purpose and resilient to changing climate conditions
A proud, inclusive and safe community	A City of people leading happy and healthy lives	Continued investment in infrastructure assets.
A thriving and resilient natural environment	A City that preserves and Enhances its natural environment for future generations	Provision of waste management and cleaning services that include kerbside waste, recycling and organics collection, street and footpath sweeping services, drainage maintenance, litter collection, graffiti removal and the operation of the Melton Recycling Facility. Maintenance of our parks, open spaces, trees, property, drainage and roads.

Table 7: Council's Strategic Objectives

LEGISLATION	REQUIREMENT
Australian Rainfall and Runoff	Provide "Australian designers with the best available information on design flood estimation" and in turn "providing a sound basis for the sizing of works and structures that are subject to floods".
Building Act 1993 & Building Regulations 2006	The Act sets out the legal framework for the regulation of construction of recreation and stormwaters and other structures, recreation and stormwater standards and maintenance of specific recreation and stormwater safety features in Victoria. The Regulations are derived from the Act and contain, amongst other things, the requirements relating to recreation and stormwater permits and recreation and stormwater inspections. The Regulations call up the Building Code of Australia (BCA) as a technical reference that must be complied with.
Catchment and Land Protection Act 1994	Includes setting up a framework for the integrated management and protection of catchments (S1). The Act establishes the catchment management authorities (S11).
Environment Protection Act 1970	The purpose of this Act is to create a legislative framework for the protection of the environment in Victoria having regard to the principles of environmental protection.
Local Government Act 1989 Local Government Finance and reporting Regulations 2004	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by stormwater assets asset management plans for sustainable service delivery.
Melton City Council Precinct Structure Plans	A strategic plan that guides the delivery of urban environment within the municipality. It sets the vision for how land should be developed, illustrates the future urban structure and describes the outcomes to be achieved by future development. It details the form and conditions that must be met by future plan use and development. It also addresses the requirements of the EPBC Act 1999 in accordance with the endorsed program under part 10.
National Asset Management Framework Legislation 2010	Focuses on long term financial sustainability and provides a mandate to have long term strategy, financial statements and annual reporting mechanisms. AM plans are likely to be audited.
Occupational Health and Safety Act 2004	Aims to secure the health, safety and welfare of people at work. It lays down general requirements that must be met at places of work in Victoria. The provisions of the Act cover every place of work in Victoria. The Act covers self-employed people as well as employees, employers, students, contractors and other visitors.
Occupational Health and Safety Regulations 2007	Outlines minimum actions to be taken to comply with OH&S Act. It explains plants such as Lifts, boilers maintenance, inspection and testing and WorkCover registration requirements.
Planning and Environment Act 1987	Planning and Environment Act 1987. Sets of legislative requirements for planning and environmental concerns in new and upgrades areas. It allows for the impact of asset construction and growth and sets parameters to trigger Council activities/actions.
Water Act 1989	Includes providing for the integrated management of all elements of the terrestrial phase of the water cycle (S1). The Act gives the rights and responsibilities for the use flow and control of water e.g. S16. The Act creates the waterway management authorities (e.g. Melbourne Water).

Table 8: Legislative and Strategic Requirements



KEY PERFORMANCE MEASURE	LEVELS OF SERVICE	PERFORMANCE MEASURE
COMMUNITY LEVELS OF SERVICE		
Safety	Provide a stormwater drainage system that is low risk to the community	Number of claims
Responsiveness	Response time to customer requests for stormwater related assets.	Reactive service requests completed within adopted timeframes.
Quality - Maintenance	Performance in maintaining stormwater drainage infrastructure	Customer Request
Capacity/ Functionality	Capacity to convey stormwater to protect properties from overland flow	Frequency of overland flow that impacts on private property
TECHNICAL LEVELS OF SERVICE		
Quality	Stormwater assets maintained to an acceptable level.	Lesser than 5% of the total network in condition above score 4 out of 5
Condition	Condition assessment of stormwater assets every 3 years.	Overall Condition Index to be in condition 3 (out of 5) or better.

Table 9: Strategic Levels of Service - MCC Stormwater Assets

# Future Demand



## Demand Drivers

Drivers affecting demand include things such as population change, changes in demographics, technological changes, environmental awareness and new assets.

## Demand Forecasts

The present position and projection for demand drivers due to population growth that may impact future service delivery can be found in the link below:

<https://forecast.id.com.au/melton>

Demand factor trends and impacts on service delivery are summarised in Table 10.

## Changes in Technology

Council is continuously monitoring new asset treatments that may be available to increase the life of its

assets. Table 11 details technology changes that are forecasted to affect the delivery of services covered by this plan.

These technological factors need to be assessed in determining the scoping requirements for maintenance works, renewal,

upgrade and new stormwater projects. There will be changes to asset management technology, in particular the monitoring and data collection roles. These upgrades in technology may require consideration of modifications to service levels as and when appropriate.

<sup>2</sup> City of Melton – .idCommunity

DEMAND FACTOR	PRESENT POSITION	PROJECTION	IMPACT ON SERVICES
Population	172,071 <sup>3</sup> in 2019 which is an increase of 8,095 from the previous year	485,061 by 2051, a 194.79% increase	Population growth will be mostly supported by green-field development, resulting in a greater number of gifted assets to Council. Increased runoff from urbanisation, reduced natural area runoff. Expectation of higher maintenance service levels. Higher demand on existing stormwater network.
Higher density developments	Large allotments	Smaller allotments	Increased impervious areas are leading to a greater requirement for stormwater drainage infrastructure.
Environmental Awareness	As the residents' awareness of drainage's impact on the environment increases, so will the management strategy/funding be expected to increase	Council already has a responsible approach to environmental management of drainage	No impact is projected if Council continues to be "on the front foot" of this issue.
Environmental Awareness	Minor control of pollutants entering streams and waterways.	Greater restriction on the quality of run-off water particularly from roads and reserve areas	Increased use of filters, a possible change in maintenance practices – more street sweeping and a different regime for maintenance in reserves adjacent waterways.
Customer Preferences	Open swales and channels	To be replaced with underground pipes	Additional assets to construct and maintain.
Customer Expectation	Stormwater plumbed to the street.	People will install tanks to collect and re-use their rainwater.	Positive impact – stormwater capacity may be reduced if more water is contained on-site.

Table 10: Demand Factors, Projections and Impact on Services

TECHNOLOGY CHANGE	EFFECT ON SERVICE DELIVERY
Advanced design on GPT's	Better water capture of pollutants and easier methods to clean and clear.
Advanced trenchless technology	Less disturbance in highly populated areas.
Aquifer storage	Water as a commodity can be harvested and stored underground only to be retrieved at a later time when required to irrigate reserves, etc. Groundwater studies would need to be undertaken to determine the suitability of this and additional infrastructure (pipes, pumps, etc.) required to replenish and extract water from underground aquifers.
Improved pipe laying (bedding & backfill standards)	Reduce pipe laying costs of stormwater pipelining. Cost effective method of rehabilitating an assets service level back to the desired level.
Improvements in CCTV or pipe inspection technology	More cost-effective methods for monitoring the condition of the stormwater network.
New pipe materials	Obsolete pipe material such as clay & asbestos will be replaced with modern more cost effective and appropriate materials such as Poly pipes and Reinforced concrete fibre pipes.
New side entry pits	New pits come with grates to make it easier and more cost-effective to inspect, maintain and clean. Life-cycle costs could be greatly reduced.
Underground storage for trees	Capture rainwater, drives inspection and maintenance program. This is currently used in new developments to save cost on watering trees. It's also known as passive irrigation storage.
Water Sensitive Urban Design (WSUD)	Reduces flow rates from new developments and provides higher quality runoff. It also provides greater detention storage and re-use of stormwater.

Table 11: Changes in Technology and Forecast effect on Service Delivery

## New Assets from Growth

Since the publication of the last SWAMP in 2014, Council's stormwater portfolio has expanded significantly with new asset additions. These additions are considered to have increased the replacement value of Council's stormwater portfolio in the vicinity of \$202 million (allowing for CPI increases). This equates to an average increase of \$33.4 million per annum over the past 6 years.

Table 12 provides the quantum of asset increases in the stormwater asset portfolio over the last 6 years since 2014.

It is envisaged that over the next 10 years, there will be more major development and growth in the precinct structure plan areas of: Plumpton, Rockbank, Rockbank North, Toolern, Mt Atkinson and Kororoit, which will directly add new assets into Council's stormwater asset portfolio. Council approved precinct structure plans which have been incorporated into the Melton Planning Scheme can be found in the link below:

<https://www.melton.vic.gov.au/Services/Building-Planning-Transport/Strategic-Planning/Precinct-Structure-Plans>

## Demand Management Plan

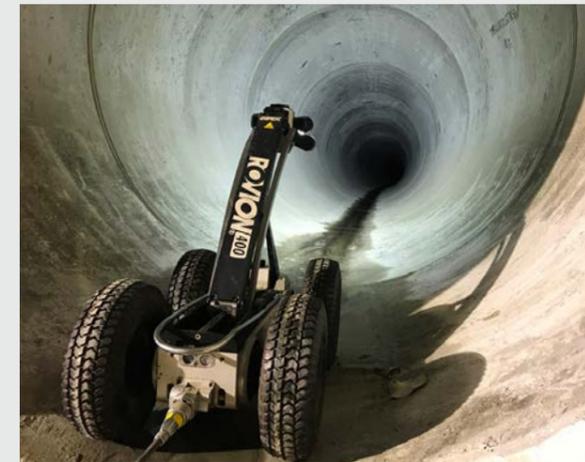
The demand for stormwater assets at MCC will increase proportionally with the predicted population growth and predicted demographic changes.

Demand for new services will be managed through a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 13. Further opportunities will be developed in future revisions of this SWAMP.

ASSET GROUP	2014 REPLACEMENT VALUE (MILLION)	2020 REPLACEMENT VALUE (MILLION)	INCREASED REPLACEMENT VALUE (MILLION)
Stormwater	\$273,365,845	\$475,311,569	\$201,945,724

Table 12: New Assets From Growth



### SERVICE ACTIVITY

### DEMAND MANAGEMENT PLAN

#### Pipes and pits

- Water Sensitive Urban Design – Allows for overland flow, green swales, local detention basins, and less impervious areas on new developments.
- Re-lining old pipes with poly inserts to prolong life.
- Greater compliance for surface water to reduce the silting up of pits, pipes, and other waterways.
- Greater cleaning and flushing of the underground system to utilise full capacity.
- Clearing and widening of natural waterways to increase capacity and therefore their role in the stormwater drainage network.
- More use of GPTs on private property to arrest pollutants before reaching Council network.
- Increase the use of stormwater to wetlands as a 'natural' recreational asset.
- Increased re-use of stormwater in localised areas.

#### Development of new residential subdivisions can affect future capacity and utilisation requirements

Meet requirements of township development plans.

#### Increasing service level by installing new stormwater assets

Utilisation and demand. Record all flooding areas due to lack of stormwater infrastructure and include on a priority basis in the 10-year capital works program.

#### Identified areas where a lack of capacity exists

Upgrade pipe network to meet current design standards.

#### Non-Asset based solution through education and information programs

Encourage and promote the use of rainwater tanks and the reduction of non permeable surface areas in order to reduce the volume of stormwater discharged into the network.

#### Open swales in front of resident's home

Educating residents on the function of open swales.

Table 13: Demand Management Plan Summary

# Risk Management Planning



## Risk Management Plan

Council's Risk Management Policy sets the overall framework for addressing risk within the framework of ISO31000-2009. The elements of this framework are described as follows:

- **Risk Management Context:** Establishes the objectives, stakeholders, key issues and criteria against which risks will be evaluated;
- **Identify the Risk:** Identifies what risk events are likely to impact on assets and services;

- **Analyse the Risk:** Reviews the existing controls and then analyses the likelihood of an event occurring and the consequence of the event to determine the level of risk;
- **Assess the Risk:** Assesses and ranks the identified risks in a Risk Register;
- **Treat the Risks:** Identifies actions to reduce/control the risk.

## Risks Assessment

Council has developed an asset hierarchy, giving higher importance to risk assessment and the

appropriate levels of inspection and maintenance for each classification. A robust risk identification and management approach has the following anticipated benefits:

- A reduction in risk related events;
- Improved stormwater assets knowledge;
- Managers better understand and manage risk. That is, risk is articulated and the relationship of risk and an individual's accountabilities and responsibilities are more clearly understood;

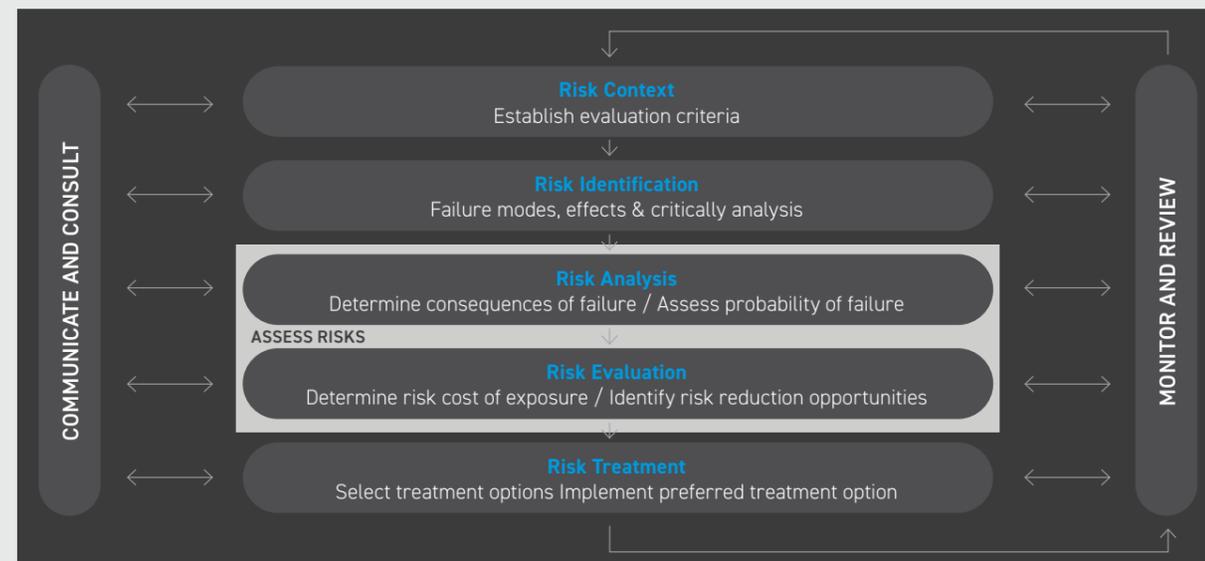


Figure 5: Risk Management Process, Source: ISO31000:2018, p9

- Improved stormwater performance such that services are not unexpectedly impacted by failure resulting in uncontrolled reactive maintenance works;
- Stormwater assets remain in a fair condition for a longer period of time extending their economic life;
- Improved compliance levels;
- Improved financial and environmental sustainability via more strategic investment in stormwater asset management.

The risk assessment process identifies credible risks, the likelihood of the risk event occurring and the consequences should the risk event occur. Council's risk register is a high level document that covers all the key risks that Council is exposed to which can be found in the link below:

<https://www.melton.vic.gov.au/Services/Building-Planning-Transport/Engineering/Asset-management>

Climate change and resource sustainability are environmental factors that will be considered as part of the risk assessment process. Risks associated with climate change and strategy are detailed under City of Melton Environmental Plan 2017-2027 which can be found in the link below:

<https://www.melton.vic.gov.au/files/assets/public/services/environment-and-sustainability/environment-plan/environment-plan-2017-2027.pdf>.

PRIMARY CONSEQUENCE	CAUSE	CURRENT CONTROLS
Inefficient disposal of stormwater through the City	Pipe and pit blockages	Continuous pipe and pit cleaning program (all year round). Cleaning frequencies of pits/pipes determined by risk rating.
Pipe failures in high risk locations	Lack of condition information on pipe network	Undertake proactive CCTV inspections of high-risk areas of the network.
Local flood	Blockage due to heavy collection of debris inside GPTs or pipes and pits and ineffective operations and maintenance of WSUD.	Regular inspection and cleaning starting at the upper catchment to reduce the amount of collected debris.
Failure to execute renewal works in a timely manner thereby creating a personal safety risk or premature loss of an asset	Lack of planning to develop and deliver the renewal program and delaying decisions to dispose of a stormwater asset or undertake renewal works.	Implementation of an ongoing condition audit program and subsequent preparation of renewal programs.
Provision of community infrastructure does not meet current day needs or operates as originally designed or intended	Failure to provide an appropriate amount of funding to renew Council assets in a sustainable manner to maintain the desired levels of service and support service provision. Deferral of asset renewal projects due to changing priorities. Surplus assets yet to be disposed of or retired.	Capital Works Program/ Long Term Financial Plan Asset Management Policy & Strategy

Table 14: Council Stormwater Risks

# Asset Funding Levels



## Forecast 10-Year Funding

Table 15 below provides the projected year on year maintenance budget for stormwater assets<sup>3</sup>:

Council has not allocated a set renewal funding over a period of 10 years for stormwater drainage as the pipelines and structures are generally long-lived assets (useful life of 80–100 years). Noting the oldest assets in the network being constructed in the 1960s, the expected renewals based on age are not expected until 2040. However, Council acknowledged

that renewals and upgrades are still required based on condition reporting where defects in pipes may occur from external sources (damage from roadways, erosion, blockages, physical damage). During the service planning workshop the following items have been identified as key decision criteria for major stormwater renewal:

- Maintenance hot spots;
- Minor flooding;
- Property damage reduction;
- Flood frequency reduction;
- In combination with other works

integrated with the drainage location.

## Estimated Funding

The estimated expenditure on the maintenance of stormwater asset portfolio over the next 10 years is \$16.3 million. On the renewal front, it is important to note that much of the stormwater drainage infrastructure works are under roads which have their own

<sup>3</sup> Source: Projected based previous year maintenance budget and applied 3% per annum over a period fo 10 years

ASSET CATEGORY	STORMWATER DRAINS	STORMWATER PITS	STORMWATER END STRUCTURES	STORMWATER GPTS	TOTAL
2021	\$978,816	\$427,833	\$6,913	\$4,340	\$1,417,901
2022	\$1,008,180	\$440,668	\$7,120	\$4,470	\$1,460,438
2023	\$1,038,426	\$453,888	\$7,334	\$4,604	\$1,504,252
2024	\$1,069,579	\$467,505	\$7,554	\$4,742	\$1,549,379
2025	\$1,101,666	\$481,530	\$7,780	\$4,884	\$1,595,860
2026	\$1,134,716	\$495,976	\$8,014	\$5,031	\$1,643,736
2027	\$1,168,757	\$510,855	\$8,254	\$5,182	\$1,693,048
2028	\$1,203,820	\$526,181	\$8,502	\$5,337	\$1,743,840
2029	\$1,239,935	\$541,966	\$8,757	\$5,497	\$1,796,155
2030	\$1,277,133	\$558,225	\$9,020	\$5,662	\$1,850,040
<b>Total</b>	<b>\$11,221,029</b>	<b>\$4,904,626</b>	<b>\$79,246</b>	<b>\$49,748</b>	<b>\$16,254,650</b>

Table 15: Year on year asset funding level over a 10-year planning period

construction priority and combining drainage works with these works makes good economic sense and creates a good public perception. These renewals will be budgeted accordingly as an output from the condition assessment program and also form part of larger projects involving other asset categories.

New stormwater assets and upgrades or expansion of existing assets are identified from various sources such as Councillor or community requests, proposals identified by strategic plans or partnerships with other neighbouring municipalities or organisations. The requirement for new assets to be constructed will generally be dependent on the forecast growth in the region and will be identified in the 10-year capital works program with further commentary on the need for upgraded and new assets as well as being in line with Council Integrated

Water Management Plan 2018-2028. Further information can be found in the link below:

<https://www.melton.vic.gov.au/files/assets/public/services/environment-and-sustainability/water-and-waterways/integrated-water-management-plan.pdf>

It must be recognised and clearly understood that new assets add to Council's total life-cycle expenditure and thus the whole of life costs including operations, maintenance and renewal must be accurately forecasted and included in the asset register for strategic modelling.

## Financial Ratios

Asset management ratios provide insight into an organisation's performance and success in managing its assets. Council's asset management ratios for its asset portfolio calculated as at 30 June 2020 have been reported in Table 16.

<sup>4</sup> Whilst sustainability ratio is below industry target across all stormwater assets, this is to be expected because the rate of depreciation is higher due to the fact that it is measured using straight line. The renewal expenditure on the other hand is projected based on levels of service and deemed as most affordable and equitable from the community perspective. Therefore the misalignment between these two where one is a finance driven measure and the other a community and lifecycle costing driven measure will result in this indicator being a somewhat less accurate sustainability indicator.



Table 16: Asset Management Ratios

The definition and calculation of the ratios above are as follows:

### Asset Sustainability

**Definition:** This ratio is an approximation of the extent to which assets managed by a local government are being replaced as these reach the end of their useful lives.

**Calculation:** Capital Renewal Expenditure divided by Depreciation Expense

### Remaining Service Potential

**Definition:** This ratio seeks to highlight the aged condition of a local government's stock of physical assets. If a local government is responsibly maintaining and renewing/replacing its assets in accordance with a well prepared asset management plan, then the fact that the Asset Consumption Ratio may be relatively low and/or declining should not be cause for concern - providing it is operating sustainably.

**Calculation:** Written Down Value divided by Current Replacement Value

### Asset Renewal Funding

**Definition:** This ratio indicates whether the local government has the financial capacity to fund asset renewal as required, and can continue to provide existing levels of services in future, without additional operating income; or reductions in operating expenses.

**Calculation:** Net Present Value (NPV) of planned capital Renewal expenditure divided by the Net present value of desired capital renewal expenditure

### Average Annual Asset Consumption

**Definition:** This ratio indicates whether the local government has the financial capacity to fund asset renewal as required, and can continue to provide existing levels of services in future, without additional operating income; or reductions in operating expenses.

**Calculation:** Annual Depreciation divided by Depreciable Amount

### Funding Strategy

Projected expenditure identified in Table 15 is to be funded from Council's operating and capital budgets, loans and reserves and Federal and State Government grants. The funding strategy is detailed in Council's 10-year long term financial plan. The 10-year LTFP is a dynamic document in that it is reviewed and refined on a continual basis, to reflect as accurately as possible changes in financial circumstances.

The key assumptions made in presenting the information contained in this SWAMP and in preparing forecasts of required capital expenditure and asset values, depreciation expense and

carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this SWAMP are:

- The current levels of service will remain constant over the life of this SWAMP;
- The treatment and maintenance costs are based on Council's current schedule of rates and may not directly compare to Council's internal service provision actual costs;
- All predicted financial figures are based on current rates and are not adjusted by the inflation rate for the particular year of works;
- Continued use of current construction techniques and materials in alignment with current standards;
- Current maintenance funding levels are meeting service level requirements;
- Capital renewal is generally 'like for like' however mandated improvements are factored into replacement costs;
- Depreciation is in accordance with Council Policy;
- The proposed capital renewal program will be funded as per recommended by the Asset Management & GIS Department and Operations & Maintenance Managers.



The fundamental purpose of this Stormwater Asset Management Plan, is to improve the long-term strategic management of stormwater assets, in order to cater for the community's required service level, and to achieve adopted performance targets over a 10-year planning period.

# Plan Improvement and Monitoring



This section outlines how Council can measure its asset management performance. The identified action items in Table 18 will enable Council to improve our asset management capability, to enhance asset value and deliver more for stakeholders while balancing cost, risk and performance.

## AM Document Register

Refer to Table 17.

## Improvement Plan

In the course of preparing this SWAMP, it has been identified that there is a need to further develop Council's asset management processes and practices in relation to its stormwater assets. The asset management improvement plan which is set out in Table 18 details the key improvement tasks. Completion of these tasks will improve Council's asset management capabilities for the stormwater asset portfolio.

## Monitoring and Review Procedures

This SWAMP will be reviewed during annual budget preparation and amended to recognise any changes in service levels and/or resources available to provide those services as a result of the budget decision process. The SWAMP is a 10 year document, to be revised every 4 years. The revision will consider emerging trends, changing priorities and technological advances in asset management.

An asset management plan is a dynamic document, reflecting and responding to change over time. Monitoring of this Stormwater Asset Management Plan is required to:

- Ensure compliance with the proposed improvement program milestones;
- Ensure compliance with adopted standards and procedures for condition and performance.

## Performance Measures

The effectiveness of this SWAMP will be measured and monitored on the basis of annual strategic Council indicators as follows:

- The degree to which the required cash flows identified in this asset management plan are incorporated into Council's long-term financial planning process and works planning;
- The performance of Council against the Strategic Levels of Service documented in this SWAMP. Measuring the target levels and actual achievement levels; and
- The degree to which detailed works programs, budgets, business plans and organisational structures take into account the trends provided by the SWAMP;
- Performance against the Asset Management Ratios;
- The level of execution of the identified actions in the plan.

DOCUMENTS	DOCUMENT LINK	ADOPTED DATE	PLANNED REVISION
AM Policy	<a href="https://www.melton.vic.gov.au/Council/Publications/Documents-Reports-Strategies">https://www.melton.vic.gov.au/Council/Publications/Documents-Reports-Strategies</a>	Jul-2018	Jul-2022
AM Strategy	<a href="https://www.melton.vic.gov.au/Council/Publications/Documents-Reports-Strategies">https://www.melton.vic.gov.au/Council/Publications/Documents-Reports-Strategies</a>	Jul-2014	Jan-2021

Table 17: AM Document Register

TASK NO	IMPROVEMENT TYPE	IMPROVEMENT ITEMS	RESPONSIBLE SERVICE UNIT	TIMELINE
1	Business Process	Review and document levels of service taking into consideration customer feedback, detailed in Council Community Satisfaction Survey.	Operations	Dec-21
2	Data Management	Review of stormwater assets hierarchy based on catchment area and proximity to main waterways.	Engineering Services	Jun-21
3	Data Management	Increase condition survey sampling from the current 2% to 5%.	Engineering Services	Jun-21
4	Data Management	Review ownership of stormwater assets which may be owned by Melbourne Water.	Engineering Services	Jun-21
5	Data Management	Conduct an audit on all bio-retention assets to enable long term financial planning for their maintenance and renewal.	Engineering Services	Jun-21
6	Data Management	Revaluation on stormwater assets, incorporating CCTV scan assessments from the past 5 years.	Engineering Services	Jun-21
7	Data Management	Create a register for passive irrigation assets acquired in recent years to enable Council to monitor their performance as well as planning for maintenance and renewal.	Engineering Services	Dec-21
8	Data Management	Conduct an audit on all bio-retention assets to enable long term financial planning for their maintenance and renewal.	Engineering Services	Dec-21
9	Data Management	Acquire flood mapping datasets from Water Authorities to assist in flood modelling.	Engineering Services	Dec-21
10	Data Management	Better data agreements with Water Authorities to enable a more timely exchange of data sharing agreements.	Engineering Services	Dec-21
11	Data Management	Conduct a condition audit on Stormwater GPTs.	Engineering Services	Jan-22
12	Data Management	Review the stormwater network for gaps in data.	Engineering Services	Dec-22

Table 18: Improvement Plan



**Melton Civic Centre**  
232 High Street, Melton  
T 9747 7200

**Melton Library and Learning Hub**  
31 McKenzie Street, Melton  
T 9747 7200

**Caroline Springs Library  
and Learning Hub**  
193 Caroline Springs Boulevard  
Caroline Springs  
T 9747 7200

[melton.vic.gov.au](http://melton.vic.gov.au)

