HAWKESBURY CITY COUNCIL

ASSET MANAGEMENT PLAN

STORMWATER

RESOURCING STRATEGY

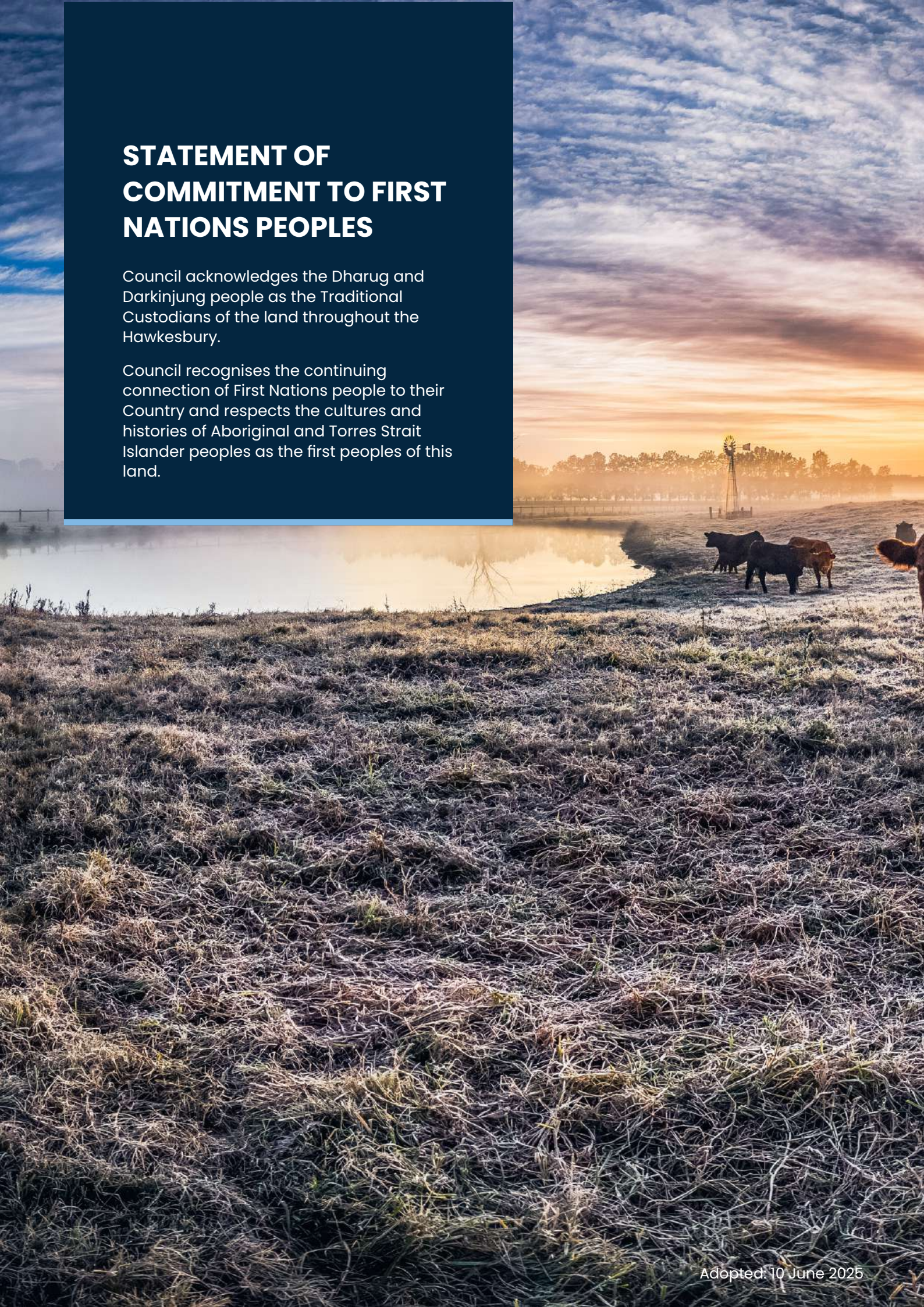
Hawkesbury City Council

www.hawkesbury.nsw.gov.au

STATEMENT OF COMMITMENT TO FIRST NATIONS PEOPLES

Council acknowledges the Dharug and Darkinjung people as the Traditional Custodians of the land throughout the Hawkesbury.

Council recognises the continuing connection of First Nations people to their Country and respects the cultures and histories of Aboriginal and Torres Strait Islander peoples as the first peoples of this land.



Adopted: 10 June 2025

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EXECUTIVE SUMMARY

This Stormwater Asset Management Plan details the lifecycle management practices for the Stormwater Drainage Infrastructure Assets group. This group includes drainage conduits, culverts, open channels, dams, flood mitigation structure, drainage devices such as pits and water quality devices, Gross Pollutant Trap (GPT) as well as assets in Council's parks and recreation areas. These assets if they were built today, would cost approximately $225 million (excluding the cost of land and bulk earthworks on which the infrastructure is built).

The primary goal of this plan is to deliver the defined levels of service in the most cost-effective manner, addressing both current and future needs of the community. The key objectives of this plan include:

- Establishing detailed technical and operational service level criteria to meet the community's expectations.
- Developing and managing whole-of-life models to enable affordable and cost-effective management of the Stormwater Infrastructure assets.
- Developing and maintaining a 5-year forward works plan.
- Contributing to the development of Long-Term Financial Plan (LTFP) scenarios.
- Implementing ongoing auditing, compliance, and review practices for this plan.

To support the Long Term Financial Plan (LTFP), three scenarios have been developed—Decline, Improve, and Resolve—to demonstrate the opportunities and risks associated with various funding models within the LTFP and Asset Management Strategy.

Hawkesbury Council is dedicated to delivering the service levels outlined in the AMS. Under Scenario 3: Resolve, which requires an annual investment of approximately $30 million across all asset classes, the estimated available funding for Stormwater assets over the next 10 years will increase to $3.4 million per year. While this is a significant improvement, it still leaves a budget shortfall compared to the actual needs for maintenance, renewal, and upgrades.

Although Scenario 3 will substantially reduce the backlog of unfunded renewals, some asset needs will remain unmet each year, particularly in lower-priority areas. This scenario represents a proactive approach, but achieving full funding for all Stormwater asset requirements will still demand careful prioritisation and ongoing efforts to secure additional resources.

Finally, a detailed plan, including strategic actions, has been developed to enhance the organisation's asset management maturity.

INTRODUCTION & BACKGROUND

OUR CITY

The Hawkesbury is a unique area located in the Hawkesbury River Valley. It is the largest Local Government Area in the Sydney Metropolitan Region, covering approximately 2,776km². Our population is relatively small with 68,704 people calling the Hawkesbury home.

The Hawkesbury and its townships, rural villages and landscapes share a rich and enduring Indigenous and European cultural heritage. The area has significant geographical range and diversity.

Prior to European settlement the area was inhabited by the Dharug and Darkinjung peoples for over 40,000 years. The Hawkesbury River (known as Dyarubbin by the Dharug people) was a focus for those people. Its tributaries and floodplains provided abundant natural resources and were places of strong social and spiritual significance for the First Australians. It has been estimated that there were up to 3,000 Aboriginal people living in the Hawkesbury area in 1788.

European explorers first arrived in the Hawkesbury in 1789. It is the third oldest European settlement in Australia. Windsor (originally Green Hills) which was established in 1794, is one of five 'Macquarie Towns', four of which are located within the Hawkesbury. Governor Macquarie had a profound influence on the development and landscapes of the Hawkesbury, which included naming the townships of Windsor, Richmond, Wilberforce and Pitt Town and the layout of their streets, cemeteries and town squares.

The Hawkesbury Local Government Area straddles the divide between the urban metropolitan councils to its east and the rural councils to its west. While it is classified as part of Metropolitan Sydney, its unique blend of urban and rural settlements is uncharacteristic of the metropolitan area.

The Hawkesbury is therefore classed as a metropolitan-rural area by virtue of its location and its natural assets, including its natural beauty, its five rivers and their tributaries, its mountains, national parks and wilderness areas. The heritage towns of Windsor, Richmond, Pitt Town, Wilberforce and Ebenezer are all located within the Hawkesbury.

The agricultural lands that surround the Hawkesbury's towns and villages represent the oldest rural land holdings under continuous cultivation within Australia. The Hawkesbury also contains the oldest church, hotel and public square. Thompson Square, located in Windsor, was named and established by the then Governor Lachlan Macquarie in 1811 as recognition of the emancipist Andrew Thompson. Thompson Square and its immediate surrounds is also recognised as the oldest surviving public square in Australia.

These historical and cultural assets are actively being used to support cultural expression, tourism and economic activity. They remain integral to the future identity and prosperity of the Hawkesbury.

Council is committed to engaging the community on its future plans and strategies. It is important that Council continues to develop and discuss options with its community on the future funding of asset renewal and maintenance and the key areas of priority. A snapshot of the range of Council's Building and Structures assets is shown on the following page.

BUILDINGS | STORMWATER | ROADS | OPEN SPACE

DRAINAGE CONDUITS

Over **194km** of conduits constructed including RCP Pipes, Open Drains etc.

WATER QUALITY DEVICES

34 Devices installed around the Hawkesbury. These include:

- Underground Proprietary Devices
- Gross Pollutant Traps

DRAINAGE DEVICES

Over **8345** pits constructed including:

- Surface Pits
- Buried Pits
- Combined Kerb Inlet Pits
- 1923 Head Walls

FLOOD MITIGATION

Over **227** assets across 9 different types constructed at critical areas within the Hawkesbury including:

- 10 Levy Banks
- 40 Flood Gauges
- 36 Flood Gates
- 1 Detention Basin
- 37 Channels
- 35 Water Level Gauges

PURPOSE OF THE PLAN

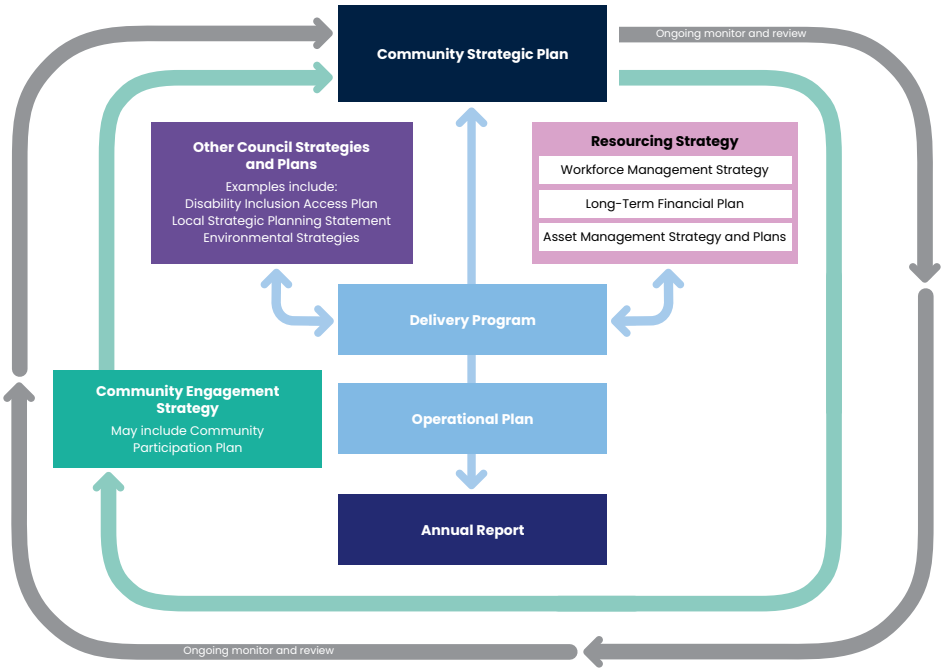
Asset management planning is a systematic process that aims to manage infrastructure and other assets on a lifecycle basis, with optimal funding to ensure the ongoing delivery of satisfactory levels of service to the community.

This plan demonstrates how Council utilises asset data to research, analyse and plan for the ongoing construction, maintenance and operation of the assets in the Stormwater group. This enables informed decision-making to create a sustainable and reliable environment for the community. This plan details for Council's Stormwater Assets group:

- The current state of assets
- The medium-term (10 Year) financial plan required to maintain the current levels of service
- A Five-Year Forward Works Program which outlines the renewal, upgrade, demolition, expansion or new construction of assets
- A set of strategic actions to enhance Council's asset management maturity
- Risks associated with infrastructure assets and critical assets
- The infrastructure assets health for various Long-Term Financial Plan (LTFP) scenarios
- The impact of future demand and changes of the technology on asset management practices
- The technical and customer levels of service

This plan reflects the Council's relevant strategic plans that outline community service levels and other critical planning matters required to ensure safe, equitable and quality access to the wide range of infrastructure and other assets owned and/or managed by Council.

This Stormwater Asset Management Plan supports and is to be read in conjunction with Council's Asset Management Strategy (AMS) and Asset Management Policy (which are reviewed and adopted annually by Council as part of the Resourcing Strategy under Integrated Planning and Reporting) and other key planning documents.



Office of Local Government - Integrated Planning and Reporting Framework 2021

GOALS AND OBJECTIVES

The primary goal of this plan in managing Council's infrastructure assets to deliver the defined levels of service in the most cost-effective manner for both current and future consumers. This requires understanding the current needs of the community, the current performance levels of the Council's strategic plans and anticipating future needs and requirement. Hence the key asset management objectives of this plan are:

- Developing and maintaining a 5 year forward works plan including scope of the works and estimated budget
- Developing whole of life models to estimate the average 10-year required budget and annual gap, and predict the future state of assets for various financial scenarios
- Informing the Asset Management Strategy (AMS) and Long-Term Financial Plan (LTFP)
- Establishing detailed technical and operational service level criteria to meet the community service levels of Council's strategic plans together with suitable performance monitoring criteria and processes
- Managing the impact of social, financial, political and environmental growth and change through demand management and` effective investment
- Identifying, assessing, monitoring and controlling risks
- Integrating with Council's adopted strategies, plans, long term financial plans so that lifecycle asset management is implemented at an organisational level
- The ongoing review and updating of the lifecycle models to take advantage of new information and cost-effective asset management methods as they arise

ASSET MANAGEMENT PRACTICES

ASSET CATEGORISATION

A comprehensive Infrastructure Assets Categorisation Framework has been developed, covering various asset groups. The current infrastructure asset management groups are:

- Roads and Transport
- Buildings and Other Structures
- Stormwater
- Open Space

Assets are further categorised based upon how they are used:

- Infrastructure assets provide services directly to the community (e.g. roads provide pedestrian and vehicular transport services across the LGA and parks provide active and passive recreation services for the community)
- Community assets are used to enable services to be provided or are used in the delivery of services to the community (e.g. library buildings are used to deliver library services and park amenities support provision of recreational services)
- Operational assets are utilised by Council directly to administer and facilitate its operations (e.g. Council's depots support the field teams who maintain the parks; and
- Commercial assets provide an income to Council (e.g. commercial shopping centres or heritage buildings converted to offices)

Some assets are non-depreciable. Generally, the non-depreciable earthworks and the purchase of the land associated with an asset happens only once with the initial asset construction or acquisition. These costs are not usually included in the asset lifecycle calculations after the initial creation of the asset. Land comprises all lands owned and or managed by council, including crown land, community land and operational land.

At this stage, AMPs have been developed for the four major Asset Management groups only (Roads, Buildings and Other Structures, Open Space and Recreation, and Stormwater). Lifecycle plans are not required for non-depreciable assets and Plant and Equipment and Other Asset groups are treated as current assets and costed as expenses in the year of construction/acquisition.

STORMWATER ASSET PORTFOLIO

The breakdown of the Stormwater Infrastructure assets covered by this plan is as follows:

- **Drainage Conduits –** pipes, culverts and open channels
- **Drainage Devices –** pits, junctions and headwalls
- **Water Quality Devices –** retarding basins, gross pollutant traps (GPT) and trash racks
- **Flood Mitigation Structures –** flood gauges, flood gates, detention basins, levy banks

It should be noted that Hawkesbury City Council is responsible for a vast majority of Stormwater Drainage infrastructure assets situated within the Local Government Area (LGA).

The current state of the Stormwater Portfolio is shown overleaf in **Dashboard – State of Stormwater Infrastructure Portfolio**. The Dashboard is a visual presentation of the portfolio that includes inventory, condition distribution, financial data, unfunded renewals, maintenance and renewal gap.

DATA COLLECTION AND ASSET MANAGEMENT SYSTEMS

Council utilises two software packages including Technology One and Brightly (formerly Assetic) to cover databases, works, financials, supply chain, mapping, and modelling tools as part of its asset management practices. The effectiveness and maturity of these practices can be enhanced through further integration of these tools. The asset software packages in use are:

- **Technology One (T1) Products Cloud Based:** Provides enterprise asset management for the corporate asset register, works management, asset accounting, request management, financial management, and supply chain management
- **Assetic Predictor:** A predictive tool for creating various models and scenarios for long-term financial planning and the development of capital works programs
- **ArcGIS Pro:** Council's corporate GIS (Geographic Information System) used to store all spatial data of assets
- **IntraMaps Cloud:** A GIS tool, also a T1 product, integrated with corporate systems for mapping queries, reporting, and visual presentation purposes
- **Field App:** A cloud-based, user-friendly mobile application from T1, working under an integrated platform used by staff for works management, asset inspections, on-site data collection, and register updates

State of Assets Infrastructure Portfolio

All Infrastructure Assets | Roads | Parks | Stormwater Drainage | Buildings and Other Structures

Current Replacement Cost
$225,659,000

Current Average Annual Budget
$900,001

Requried Average Annual Budget
$3,384,885

Annual Renewal Gap (10 Years)
$2,484,884

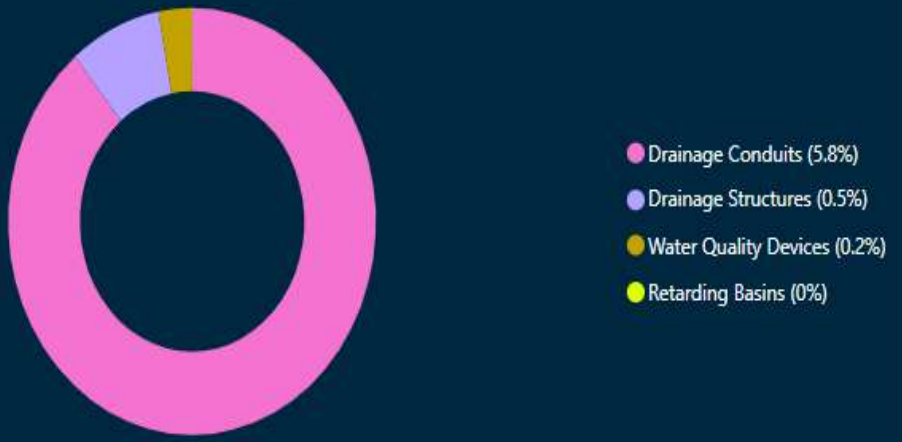
Unfunded Renewal
$1,600,000

Annual Depreciation
$2,198,110

Asset Category	Current Replacement Cost	Written Down Value	Annual Depreciation	Unfunded Renewal	Required Average Annual Budget (10 year)	Current Average Annual Budget (10 year)
Drainage Conduits	$200,953,000	$149,293,000	$1,921,210	$1,000,000	$3,014,295	$801,465
Drainage Structures	$18,092,000	$14,614,000	$172,560	$500,000	$271,380	$72,157
Water Quality Devices	$6,442,000	$4,419,000	$2,010	$0	$96,630	$25,693
Retarding Basins	$172,000	$147,000	$102,330	$100,000	$2,580	$686

Condition Distribution

Budget Breakdown (Average 10 Years)



LEVELS OF SERVICE

In part, this Asset Management Plan has been prepared to facilitate consultation about levels of service with the broader community. Future revisions will incorporate customer feedback on service levels and the costs of providing these services. This will help Council align the required level of service, associated risks, and consequences with the community's ability and willingness to pay.

Based on our current understanding of the performance of our Stormwater Infrastructure, financial analysis indicates that Council is likely to underfund existing service levels in the medium to long term.

If this funding shortfall persists, the following impacts are expected:

- **Deteriorating assets:** Without sufficient funding, the condition of Stormwater Infrastructure will decline, leading to a reduction in service quality and potential safety concerns.
- **Widening asset renewal gap:** The gap between the required and available funding for renewing assets will continue to grow, further threatening long-term financial sustainability.
- **Generational cost shifting:** Future residents will bear the financial burden of renewing assets that have deteriorated due to underfunding today, resulting in significant generational cost-shifting.
- **Inability to meet demand for new or upgraded services:** The Council will be unable to accommodate growing demand for new, expanded, or upgraded facilities, limiting the community's access to modern services and infrastructure.
- **Unfunded Renewal Impact:** Under the current funding scenario, the Council's unfunded asset renewal works will continue to grow. The existing budget shortfall means that a large proportion of required maintenance and renewal work will need to be deferred or carried out reactively. This reactive approach will increase long-term costs as assets deteriorate further and require more expensive interventions later. The unfunded renewal not only represents a financial liability but also contributes to the gradual degradation of service levels. Community expectations for asset quality and functionality will be harder to meet as more projects are delayed due to limited resources.
- **Prioritisation and Risk-Based Approach:** Given this shortfall, the Council will prioritise asset works based on asset condition, risk, and criticality, with a focus on ensuring legislative compliance and minimising safety risks. Non-critical assets and lower-priority projects will face delays, which could lead to further reductions in service quality and increased community dissatisfaction over time.

While the Council will continue to improve its understanding of asset conditions and refine service level targets, the reality of the increasing funding gap means that the backlog of works will grow unless additional funding sources are identified.

Future updates to this Asset Management Plan will guide long-term financial planning to ensure that renewals and upgrades are strategically funded to meet capacity demands and essential service levels. As part of its implementation of the Integrated Planning and Reporting Framework (IP&R), Council consults the community during the development of the Community Strategic Plan, Delivery Program and Operational Plan.

This AMP relies on ongoing consultation to establish and evolve the Community Levels of Service defined below:

CUSTOMER LEVELS OF SERVICE

The Customer Levels of Service are evaluated based on the following service attributes for both current and future expectations. In managing these attributes, Council must often balance them against one another, as efforts to improve one attribute may have a detrimental effect on another. For example, temporary closures to address quality or safety issues can limit capacity and utilisation, directly impacting service accessibility and availability:

- **Quality:** Assesses how well the service meets expected standards in terms of condition and overall satisfaction. This includes evaluating maintenance levels, condition assessments, and user satisfaction surveys. For example, council stormwater networks are maintained and serviced adequately with an aim to reduce maintenance-based complaints by 10% and maintain high satisfaction levels through targeted improvements.
- **Function:** Determines whether the asset is fit for its intended purpose. This involves functionality assessments and user feedback. For instance, Stormwater Infrastructures are evaluated to ensure they meet functional needs, with ongoing improvements based on evolving community requirements. However, prioritizing functional improvements or addressing functionality issues may require adjustments that impact the quality or capacity of the asset, underscoring a balance between functionality and other service attributes.
- **Accessibility**: Examines whether the stormwater network has adequate capacity and is utilized effectively. This includes analysing the effectiveness of our drainage system to ensure that it has the capacity to deliver adequate service covering various types of storm events affecting our LGA.

A summary of the current performance measures, current performance data, and expected performance based on current funding levels is provided in **Table 1– Customer Level of Service** on the following page.

Balancing Community Demand and Statutory Requirements

The Council's service delivery is also influenced by changing community demand and evolving statutory requirements. As community expectations for modern and accessible facilities increase, the Council must prioritise asset management actions that may require trade-offs across service attributes. Additionally, new statutory requirements may necessitate reallocation of resources, potentially impacting the balance between quality, functionality, capacity, and accessibility.

The key Community Levels of Service applicable to all asset groups, with a focus on balancing these competing priorities, are:

Alignment with Community Requirements: Ensuring all levels of service meet community needs identified through engagement and consultation processes, balanced with the Council's capacity to sustain these services.

Infrastructure Condition: Maintaining asset conditions through funding that considers community demand and compliance requirements, while recognising the impact on other service levels.

Commitment to Growth: Expanding and enhancing the Council's infrastructure network to address future community needs while managing trade-offs between service levels such as quality, function, and accessibility.

Table 1– Customer Level of Service

Service Attribute	Service Objective	Asset Category	Performance Measures	Expected Trend (10 years)
Quality	All drainage conduits and devices are maintained and serviced adequately	All Stormwater Conduits, pits and devices	Customer request system and complaints related to maintenance Condition assessment Customer satisfaction survey results	Reduction in maintenance-based complaints by 5% Increase and maintain high satisfaction levels through targeted improvements
	Water Quality Devices GPT(Gross Pollutant Traps) are maintained and serviced adequately applying principle of WSUD	GPTs (Gross Pollutant Traps)	Customer Requests systems and complaints related to maintenance, inspection reports and maintenance records	Reduction in maintenance-based complaints by 5% Increase and maintain high satisfaction levels through targeted improvements
Safety	Prompt response to customer request/ complaints	Drainage conduits and devices	Customer request system and complaints related to maintenance (works requests) Condition assessment Customer satisfaction survey	Reduce the average response time by 10%.
Function	Drainage conduits and devices are fit for purpose and meet the functional needs.	Drainage conduits and devices	Responsiveness to customer request / complaints	Continuous improvement in customer response and effective asset maintenance
Capacity	Drainage conduits and devices have adequate capacity to comply with design standards	All Stormwater Conduits, pits and devices	Localised flooding and potential system surcharge	Assess and determine capacity require to meet demand

TECHNICAL LEVELS OF SERVICE

To deliver the Community Levels of Service Council's asset managers convert them to Technical Levels of Service which are operational and/or technical measures of performance, tailored to the assets concerned. These technical measures relate to the activities and resources required to best achieve the desired community outcomes at the least possible ongoing cost.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – Addition of a new service that did not exist previously (e.g. New GPT, new culvert, headwall, conduits, pits, dish drain)
- **Operation** – Regular activities required to provide services and maintain operational standards
- **Upgrade** – The activities required to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size)
- **Maintenance** – The activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. Jet cleaning, removal of vegetation)
- **Renewal** – The activities that return the service capability of an asset up to that which it had originally provided (e.g. replacement of a pit at end of life)
- **Sustainability** - Implement measures to enhance environmental sustainability.
- **Flood Resilience Management** - Ensure assets are resilient to flood events.

Council aims to provide the following Technical Levels of Services across all asset groups:

- Action all required renewal, upgrade, maintenance, and acquisition plans through lifecycle modeling and budgeting.
- Continuously improve models through constant recalibration of logic and parameters used
- Continuously improve adopted plans by reflecting new funding scenarios (Grants and external funding options) and condition assessments of assets
- Continuously improve the technology used by monitoring technological advances, using such technology when it becomes cost-effective to do so, and participating in or leading research and innovation as opportunities arise

Specific Technical Levels of Service for the Stormwater Asset Group are outlined in **Table 2 – Technical Level of Service** on the following page.

Table 2 – Technical Level of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance	Expected Trend Based on Planned Budget
Acquisition	Meet/address a new demend for servicing (e.g. assets created dung new subdivision via Development Process)	Council DA Conditions and Technical Standards Relating to Drainage and also covering discharge into private properties	Assets inspected and append to Asset Register	Increased number of new assets created due to new developments
Operation	Water Quality assets are inspected and cleaned	Efficiency and reliability of service delivery	Devices are cleaned at regular intervals	Improved efficiency and reliability of operation and maintenance
Maintenance	Annual Inspection of drainage devices on road network for defects and making them safe	Number of outstanding drainage defects	CCTV inspection of drainage assets commenced in 2024 and defects are now being identified progressively	Reduce the number of outstanding defective assets
Renewal	Reduce unfunded renewal of drainage conduits and related assets in poor or very poor quality	Current unfunded renewal	Unfunded renewal are now being identified by CCTV inspection of stormwater conduits	No reduction in unfunded renewal
Flood-Resilience Management	Ensure stormwater assets are resilient to flood events, ensuring 5% AEP are applied to urban related stormwater network	Implementation and effectiveness of flood resilience measures	Basic flood resilience measures are in place and additional measured are needed for new renewal and construction	Enhanced Flood Resilience measures and improved effective with increased budget and innovative technology.
Flood-Resilient design and construct	Ensure new and renewal of stormwater assets meet flood-resilience standards	Resilience against floods	Incorporated flood resilience materials and methodology	Increases percentage of flood resilient stormwater assets including renewals
Flood Mitigation Measures	Implement measures to reduced the impact of flooding such as catering for overland flow	Number and effectiveness of flood mitigation measures	Basic measures in place and additional needed.	Expand and enhance Flood mitigation measures with additional funding
Emergency Preparedness and Response	Ensure effective preparedness and response to Flood events	Development and Testing of Emergency Preparedness plans	Develop and maintain Flood evacuation routes	Regular review and update with improved funding
Maintenance of Flood Mitigation Infrastructure	Maintain, existing flood mitigation infrastructures.	Quality reactive maintenance of flood mitigation infrastructures	Quality records of maintenance activities of flood mitigation infrastructures	Implement preventive maintenance schedule with increased funding
Monitoring and Evaluation	Continually monitor flood risks and evaluate resilience measures	Regular monitoring reports and evaluation of flood resilience measures	Periodic monitoring and evaluation	Enhanced monitoring and evaluation process with advanced technology

DESIGN AND CONSTRUCTION STANDARDS

Hawkesbury City Council ensures all new Stormwater assets and upgrades comply with the National Construction Code (NCC) and all relevant Australian Standards (AS). These regulations guide structural integrity, safety, accessibility, and environmental performance.

Additionally, the Council aims to integrate sustainability principles aligned with its Environmental Sustainability Strategy. Where applicable, new projects aspire to meet Green Star or Infrastructure Sustainability Council of Australia (ISCA) accreditation to enhance long-term environmental outcomes.

MAINTENANCE STANDARD

Maintenance standards for stormwater infrastructure assets at Hawkesbury City Council are established to ensure the provision of high-quality, safe facilities for all users while aligning with the Council's budgetary constraints. These standards are informed by industry benchmarks, risk assessments, and community feedback, and they cover routine maintenance, repair, temporary measures, and emergency work.

Routine maintenance tasks are prioritised based on the asset's usage, susceptibility to deterioration, and cost-effectiveness, with specified response times for repairs to ensure timely completion. Temporary measures are implemented to mitigate risks until permanent solutions can be applied, and emergency works are promptly executed to address public safety concerns.

Comprehensive documentation and regular reporting on maintenance activities support informed planning and funding decisions, ensuring that the Council continues to meet the community's needs effectively. Future revisions of the Asset Management Plan will further refine these standards, incorporating new industry practices, technological advancements, and ongoing community engagement to continuously improve maintenance outcomes.

FUTURE DEMAND

DEMAND FORECAST

Hawkesbury City Council has a pivotal role in providing essential services and infrastructure to the community. The future demand for these assets extends beyond mere population growth; it encompasses a wide array of factors that could influence how services are delivered.

Hawkesbury City Council is committed to fostering a safe and sustainable environment for both current and future generations. To achieve this, the Asset Management Plan (AMP) identifies key drivers that may impact the provision of services to the community in the future. The objective is to ensure the assets can adapt flexibly to evolving demands, ensuring their relevance over the next decade and beyond. The drivers are summarised in **Table 3 - Future Demand** below.

KEY DRIVERS AFFECTING DEMAND FOR ASSETS

Changes in Demographics:

- Population Change: As population increases, so does the demand for community facilities, public amenities, and essential services. This AMP takes into account the projected growth from 68,156 residents to an estimated 85,050 by 2036.
- Change in Population Density and Centre Boundaries: As urban centers such as Windsor and Richmond experience increasing population densities, the demand for infrastructure and services will intensify in these areas. The Asset Management Plan (AMP) anticipates that higher density will necessitate the expansion or upgrading of existing network to accommodate the concentrated population. Additionally, any adjustments to center boundaries will require strategic planning to ensure that infrastructure development keeps pace with shifting demographic trends.

Technological Factors

Today, technology is rapidly changing, leading to new methods and materials that may offer opportunities to manage assets in better and more cost-effective ways. These technological advancements need to be monitored and their likely impacts need to be identified and reflected both in the asset budgets and the strategic plans. This is to enable a certain degree of flexibility in the plans to take up beneficial changes as opportunities arise. Some of the identified emerging technological improvements are as follows:

- Drainage Conduits

- New materials that are more cost effective and sustainable for the future community. Currently a vast majority of council's pipes are reinforced concrete pipes as they are proved to be the most suitable material for council drainage purposes. Emerging technologies show environmentally sustainable materials that are as durable as RCP's however have much higher unit rates at this stage. With further research and commitment to technological advancement, Council will explore innovative technology when applicable.

-New construction methods that are time and resource efficient.

- AI CCTV technology to improve the speed, quality and costs involved in conducting routine pipe inspections. This would also enable better allocation of human resources with an improved quality in the condition/defect assessment of pipe linings.

- Drainage Devices

- New Drainage Device construction technique and material that is more environmentally sustainable.
- Sensors and other devices that can be integrated with Drainage Devices for data collection on current capacity and condition.

- Water Quality Devices

- New Device type, construction technique and material that is more environmentally sustainable.
- Sensors and other devices that can be integrated with Devices for data collection on current capacity and condition.

Environmental Factors:

- Climate Change: The increasing frequency and severity of natural disasters, such as floods and extreme heat, necessitate the development of more resilient infrastructure. As climate challenges escalate, Council assets must not only be designed or upgraded to withstand these environmental impacts but also adapt to serve crucial roles in community resilience.
- To enhance resilience in flood-prone areas, the Council will prioritize investments in flood-resistant construction techniques and materials, ensuring that infrastructure can effectively mitigate risks while continuing to support essential services. This approach reinforces the importance of adaptive drainage designs that not only safeguard physical structures but also enhance the overall safety and well-being of the community during climate-related disruptions.
- Sustainability Initiatives: The shift towards sustainable development will impact on how assets are managed, potentially increasing the demand for new drainage infrastructure materials that are more sustainable and environmentally friendly.

Community Expectations:

- Service Quality: As resident's expectations for reliable stormwater network, there will be increased pressure on the Council to deliver such a network with less flooding issue and better drainage management.

Aging Infrastructure:

- The Council's aging stormwater infrastructure network is resulting in increased maintenance costs and reduced efficiency. As these assets continue to age, maintenance challenges are expected to worsen, which may heighten safety risks and diminish service quality.

DEMAND MANAGEMENT STRATEGIES

To address these identified drivers, the following demand management strategies will be employed:

- **Monitoring and Review:** Regular monitoring of demographic trends, economic conditions, and environmental factors will guide the timely adaptation of infrastructure to meet community needs. This will be supported by an ongoing program of service reviews, ensuring that services remain aligned with community needs, operational efficiencies, and Council's strategic objectives.
- **Strategic Planning and Asset Rationalisation:** Aligning capital projects with strategic plans ensures that the development of new assets and the upgrading of existing ones are in harmony with projected demand. This approach includes a rationalization of underutilized or non-essential assets where feasible to better match demand and resource allocation.
- **Community Engagement:** Ongoing consultation with residents will help prioritise projects that reflect community preferences and particularly around rationalising or enhancing key assets, ensuring service quality and accessibility. Implementing a proactive maintenance and replacement plan will mitigate the impacts of aging infrastructure, ensuring continued safety and efficiency while potentially extending the life of assets deemed essential through service reviews.
- **Legislative Compliance:** Staying ahead of legislative changes by proactively planning for necessary upgrades ensures that all assets remain compliant with current standards and regulations, particularly for assets with high community dependency.
- **Resilience and Contingency Planning:** Adapting to meet evolving environmental and social challenges is essential, particularly given Hawkesbury's flood-prone nature. Strategies will include implementing flood-resilient designs and preparing for temporary facility closures if necessary. In flood-prone areas, infrastructure investments will prioritise resilience, ensuring that Council can continue to support the community during periods of disruption. To optimise resource allocation, asset rationalisation will focus on facilities that offer greater resilience and community value. For example, if certain assets become underutilised or unsustainable due to frequent flood risks, the Council may consider options such as repurposing, relocating, or divesting these assets. This strategic approach enhances infrastructure resilience and provides adaptable, long-term solutions that safeguard both community needs and Council resources.

Table 3 - Future Demand

Demand Driver	Current Position	Projection	Impact on Services	Demand Management Plan
Population Growth	68,704 – the number of people based on last Estimated Resident Population	Projected Growth of 85,050 by 2036	Increased demand for stormwater drainage related services	Manage and review proposed Strategic plans to better align capital projects to optimise secured funding for further community development and growth
Change in population density and industrial development	Varying population densities across the council area with urban centres increased length and GVM vehicles to use council roads	Population density in urban centres is expected to rise, leading to increased usage of infrastructure	Increase demand for stormwater assets is expected to rise, leading to increased usage of infrastructure	Monitor trends on increasing population density and maintain regular inspection and condition assessment programs to monitor and control deterioration
Increased frequency of extreme weather events such as flood and droughts	Without National action and global action weather conditions will be more volatile and unpredictable	Increased frequency of events such as 1% AEP flood events Above average rainfalls will stress the capacity of the existing stormwater systems	High frequency of flooding related issues and accelerated deterioration of stormwater assets	Implementation of catchment studies, flood modelling to identify areas that require pipe upgrades. Adoption emergency warning system for sudden and unpredictable weather events
Legislative requirement or government policy change	Current compliance with existing regulations	Possible changes in regulatory regimes, legislations requiring updates to standards and codes.	Mandatory upgrades to ensure compliances with new regulations associated potential increase in costs.	Comply with legislative and changes and proactively plan for necessary upgrades to ensure compliance.
Climate change	Existing stormwater assets may not fully meet flood resilient demands	Possible changing in regulatory regimes and implementation of action plans	Enhanced need for flood-resilient infrastructure to minimise service disruptions and damage	Incorporate flood resilience into asset creation, renewal and amplification process
Increase in customer expectation	High expectation for modern accessible, well-connected and maintained service.	Rising expectations for state of the art well maintained services	Increased demand to deliver high quality services and infrastructure	Regularly engage with the community to understand expectations and prioritise projects and programs that enhance service quality and user satisfaction
Ageing infrastructure	Existing drainage assets continue to age, leading to higher maintenance requirements, costs and reduced efficiency	Continued aging of infrastructure leads to higher operation and maintenance cost. Greater frequency of service impacts, infrastructure failures.	Increased maintenance costs, potential public safety hazards, and decreased user satisfaction, impacts on third party properties	Implement a proactive maintenance and replacement plan to ensure aging infrastructure is upgraded or replaced, including relocation

RISK MANAGEMENT

Effective risk management is vital for Hawkesbury City Council to safeguard its infrastructure, community, and service assets, many of which are essential for the community's day-to-day functioning. Key assets, such as drainage pipes, pits, open channel that provide critical services, must remain operational to avoid disruptions that could affect the livelihoods and well-being of Hawkesbury residents. The Risk Management Framework (RMF) guides the Council's approach to managing infrastructure risks, while the Risk Appetite Statement sets acceptable risk levels, ensuring that all risk treatments are aligned with the Council's tolerance for risk exposure.

The council's risk management approach for infrastructure assets is rooted in the principles of ISO 31000:2018 and complies with guidelines from the Office of Local Government. These principles ensure a structured approach to identifying, assessing, managing, and mitigating risks.

Key Risk Categories

A comprehensive assessment of the Council's asset portfolio identified risks in several impact categories. Each risk is evaluated based on likelihood and impact, and risks are assigned ratings aligned with Council's Risk Appetite Statement. Categories include:

- People Impacts: Civil unrest, workforce health and safety (WHS), and community relations.
- Environmental Impacts: Climate change, biodiversity loss, natural hazards, and public health concerns.
- Financial Impacts: Economic fluctuations, fraud, theft, and financial management.
- Reputational Impacts: Risks to Council's public image, influenced by media coverage, community feedback, and corporate values.
- Compliance Impacts: Legislative adherence, contractor management, and Council policy compliance.

These risk categories ensure Council's actions align with the RMF while adhering to Council's risk tolerance, supporting sustainable, high-quality service delivery within acceptable risk boundaries.

Risk Assessment and Mitigation

Each identified risk is prioritised based on risk appetite. Risks that exceed the Council's risk tolerance are escalated to appropriate management levels, including the General Manager if required. Risk owners are tasked with implementing SMART risk treatments (Specific, Measurable, Achievable, Relevant, Time Framed), ensuring all actions are aligned with the RMF and are regularly monitored for effectiveness.

For risks that cannot be mitigated to within the risk appetite, the Risk Owner must escalate these to the Council for review and potential intervention, following the escalation protocol set forth in the Risk Appetite Statement. Specific risk registers have been developed for the Stormwater asset group as per **Table 4 - Risk Register** below.

Table 4 - Risk Register

Asset or service at Risk	What can happen	Rating	Risk Treatment plan	Residual Risk
Major Culverts	Some major culverts function as bridges for vehicles and pedestrians. Poor maintenance and/or under capacity assets can cause significant impact on humans and environment, increasing costs sustainability	High	Periodically monitoring of major culverts by structural engineers and hydraulic engineers to identify defects including preparedeness to cater for impact of climate change	Low
Drainage Conduits and devices	Deferred Maintenance / Renewal activities due to lack of funds resulting in premature failure	High	Consistent review and adaptation of current strategy and financial models	Low
Drainage conduits and devices	Emergency situation due to unforeseen extreme weather conditions. Events such as flooding, or pipes bursting causing damage to road surfaces can result in major community disruption	Medium	Prepare emergency plans with emergency service SES, AFP. RFS Fire and Rescue NSW	Low
Drainage conduits and devices	Lack of internal resources(Stormwater Engineers and designers) to resolve sources identified on critical assets	High	Review operational strategies to assist staff requirements and capabilities to deliver all strategic plans	Low
Water Quality device	Lack of available funds resulting in premature failure of assets. Can cause disruption in the stormwater system.	Medium	Consistent review and adaptation of current strategy and financial models	Low
Water Quality Device	Deferred maintenance and / or Renewal activities can cause disruptions in the stormwater system	Medium	Secure additional funding for additional resources	Low
Stormwater pipe culverts	Possible structural and/ or functional failure of assets due to poor asset conditions and deterioration	High	Periodically monitoring of piped culvert using CCTV inspections to identify defects.	Low

CRITICAL ASSETS

Critical assets are defined as those which have a high consequence of failure and would result in significant loss, reduction and/or a complete halt in the service provided. Such assets must be identified along with their mode of failure and their impact on the community. Through the proactive investigation of these assets, Council can plan for appropriate actions to prevent premature failure. Such actions are:

- Condition assessment programs: Regular evaluations to monitor asset health and identify potential issues before failure occurs.
- Regularly scheduled maintenance: Ensuring assets receive timely upkeep to prevent costly repairs and service interruptions.
- Adequate funding to execute planned renewal: Aligning renewal budgets with risk priorities to ensure that critical assets have adequate resources to maintain reliable service.

Critical Stormwater Infrastructure assets have been identified and listed in **Table 5 - Critical Assets** below.

Table 5 - Critical Assets

Critical Asset(s)	Failure Mode	Impact
Major culverts and drainage conduits under the road with heavy traffic such as regional road network	Leaks in the conduits could cause asset to gradually fail leading to catastrophic consequences. Sudden damage such as sink holes could appear	Unplanned closure of Roads along with vehicular and pedestrian accidents and significant damage to council assets leading to emergency work
Drainage assets located in high pedestrian traffic areas	Structural failure or major defects that renders stormwater pits collapsing	Increased risks of potential for Pedestrian accidents
Drainage devices located in lower areas of a drainage catchment such as Richmond Lowlands and Pitt Bottom areas etc	Structural failure or major defects that renders stormwater pits collapsing	Increased potential for Pedestrian Accidents with risk of flooding and potential injury and associated financial liability
Water quality devices located in high priority areas such as declared dams and flood gates such as declared dams and flood gates in various locations	Failure and under performance of Water quality devices	Risk to health and environment potential pollution of water ways

LIFECYCLE MANAGEMENT PLAN

Strategic Asset Management Objectives

One of the primary goals of Strategic Asset Management is to minimise long-term costs while achieving the service levels expected by the community. Lifecycle asset management plans are essential for prioritising renewals at optimal times and utilising the most effective methods to ensure the lowest possible whole-of-life cost for each asset.

Forecasted Asset Lifecycle Costs

To provide the required service levels, this Lifecycle Management Plan includes all costs necessary for asset operation, maintenance, renewal, upgrade, acquisition, and disposal across their lifecycle. Forecasted funding estimates help determine when and how much to invest in each phase to minimise overall costs.

Funding Required

To adequately sustain and improve stormwater drainage assets, the Council requires approximately $3.7 million per year for the stormwater assets. This figure includes:

- Renewal Needs: An estimated $3.4 million annually is required specifically for asset renewals to replace assets nearing the end of their useful life, preventing deterioration and sustaining long-term asset functionality and safety. Without this dedicated renewal funding, assets are likely to degrade more quickly, leading to increased costs and potential disruptions to community services.
- Operations and Maintenance:Approximately $0.33 million annually, which is essential to ensure safe, functional, and well-maintained assets for the community.

Current Funding Levels

According to the Long-Term Financial Plan (LTFP), the Council's current annual budget provides only $0.9 million for renewals, significantly below where as the $3.4 million required to maintain asset condition. Combined with $0.33 million for operations and maintenance, this brings total available funding to $1.2 million per year, leaving a substantial gap in renewal funding. This limited renewal allocation significantly restricts Council's ability to replace aging assets in a timely manner, increasing the likelihood of accelerated asset deterioration and higher future costs.

Funding Gap

The $2.5 million annual shortfall in renewal funding has significantly increased compare to what was projected in the 2017 Asset Management Plan. This widening gap reflects rising costs and mounting pressures on asset management resources. Closing this gap is critical for sustaining asset conditions and aligning with community expectations, especially as environmental and regulatory demands continue to increase.

Achieving Optimal Renewal at the Lowest Whole-of-Life Cost

Council's renewal strategies are designed to minimize lifecycle costs by timing renewals effectively and balancing initial investments with long-term maintenance needs. While the baseline approach relies on like-for-like replacements, community demands are evolving toward enhancements in stormwater infrastructure. Council actively seeks grant funding (e.g., Western Sydney Infrastructure Grants) to address these needs and enhance facilities, extending beyond standard renewal efforts.

Given the escalation of climate-related risks, the Council's Lifecycle Management Plan prioritises future-proofing assets through resilient designs, such as incorporating heat refuges or flood-resistant features, where feasible. However, without closing the renewal funding gap, many of these resilience improvements may remain underfunded, underscoring the need for immediate and strategic financial adjustments.

PHYSICAL PARAMETERS

Data Collection

The first step in achieving asset management objectives is to build a highly reliable database that includes inventory, condition, and financial information. A condition assessment of stormwater assets for revaluation purposes is currently in progress and the next comprehensive revaluation scheduled for the 2025/26 financial year. However, an additional CCTV inspection program needs to be developed to collect condition data at the component level (service, structure) and to establish a maintenance defect register for stormwater drainage portfolio.

Asset Categoirisation and Useful Lives

The design useful lives of Council's infrastructure assets are based on numerous factors, including:

- Usage of each asset
- Advice and discussion with asset stakeholders
- The cost and frequency of proactive and reactive maintenance
- Lifecycle cost and degradation models

The useful lives used for Council's lifecycle asset management practices are listed in Attachment H – Useful Lives of Assets Categories and Subcategories.

Model Scenarios

Council has utilised an asset lifecycle modelling tool called 'Assetic MyPredictor' to develop unique financial models for various scenarios based on the nature and behaviour of each asset category. Each model has been tailored with different triggers and criteria for treatments to best reflect currently practiced methodologies for renewal, maintenance, upgrade, acquisition and disposal of assets.

Life-cycle models are used to estimate future funding requirements needed to maintain the current level of service or to predict the future state of assets under various funding scenarios.

LONG-TERM FINANCIAL PLAN SCENARIOS

A financially sustainable Council, as defined by the NSW Government, is one that over a long term can generate sufficient funds to provide the level and scope of services and infrastructure agreed with its community through the Integrated Planning and Reporting Process. (Source: NSW Government, 2012).

The Long-Term Financial Plan considers various lifecycle asset management funding strategies, over a 10-year period, to address three key issues that pose significant financial risk to Council:

Unfunded Renewal: Value of assets that have been delayed from their planned renewal

Renewal Gap: The gap between the required and current average annual renewal expenditure

Maintenance Gap: The gap between the required and current average annual maintenance expenditure

Council's Long Term Financial Plan 2025 – 2035 has been developed with the aim of having an appropriately funded capital works program and maintaining a "fit for purpose" asset base as described by Asset Management Strategy.

The objective is to allocate sufficient funds each year to an asset reserve and capital budget to cover the required funds for the maintenance and renewal of the Council's existing infrastructure, as outlined in the asset lifecycle models.

The 10-year asset lifecycle model has been develop using Assetic Predictor. . The model identifies the optimal strategy to fund the maintenance and renewal of infrastructure assets and to address and clear current unfunded renewals, based on budget availability.

Three scenarios have been developed (Decline, Improve and Resolve) to demonstrate the opportunities and risks of various funding models across the Long Term Financial Plan and Asset Management Strategy. These documents link directly, with the LTFP providing the necessary long term funding strategy to achieve the effective asset management described in this plan. The scenarios demonstrate what would occur to Council's assets under different funding models across the next 10 years.

This information helps Council and the community understand the financial needs and effects of various levels of funding. This Asset Management Plan focuses on the assumed spending on asset maintenance and renewal, with the LTFP describing further variables within each scenario. As asset renewal is the major financial challenge facing Council, these variables are the predominant factor impacting each scenario.

The specification of funding for new assets has not been addressed in this iteration of the AMP. Typically, allowances are made for the acquisition of new assets through construction and other sources to support growth in Council's infrastructure network annually. This is achieved through various grants and commitments made by the Council for the community. Generally, new assets are funded through grants (with or without a Council contribution), Section 7.12 (formerly s94) funds, and/or the sale of other assets.

However, predicting these funding sources with certainty is challenging until the new asset projects are developed. A strategic action of this plan is to develop methods, if possible, to account for the likely impact of new assets on existing renewal funding sources.

Based on recent estimates, the annual depreciation, operational, and maintenance costs of infrastructure assets have increased by approximately $850K due to donated, newly built, and upgraded assets in the 2023/24 financial year. The acquisition of new assets due to development or construction, as well as the upgrading of existing assets, will increase the funding required for the maintenance, operation, and renewal of infrastructure assets. This could exacerbate the unfunded renewal and renewal gap. Below is the Scenario Overview – Whole Asset Portfolio (Roads, Stormwater, Building and Open Space).

Based on recent estimates, the annual depreciation, operational, and maintenance costs of all infrastructure assets have increased by approximately $850K due to donated, newly built, and upgraded assets in the 2023/24 financial year. The acquisition of new assets due to development or construction, as well as the upgrading of existing assets, will increase the funding required for the maintenance, operation, and renewal of infrastructure assets. This could exacerbate the unfunded renewal and renewal gap. Therefore, Council would need to adopt strategies to pause the construction of new assets until the current funding gap is significantly addressed or resolved.

Scenario 1: Decline

Scenario one describes the current trajectory of business as usual and is driven by Council's current level of renewal spending ($14m annually) and business as usual practices on asset maintenance and renewal, without significant increases across the 10 year life of the strategy. The modelling on this scenario suggests that legislative and assumed increases to Council's revenue will not provide sufficient funding to maintain the condition of assets and current service levels.

This level of investment will lead to a significant decline in asset condition over time and an accelerating deterioration of assets, increasing the projected unfunded renewal and growing costs. The issue will continue to compound if funding strategies are not in place. Under this scenario, assets would only be renewed when they become unsafe or completely unusable.

It is likely that Council would need to reduce community, cultural and recreation services or close unsafe facilities so that funds can be redirected to keeping essential infrastructure such as roads safe and functioning. This option provides no capacity to fund new programs, take advantage of key grant opportunities or delivery on emerging community priorities.

Scenario 2: Improve

Scenario two will allow Council to shift towards a more preventative asset management approach, rather than waiting for assets to deteriorate to the point of failure and where renewal is at its most costly. This scenario assumes a $25m annual investment in renewal. Under this funding arrangement, it would take approximately 20 years to clear Council's unfunded renewals gap. All assets would gradually improve across the Hawkesbury under this arrangement.

This option will also provide some scope to reconfigure resources to fund new programs, leverage grant opportunities and invest in emerging community priorities within the Hawkesbury Community Strategic Plan.

Scenario 3: Resolve

Scenario three involves the optimisation of Council's asset renewal by matching the required funding with actual investment across the life of the strategy. This would allow Council to take a proactive asset management approach, focusing on betterment and resilience for the long term. Essentially, the quicker Council invests the more long lasting the financial benefits will become.

This scenario assumes a $30m annual investment in renewal. Under this funding arrangement, it would take approximately 10 years to fully resolve Council's unfunded renewals gap. Assets conditions would significantly improve across the Hawkesbury under this arrangement.

This option will also provide significant scope to reconfigure resources to fund new programs, leverage grant opportunities and invest in emerging community priorities within the Hawkesbury Community Strategic Plan. The accelerated investment in assets will lead to greater future opportunities for service delivery.

ALIGNMENT OF SCENARIOS WITH CAPITAL WORKS PROGRAM FUNDING FOR STORMWATER ASSETS

The table below illustrates how the three scenarios—Decline, Improve, and Resolve—translate into specific funding levels and strategic priorities for Stormwater assets under the Capital Works Program (CWP). It highlights the implications of each scenario in terms of budget allocation, maintenance strategies, compliance upgrades, community impact, and future planning.

Aspect	Scenario 1: Decline	Scenario 2: Improve	Scenario 3: Resolve
Budget Range	$900,000	$2,900,000	$3,400,000
Strategic Focus	Reactive repairs and essential maintenance.	Small scale renewal with essential maintenance	Comprehensive Renewal and Maintenance
Preventative Maintenance	Minimal preventative actions; primarily reactive.	Targeted preventative maintenance introduced to reduce long-term reactive costs.	Comprehensive maintenance strategy targeting all major assets in built up areas.
Renewal	Small-scale Renewal of deteriorated assets	Expanded renewal works	Comprehensive renewal works based on condition of assets
New Assets	None	None	None
Lifecycle Cost Management	High costs due to reactive reliance.	Reduced reactive costs via preventative actions	Balanced lifecycle costs, emphasizing asset durability
Community Impact	A reactive approach leads to dissatisfaction due to frequent service disruptions.	Gradual improvement in service delivery through modernisation and maintenance.	Enhanced user satisfaction with proactive asset improvements and increased level of service
Growth and Future Planning	Neglects future growth; focuses on keeping current assets operational	Neglects future growth focuses on keeping current assets operational	Opportunity for planning for future growth

The following graphic visualises each scenario and the impact on the overall required renewal budget and unfunded renewals. Below is the Scenario Overview – Whole Asset Portfolio (Roads, Stormwater, Building and Open Space)

Required Budget

LTFP Scenarios

LTFP Scenarios Accumulative

Average Annual Required Budget	Scenario 1 Available Budget	Scenario 2 Available Budget	Scenario 3 Available Budget
$31M	$14M	$25M	$30M

Scenario 1 Annual Renewal Gap	Scenario 2 Annual Renewal Gap	Scenario 1 Unfunded Renewal at 2034	Scenario 2 Unfunded Renewal at 2034
-$17M	-$6M	-170M	-60M

Comparison of Available Budget in Various Scenarios against Accumulative Annual Required Budget

FINANCIAL SUMMARY

Hawkesbury Council is committed to delivering all the levels of services identified in this asset management plan. With the adoption of Scenario 3 outlined in the previous section, the estimated available funding for stormwater over the next 10 years will be approximately $3.4 million per annum.

The proposed Scenario 3 budget is sufficient to fund all required works leaving few shortfalls on average per year. It will also significantly reduce the existing Unfunded Renewals.

The following table demonstrates how the Capital Works Program (CWP) for building assets would evolve under each scenario, providing examples of budget allocation, key actions, and their focus areas:

Example ONLY – Annual Stormwater Renewal Program (following page)

Scenario	Annual Budget	CWP Program	Allocation ($)	Key Focus
1. Decline- Prioritises reactive repairs and essential minor alterations to keep critical assets functioning	$900,000	Reactive Drainage investigation and renewal	$50,000	Limited improvements to drainage conduits driven by customer complaints
		Reactive New Kerb & Gutter Program and drainage works	$680,000	Priority area with potential flood impact
		Stormwater Conduits rehabilitation Patch repair works	$25,000	Address high-priority unplanned or emergency repairs
		Stormwater conduits renewal (design Investigations only	$35,000	Small-scale renewals
		Major culvert Renewal work	$110,000	Defect rectification and safety improvement
2. Improve - Shifts toward preventative maintenance and gradual compliance upgrades	$2,900,000	Reactive drainage investigation and renewal	$300,000	Enhanced preventative maintenance to reduce long-term reactive costs
		New Kerb and Gutter Priority work – Program extension	$750,000	Improved drainage performance
		Stormwater Conduit Rehabilitation priority assets	$750,000	Reliability upgrade and improvements
		Stormwater conduits renewal and rehabilitation	$750,000	Stormwater Improvement and asset renewal
		Water Quality Device improvement	$200,000	Improved performance of water quality devices
		Stormwater Detention basins	$150,000	Improved detention structures performance for aging assets

Scenario	Annual Budget	CWP Program	Allocation ($)	Key Focus
3. Resolve- Balances proactive maintenance, comprehensive upgrades, and new builds for future growth.	$3,400,000	Reactive drainage investigation and renewal	$500,000	Improved condition of Stormwater network
		New Kerb and Gutter Priority work – Program extension	$800,000	Reduce localized flooding issues
		Stormwater Conduit Rehabilitation priority assets	$800,000	Enhanced condition of stormwater conduits
		Stormwater conduits renewal	$850,000	Enhanced condition of stormwater conduits
		Water Quality Device improvement	$250,000	Maintain and upgrade water quality devices progressively
		Stormwater detention basins	$200,000	Improved stormwater Detention

FALLBACK STRATEGY

If Scenario 3 (Resolve) is not adopted, fallback strategies will be employed to maximise the effectiveness of the reduced works program under Scenario 1 (Decline). This would include:

- Limiting maintenance and renewal to only critical repairs.
- Prioritising safety-related works to mitigate risks associated with deteriorating stormwater assets.
- Accepting that ongoing degradation of stormwater assets will result in reduced service levels and potential impairment.

Without sufficient funding, Council will be unable to minimise the degradation of its stormwater assets, address compliance issues, or meet growing community expectations. Securing increased investment under Scenario 3 is essential to achieving sustainable outcomes and delivering the highest level of service to the Hawkesbury community.

OPERATIONAL ROLES AND RESPONSIBILITIES

In accordance with ISO 55000 Asset Management standards, the proposed roles and responsibilities of staff and contract resources across the organisation have been developed. This proposal will be refined through consultation with Council staff and various teams and then presented to the Council's Executive Team for approval.

A detailed matrix for all roles and responsibilities over Council's Stormwater have been outlined in **Attachment D – Roles and Responsibility Matrix**.

PLAN IMPROVEMENT AND MONITORING (AUDITING)

This plan is a live document that will change and improve as the skills and capabilities of the various asset management resources across Council are developed. Further, in accordance with ISO 55000 Asset Management, the compliance with this plan will be audited by the Assets Management Team. The Audit Process will initially focus on the achievement of the core organisation's asset management maturity. Later it will focus on compliance with the service levels, future demand, lifecycle asset management systems developed for this plan and the identification of areas for skills and capabilities improvement.

The Audit Process has yet to be developed and will be a future Strategic Action in later versions of the AMPs. Nonetheless, a number of skills and capability improvement actions have been identified in the development of this plan and they are detailed in the **Attachment E - Strategic Actions.**

ATTACHMENTS

ATTACHMENT A - DEFINITIONS

Term	Definition
Asset	An asset is an item, thing or entity that has potential or actual value to an organisation. The value will vary between different organisations and their stakeholders, and can be tangible or intangible, financial or non-financial.
Asset Condition Assessment	The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset to determine the need for preventative or remedial action.
Asset Group	An asset group refers to an umbrella of assets that have similar characteristics or purpose.
Asset Management	The balancing of costs, opportunities and risks against the desired performance of assets, to archive the organisational objectives. The balancing might need to be considered over different timeframes. Additionally, it enables the application of analytical approaches towards managing an asset over the different stages of its lifecycle.
Capital Expenditure	Expenditure which contributes or results in a physical asset.
Capital Grants	Funding received from a third party which are generally tied to specific projects.
Component	An individual part of an asset which contributes to the composition of the whole and can be separated/attached from the whole. It may also require different types of treatments and have differing useful lives and lifecycle costs.
Componentisation	The practice of considering the components of a fixed asset individually, to account for the fact that these components have unique physical and economic lives.
Condition	Assessed and given a value on a scale of 1 (new) to 5 (end of life). The Average Condition of a group of assets is the GRC weighted average of all assets in the group.
Current Average Annual Expenditure	An estimate of the current total maintenance and capital works expenditure on the Asset Group, being the annualised present worth of the value of the maintenance and capital renewals expenditure.
Depreciation	The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.
Fair Value	The amount for which an asset can be exchanged, or a liability settled between knowledgeable, willing parties, in an arm's length transaction.
Gross Replacement Cost (GRC) aka Current Replacement Cost (CRC)	The amount it would cost at the revaluation date to acquire or construct a brand- new substitute asset that has comparable utility and no obsolescence. Also referred to as Current Replacement Cost (CRC).

Term	Definition
Infrastructure assets	Physical assets of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, e.g. roads, drainage, footpaths and cycle ways. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally, the components and hence the assets have long lives. They are fixed in place and are often have no market value.
Level of service	The defined service quality for a particular service from an asset. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental, acceptability and cost.
Lifecycle Cost	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
Minimum Average Annual Expenditure	The average annual expenditure required to keep the Asset Group in good condition after the Unfunded Renewal (if any) has been addressed.
Reactive maintenance	Unplanned repair work that carried out in response to service requests and management/supervisory directions.
Remaining life	The time remaining until an asset ceases to provide the required service level or economic usefulness.
Renewal	Refer capital renewal expenditure.
Renewal Gap	The gap between the average required and available annual budgets.
Risk management	The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.
Satisfactory Condition	As designated in Special Schedule 7 of Council's Annual Financial Report, being condition 3 or fair condition.
Unfunded Renewals	The total cost of all asset treatments (maintenance and component/asset renewals) due or past due at the date of review.
Useful Life	The period over which an asset is expected to be available for service by an entity. The estimated period from installation till removal of the asset upon the end of its serviceability
Written Down Value (WDV)	Also referred to as the book value, WDV reflects the assets present value from an accounting perspective. It is calculated by subtracting the depreciated value from its original value.

ATTACHMENT B – ASSETS INSPECTIONS AND CONDITION ASSESSMENT SCHEDULE

Condition Assessment Plan		
Asset Class	**Asset Sub Class**	**Condition Assessment Due**
Stormwater and Sewerage Network	Stormwater CCTV Camera Inspections, Sewer CCTV Camera Inspections	2024-25
Stormwater and Sewerage Network	Stormwater CCTV Camera Inspections, Sewer CCTV Camera Inspections	2025-26
Stormwater and Sewerage Network	Stormwater CCTV Camera Inspections, Sewer CCTV Camera Inspections	2026-27
Roads, Land Improvement, Other Structures and Stormwater	Road Pavement, Footpaths, Kerb and Gutter, Bridges, Traffic Management Devices, Street Furniture, Bus Shelters, Other Structures, Park Furniture, Playgrounds, Sportfields, Irrigation, Lighting, Park Signs, Stormwater CCTV Camera Inspections and Stormwater CCTV Camera Inspections	2028-29

Comprehensive Revaluation Plan		
Asset Class	**Asset Sub Class**	**Condition Assessment Due**
Land Improvement, Other Structures and Investment Properties	Other Structures, Playgrounds, Park Furniture, Sportfields, Irrigation, Lighting, Park Signs	2024-25
Stormwater Drainage	Drainage Conduits, Drainage Structures, Water Quality Devices, Flood Mitigation, Artworks	2025-26
Artworks	Artworks	2026-27
Land and Buildings	Community and Operational Land, Buildings and Land under Roads	2027-28
Roads, Sewerage Network, Waste management	Road Pavement, Road Signs, Footpaths, Boardwalks, Open Carparks, Kerb and Gutter, Bridges, Traffic Management Devices, Street Furniture	2028-29

ATTACHMENT C - USEFUL LIVES OF ASSET CATEGORIES AND SUBCATEGORIES

Asset Group Category	Useful Life
Stormwater Assets	
Drains	80 to 100
Culverts	100
Pits	100
Pipes	100
Flood control structures	60 to 100

ATTACHMENT D - SUMMARY OF INFRASTRUCTURE SERVICES ROLES AND RESPONSIBILITIES

Infrastructure Services Team	Key Roles	Key Responsibility- General	Key Responsibility- Stormwater asset-related task
Asset Systems & Planning (AS&P)	- Asset owner responsible for lifecycle planning of Roads, Stormwater, Buildings, and Open Space. - Oversees asset management systems for evidence-based decision-making. - Develops statutory asset planning documents. - Aligns asset management outcomes with LTFP, Operational Plan, and Delivery Program. - Coordinates asset management practices.	- Handles customer requests for asset installation or renewal. - Conducts asset condition assessments. - Prepares and updates lifecycle models and budgets. - Processes legislative reports. Manages interfaces with external utilities.	- Handles customer requests for stormwater installations or renewals. - Develops and updates the Capital Works Program. - Coordinates grant applications and milestone reporting.
Infrastructure Operations (IO)	- Coordinates preventative, reactive, and planned maintenance of Council assets. - Ensures compliance and safety of assets. - Manages Capex and Opex tenders. - Leads emergency and resilience planning.	- Manages customer requests for asset defects and servicing. - Conducts minor capital replacements. - Leads emergency planning and compliance. - Manages vehicle, plant, and equipment replacement programs.	- Handles customer requests for maintenance of stormwater assets and drainage works. Performs various maintenance activities, including cleaning, mowing easements, maintenance to pipes and culvits.
Project Delivery (PD)	- Leads and ensures accountability in Capital Works Program delivery. - Streamlines project delivery processes. - Manages contracts and stakeholder deliverables. - Reviews designs and ensures approval compliance.	- Addresses customer requests for construction project updates. - Develops delivery strategies. - Ensures efficient contract and project management. - Conducts asset handovers post-project completion.	- Manages customer requests for stormwater-related capital works projects. - Prepares and awards contracts. - Oversees site administration, stakeholder management, and risk. - Completes asset handovers with stakeholders.
City Services (CS)	- Manages City Services Branch for development engineering, mapping, open space, and traffic management. - Handles development-related customer requests. - Manages the SIS mapping system. - Supports cemetery operations.	- Addresses customer requests for services like parks, tree permits, road openings, and traffic management. - Provides mapping services and asset location tracking.	- Maps assets and provides spatial data access to asset officers through Intramaps.

ATTACHMENT E – STRATEGIC ACTIONS

Task No	Task	Importance	Urgency	Risk	Responsibility	Target Completion Date
1	Review and improve the Capital Works Planning and projects prioritisation process	Medium	Medium	Medium	Assets	30/12/2025
2	Initiate Maintenance Defect Register for stormwater infrastructure based on CCTV inspections	High	Medium	Medium	Assets	30/12/2025
3	Review and update life cycle modelling for drainage conduits	High	High	High	Assets	30/12/2025
4	Deliver the CCTV inspections rolling program for hot spots and priority catchments	High	High	High	Assets	30/06/2028
5	Streamline processes for stormwater projects intitiation, planning, design, procuement, delivery and hand over	High	High	High	Assets, Delivery, Operations	30/06/2026
6	Develop a process to improve accuracy of the network connectivity and data quality in the corporate systems	Medium	Medium	Medium	Assets, GIS Team	30/06/2026

ATTACHMENT E – STRATEGIC ACTIONS

Task No	Task	Importance	Urgency	Risk	Responsibility	Target Completion Date
7	Develop programs for proactive maintenance of stormwater infrastructure	Medium	Medium	Medium	Assets, Operations	30/12/2025
8	Perform a sortmwater infrastructure data gap analyisis	High	High	High	Assets, GIS Team	30/12/2025
9	Develop a plan to identify and inspect the existing assets not previously recognised including flood gates, detention basins, water quality devices, etc.	High	Medium	Medium	Assets	30/12/2025
10	Complete detail design and L3 cost estimation of the 2025/26 Stormwater Capital Works Projects	High	High	High	Assets	30/12/2024

ATTACHMENT F - REFERENCES AND RELATED INFORMATION

- HCC Asset Management Strategy
- IPWEA International Infrastructure Management Manual
- IPWEA Financial Management Guidelines
- NSW Office of Local Government Integrated Planning and Reporting Framework Guidelines and Manual
- HCC Asset Management Policy
- HCC Asset Valuation Methodology Manual
- Local Government Financial Sustainability Nationally Consistent Frameworks, Frameworks 1, 2 and 3, May 2009
- National State of the Assets, Roads and Community Infrastructure Report, Nov 2018
- AS ISO 55000-2014 Asset Management-Overview, Principles and Terminology
- AS ISO 5001-2014 Asset Management-Management Systems- Requirements
- AS ISO 5002-2019 Asset Management-Management Systems- Guidelines for the Application of ISO 55001
- AASB 116 Property, Plant and Equipment – prescribes requirements for recognition and depreciation of property, plant and equipment assets
- AASB 13 Fair Value Measurement – sets out methods for determining Fair Value
- AASB 136 Impairment of Assets – aims to ensure that assets are carried at amounts that are not in excess of their recoverable amounts
- AASB 1021 Depreciation of Non-Current Assets – specifies how depreciation is to be calculated
- AAS 1001 Accounting Policies – specifies the policies that Council is to have for recognition of assets and depreciation
- AASB 1041 Accounting for the reduction of Non-Current Assets – specifies the frequency and basis of calculating depreciation and revaluation basis used for assets
- AAS 1015 Accounting for acquisition of assets – method of allocating the value to new assets on acquisition
- AAS 1010 Recoverable Amounts of Non-Current Assets – specifies requirement to test the reasonableness of valuations.

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