



ATTACHMENTS TO REPORTS

ORDINARY COUNCIL MEETING

ITEMS UNDER SEPARATE COVER

22 SEPTEMBER 2021

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UNSEALED ROAD ASSET AND SERVICE MANAGEMENT PLAN

Unsealed Roads Asset Management Plan v1.2

Meeting Date: 22 September 2021

Attachment No: 1



Unsealed Roads Asset and Service Management Plan

Document Control

| Date | Version | Description |
|-------------|---------|--|
| August 2021 | 1 | Plan developed |
| Sept 2021 | 1.1 | As reviewed at Council Workshop 1 September 2021 |
| | | |
| | | |
| | | |

EXECUTIVE SUMMARY

Purpose of the Plan

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

This Asset and service management sub-plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 20-year planning period.

This sub-plan covers the unsealed road assets that contribute to providing transport services.

Assets

Unsealed road assets that contribute to providing transport services include:

| Asset Category | Quantity | Unit | Replacement Value |
|----------------|----------|------|-------------------|
| Unsealed Roads | 1634 | km | \$107M |

Levels of Service

Present funding levels are insufficient to provide existing services at current levels in the short term.

The main service consequences are the inability to:

- Complete identified proactive and reactive maintenance
- address known service performance issues, and
- plan for the renewal and replacement of assets as they reach the end of their useful life.

Future Demand

The main demands for new services are created by:

- known asset capacity and performance deficiencies, and
- desire for more flood resilient structures.

These will be managed through a combination of managing service levels on existing assets, upgrading assets as they reach end-of-life and looking at the service level/ cost trade off when considering upgrades.

Unsealed Road Expenditures

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset and service management sub-plan includes operations, maintenance, renewal, upgrade and new assets over the 10-year planning period is \$9.24 M or \$0.92 M on average per year.

What we will do

Estimated available funding for this period is \$6.99 M or \$0.70 M on average per year as per the long term financial plan or budget forecast. This is 76¹ per cent of the cost to sustain the minimum level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. The emphasis of the Asset and service management plan is to communicate the consequences that this will have on the service provided and risks, so that decision making is informed.

¹ Budget/ Projected requirements expressed as a percentage.

The allocated funding leaves a shortfall of \$225,000 on average per year of the projected expenditure required to provide services in the Asset and service management plan compared with planned expenditure currently included in the Long Term Financial Plan. This is shown in the figure below.

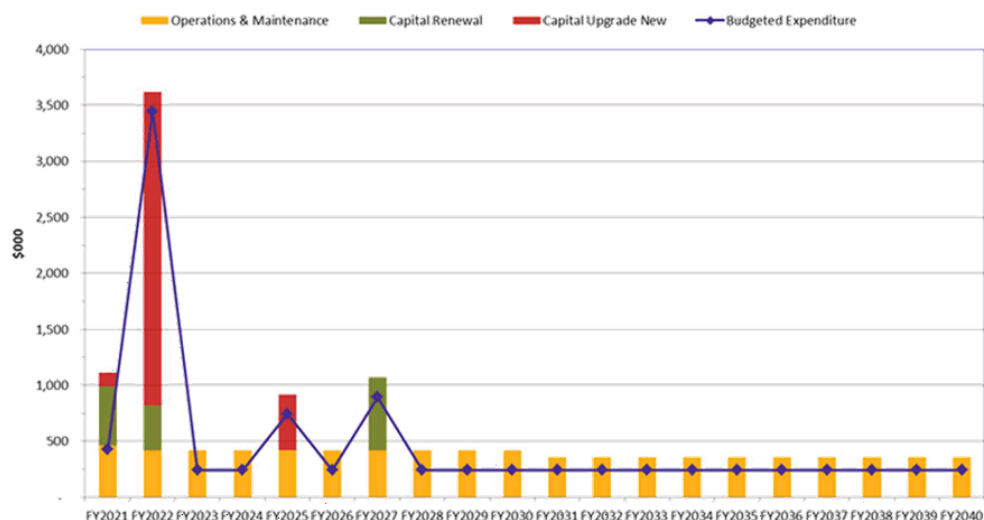


Figure values are in 2020 (real) dollars.

With the available funding Council will provide the following services:

- Continue to perform routine and condition and defect inspections of major structures
- Some maintenance activities, on a prioritised basis
- Replace two structures that have reached end-of-life, and
- Upgrade two assets to more resilient structures.

What we cannot do

We currently do not allocate enough funding to sustain these services at the desired standard. Under present funding levels maintenance is unable to be completed as it is identified.

Managing the Risks

Our present funding levels are insufficient to continue to manage risks in the short term.

The main risk consequences are:

- Reduction in the level of service to the community through the load limiting or closure of structures
- Increased costs to the community to provide major structures as a result of underfunding of maintenance activities

Council will endeavour to manage these risks within available funding by:

- Prioritising maintenance of higher order structures to ensure they remain fit-for purpose
- Performing cost-benefit analysis on the impacts of reducing service levels, and
- Considering alternative solutions where the cost-benefit analysis does not stack up.

Monitoring and Improvement Program

The next steps resulting from this Asset and service management plan to improve asset management practices are:

- Implement the WhichBridge prioritisation tool for maintenance activities
- Monitor and report on levels of service, and
- Improve the end-to-end planning for major structures by improving the connectivity between maintenance and capital functions.

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1. INTRODUCTION

Purpose

Southern Downs Regional Council (Council or SDRC) is required to prepare a long-term asset management plan under the *Local Government Act 2009* and *Local Government Regulations 2012*. Under the legislation the asset management plan must:

- Cover a period of at least 10 years
- Provide strategies to ensure the sustainable management of long-term infrastructure assets
- State the estimated capital expenditure for renewing, upgrading and extending the assets for the period covered by the plan, and
- Inform, and be consistent with, the long term financial plan.

Council is committed to implementing sound asset management principles and practices to ensure that transport services are delivered to the community in a socially, economically and environmentally responsible manner that does not compromise the ability of future generations to make their own choices.

This Asset and service management sub-plan seeks to enable the sustainable delivery of transport services by integrating community values, priorities and an informed understanding of the trade-offs between risks, costs and service performance over a 20-year planning period. To do this, this sub-plan:

- Describes the unsealed road assets that contribute to providing transport services to the community
- Defines Council's level of service and how we monitor performance,
- Outlines our strategy to manage the impact of growth through demand management and infrastructure investment,
- Takes a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Outlines how Council identifies, assesses and appropriately controls risk; and
- Links to a long-term financial plan which identifies required, affordable expenditure and how it will be allocated.

Transport Services

Council provides transport services to the community to:

- provide access to, and enable movement of goods, commodities, services, and skills
- drive productivity and efficiency to maximise economic and community benefits, and
- link urban centres and rural communities.

Council has a legislative obligation under the *Local Government Act 2009* to provide transport services.

Council's transport services comprise of seven elements:

- sealed roads
- unsealed roads
- bridges and major culverts
- kerb and channel
- car parks
- footpaths, and
- street furniture.

This Asset and Service Management sub-plan addresses unsealed road assets.

Road Classification & Hierarchy

Council's manages roads, bridges and major structures totalling approximately \$428 M². It is not practical or financially possible to manage all roads, bridges and major structures to the same standard. A functional road classification organises roads (and structures) into categories according to their purpose, strategic importance and level of use.

The road hierarchy further delineates roads within a functional class, where the functional classification does not provide sufficient granularity on its own.

Together the functional road classification and road hierarchy provide a basis for establishing construction, maintenance and operational standards and assists Council to communicate with the community regarding the:

- delineation of responsibilities between Federal, State and Local governments
- services we provide, and
- standard to which Council can afford to deliver the services.

Functional Road Classification

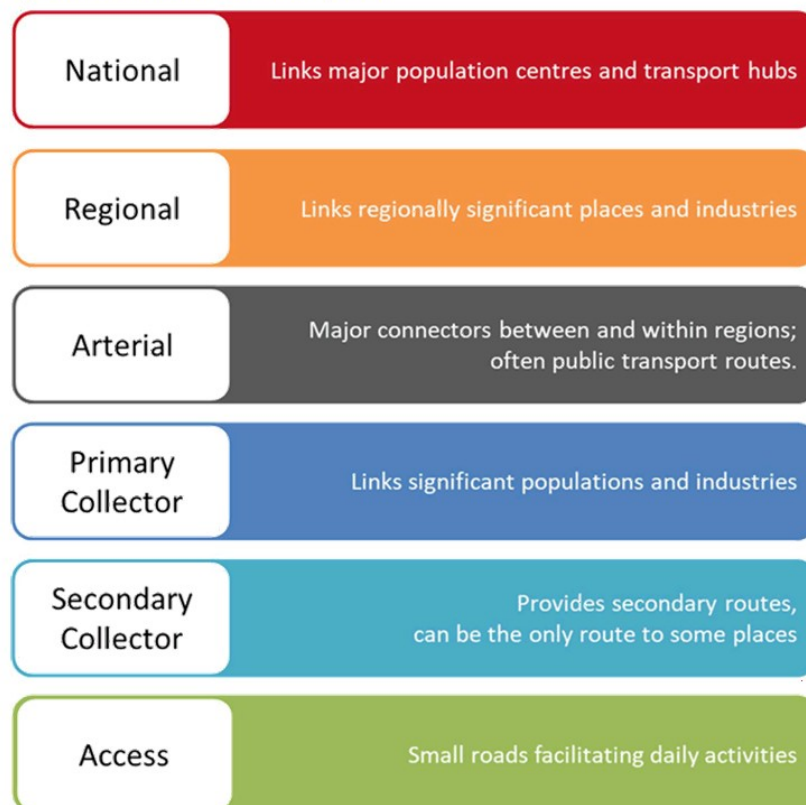
Southern Downs Regional Council uses the One Network Road Classification. This classification classifies Council's roads based on:

- traffic volumes
- commercial use (ie, heavy commercial vehicle volumes), and
- roads that link communities.

The road classes within the One Network Road Classification are identified in Figure 1.1.

²Replacement Cost as at 30 June 2019. Replacement cost is in current (real) dollars.

Figure 1.1: One Network Road Classification



Council is responsible for Primary Collector, Secondary Collector and Access roads within the region. Arterial Roads can be the responsibility of either the Queensland Department of Transport and Main Roads or Council.

Each road, or section of road, is classified in accordance with the One Network Classification Criteria. Where a road meets criteria for multiple classes, a holistic view of the roads function and importance to the community is considered. The One Network Road Classification criterion is provided at Figure 1.2.

Figure 1.2: One Network Road Classification Criterion.

| | Average Daily Traffic | Heavy Commercial Vehicles/ day | Linking Places (population) |
|------------------------|-----------------------------|--------------------------------------|-----------------------------------|
| National | | | |
| Regional | | | |
| Arterial | > 3,000 | > 300 | > 10k |
| Primary Collector | > 1,000 | > 150 | > 2k |
| Secondary Collector | > 200 | > 25 | > 250 |
| Access | < 200 | < 25 | < 250 |

Road Hierarchy

Council's road hierarchy sets out the technical requirements, maintenance practices and levels of service within each (functional) class of road. Where the length of road within a functional class is too large to manage as a homogeneous cohort the road hierarchy organises roads into secondary classes according to the hierarchy characteristics (ie, vehicles per day, access to houses).

Unsealed Roads & Unsealed Road Hierarchy

Council's unsealed road network is classified as Access roads. Access roads facilitate daily activities; provide access to adjacent properties, and access to the wider road network.

Council's unsealed road network is made up of approximately 830 roads covering 1,634 km. Given the significant length of road within the unsealed road network, an unsealed road hierarchy has been developed to enable Council to manage the network efficiently and effectively and maximise value for the ratepayer and the community. Council's Unsealed Road Hierarchy aligns with the Lower Order Road Design Guidelines (2016) published by the Institute of Public Works Engineering Australasia, Queensland. Table 1.1 provides an overview of the Southern Downs Regional Council Unsealed Road Hierarchy.

Table 1.1: Unsealed Road Hierarchy

| | Primary Access | Secondary Access | Formed Track | Road Reserve |
|------------------------------------|--------------------|---------------------------------|--|------------------|
| Vehicles per Day | 51-150 | 11-50 | 0-10 | |
| Access to dwellings | > 25 | 4 to 25 | < 4 | |
| Road Category | Gravel | Gravel | Formed ³ | Unformed |
| Road Status | Constructed | Constructed | Not Constructed | |
| Approximate km of road | 203 | 814 | 617 | 132 ⁴ |
| Design Standard | | | | |
| Pavement (Gravel) width (m) | 7.0 m (minimum) | 4.0 m ⁵ (minimum) | 3.0 m (minimum) | |
| Gravel Depth (minimum) | 100 mm | 100 mm | No gravel | |
| Target Intervention Levels | | | | |
| Routine Inspection | 18 months | 18 months | 4 years | |
| Maintenance | | IRI > 7 or 8 (future target) | Where deemed necessary following an inspection. | |

Constructed Road Definition

Council's Planning Scheme currently defines a constructed road as being a road constructed to a minimum standard of 4m-6m width of 100mm compacted gravel. Under this definition a Formed Track (or Formed Road) does not constitute a constructed road.

Council's planning scheme requires the construction of a new dwelling house to have frontage to a constructed road.

³ Approximately 558 km of roads in this class currently have some level of gravel.

⁴ Drawn road reserves. Most road reserves are visible on the cadastral mapping but have not been drawn for asset management purposes.

⁵ For safety considerations to allow 2 vehicles to pass. Current average width for Minor Access roads is 5.2 m

Assets Covered by this Plan

The infrastructure assets covered by the Unsealed Road Asset and service management plan are listed in Table 1.2.

Table 1.2: Assets covered by this Plan

| Asset Category | Quantity | Unit | Replacement Value |
|-------------------------|---------------|-----------|-------------------|
| Unsealed Roads | | | |
| <i>Primary Access</i> | <i>203</i> | | |
| <i>Secondary Access</i> | <i>814</i> | <i>km</i> | |
| <i>Formed Track</i> | <i>617</i> | | |
| TOTAL | ~1,634 | | \$ 107 M |

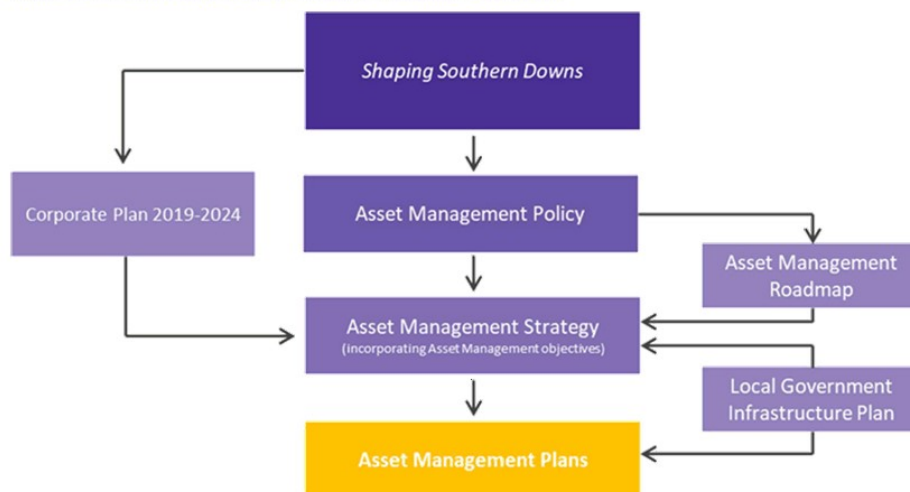
Relationship with other Council Policies, Strategies and Plans

This asset service and management sub-plan communicates the actions required for the responsive provision of transport services and the management of the unsealed roads that contribute to the provision of these services. This plan also outlines how Council complies with relevant regulatory requirements, and the funding needed to provide the defined levels of service over a 20-year planning period.

The plan is to be read in conjunction with the Council planning documents. The relationship between Shaping Southern Downs, Council's Asset Management Policy and other planning documents is shown in Figure 1.3.

Note Shaping Southern Downs is the current lead strategic document but is current paused pending review.

Figure 1.3: Relationship between Council's Planning Documents



Strategic and Corporate Goals

The vision for Southern Downs Region is 'To be a prosperous, diverse and growing community because it is a sought-after location for people to visit, live and invest.'⁶

Shaping Southern Downs has four themes that underpin the vision:

- Grow;
- Connect;
- Prosper; and
- Sustain.

Table 1.2 outlines how these themes link to this Asset and service management plan.

Table 1.2: Strategic Themes and how these are addressed in this Plan

| Theme | Objective | How Goal and Objectives are addressed in AM Plan |
|---------|--|---|
| Grow | Improve the relationship between Council policy, service delivery, infrastructure, advocacy and community priorities. | This Asset and service management plan is a step towards improving Council and community understanding of road assets. This plan seeks to inform Council policy in relation to the transport services provided by Council. This includes articulating the services provided to customers, the cost of providing those services and the risks and opportunities presented by current funding levels. |
| Connect | People and freight move efficiently around the region as population grows, maximizing community and economic benefits. Regional and local infrastructure networks are maintained and enhanced to provide interlinked service and facilities for greater choice and access | This plan outlines the plan for the maintenance, renewal and upgrade of the unsealed roads that contribute to the provision of transport services. A strategic and effective approach to the delivery of transport infrastructure will maximize community and economic benefits through the provision of an interlinked and accessible transport network. |
| Prosper | To delivery well-placed and high-quality infrastructure and services that support local and regional economic activity. | This plan enables the delivery of high-quality transport infrastructure by identifying the actions required to manage and deliver infrastructure that meets the needs of the community over the long term in a cost-effective manner. |

⁶ Shaping Southern Downs Strategy, p8

Legislative Requirements

Council's legislative obligations relating to the management of bridge and major culvert assets are outlined in Table 1.3.

Table 1.3: Legislative Requirements

| Legislation | Requirement |
|--|---|
| <i>Local Government Act 2009</i> | <p>Outlines the nature and extent of a local government's responsibilities, powers and a system of local government that is accountable, effective, efficient and sustainable.</p> <p>Under the Act and Regulation local governments must prepare:</p> <ul style="list-style-type: none"> ▪ A long-term asset management plan ▪ A long term financial forecast ▪ Asset registers |
| <i>Local Government Regulation 2012</i> | |
| <i>Disaster Management Act 2003</i> | Details the roles and responsibilities of local and state governments in a disaster or emergency event. |
| <i>Transport Infrastructure Act 1994</i> | Details a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure. |
| <i>Transport Operations (Road Use Management) Act 1995</i> | Details a scheme for managing the use of the State's roads ensuring roads are managed effectively and efficiently. |
| <i>Planning Act 2016</i> | <p>The purpose of the Planning Act is to establish an efficient, effective, transparent, integrated, coordinated, and accountable system of land use planning, development assessment and related matters that facilitate the achievement of ecological sustainability.</p> <p>Ecological sustainability is a balance that integrates—</p> <ul style="list-style-type: none"> ▪ the protection of ecological processes and natural systems at local, regional, State and wider levels; and ▪ economic development; and <p>the maintenance of the cultural, economic, physical and social wellbeing of people and communities.</p> |
| <i>Environmental Protection Act 1994</i> | Details the role and responsibilities to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes (ecologically sustainable development). |
| <i>Vegetation Management Act 1999</i> | The purpose of this act is to regulate the clearing of vegetation. |
| <i>Work Health and Safety Act 2011</i> | Details the roles and responsibilities in the workplace to enable the protection of health, safety and welfare of all workers. |

Core and Advanced Asset Management

This Asset and service management plan is prepared as a core Asset and service management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual⁷. Core asset management is a 'top down' approach where analysis is applied at the system or network level. An 'advanced' asset management approach uses a 'bottom up' approach for gathering detailed asset information for individual assets.

This Asset and service management plan has been developed with references to the benefits, fundamentals principles and objectives of asset management outlined in:

- International Infrastructure Management Manual 2015 ⁸
- ISO 55000: 2014 Asset Management – Overview, principles and terminology⁹

⁷ IPWEA, 2015, IIMM.

⁸ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

⁹ ISO 55000 Overview, principles and terminology

2. LEVELS OF SERVICE

Customer Levels of Service

Levels of Service are defined in two terms: customer levels of service and technical levels of service. Customer levels of service describe how the community receives or experiences transport services in a way they can understand.

Levels of service are monitored and measured on two bases, performance measures and customer measures. Performance measures are those that can be measured objectively, and are related to the service delivery outcomes. Customer measures are subjective and are used to identify potential trends in asset performance.

Research has not been conducted on customer expectations. Community satisfaction will be investigated for future iterations of the Unsealed Road Asset and service management plan.

Council's customer levels of service are detailed in Table 2.1. Based on the current Budget and Long Term Financial plan it is expected that the performance of unsealed roads over the forecast period (to FY2041) will deteriorate. Sufficient planning, and funding of maintenance activities is essential for Council to achieve the services levels outlined below.

Table 2.1: Customer Levels of Service

| | |
|-------------------------------|--|
| Strategic Outcome | <ul style="list-style-type: none"> Provide access to, and enable movement of goods, commodities, services, and skills Drive productivity and efficiency to maximise economic and community benefits Link urban centres and rural communities |
| Service level Statements | <ul style="list-style-type: none"> Unsealed roads are generally well compacted, with suitable drainage and adequate warning, delineation, guidance & roadside furniture in line with Council's road classification and hierarchy. Unsealed roads will have seasonal variability in travel speed, requiring the user to drive to the conditions with safety guidance provided at high risk locations. Unsealed roads are available to most vehicles in most weather conditions. Unsealed roads may be impacted by weather events during which alternative routes may not exist. Unsealed roads have adequate capacity for their classification and hierarchy. Unsealed roads are appropriately services by undertaking routine inspections and operational activities. |
| Performance measures | <ul style="list-style-type: none"> Percentage of unsealed roads inspected per annum. Percentage of unsealed road services requests requiring intervention (outside of routine maintenance). Average and median roughness (IRI) of the unsealed network. Percentage of gravel road network with adequate gravel coverage (% above target intervention). Number of road closures for more than 1 week. Percentage completion of operations program. |
| Customer performance measures | <p>Number of service requests relating to:</p> <ul style="list-style-type: none"> Road condition (grading, scours, potholes, slippery roads) Guideposts, road signs and road furniture Dust control Road upgrades Visibility and roadside vegetation. |

Performance measures and customer performance measures are monitored on an annual basis. Current performance and planned targets are outlined in Table 2.2.

Table 2.2: Levels of Service - Current performance and planned targets

| | 2020 result | 2021 result | 2021 target | 2022 target | 2023 target | 2024 target | 2025 target |
|---|----------------|----------------|---------------------------|----------------|----------------|----------------|----------------|
| Performance Measures | | | | | | | |
| Percentage of unsealed road network inspected per annum | n/a | n/a | New measure | 70% | 70% | 70% | 70% |
| Percentage of unsealed road service requests requiring intervention | n/a | n/a | New measure | | | | |
| Average and median roughness (IRI) of unsealed road network | n/a | n/a | New measure | < 8 | < 8 | < 8 | < 8 |
| Proportion of unsealed road network with adequate gravel. | n/a | n/a | New measure ¹⁰ | tbd | tbd | tbd | tbd |
| Percentage completion of operation/maintenance program | n/a | n/a | New measure | > 90% | > 90% | > 90% | > 90% |
| Customer Measures | | | | | | | |
| Service requests relating to road condition | | tba | | | | | |
| Service requests related to guideposts, road signs and road furniture | | tba | | | | | |
| Service requests related to dust control | | tba | | | | | |
| Service requests related to road upgrades | | tba | | | | | |
| Service requests relating to visibility and roadside vegetation | | tba | | | | | |

¹⁰ Condition assessment of Council's Unsealed Network is scheduled for FY2022.

Technical Levels of Service

Supporting the customer service levels are technical levels of service. Technical levels of service relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

Technical levels of service can be separated into two components:

- Operational levels of service, and
- Capital levels of service.

Operational levels of service describe the day-to-day activities undertaken to keep the assets in good order. These include:

- routine inspections, cleaning, and repairs identified from inspections
- a condition assessment program, and
- emergency response and reactive works as identified by Council and the community

The implementation of the technical levels of service influence the customer levels of service.

The technical levels of service expected to be provided under this Asset and service management plan are outlined below.

Indicative costs have been provided where they an external contractor is used. Future iterations of this plan will aim to identify activity level costing for internally managed activities.

Operational Levels of Service

Routine Inspections

Routine inspections assesses the asset's ability to operate as required on a day-to-day basis and identifies any maintenance required to keep the asset functioning properly (patching of minor defects, clearing of debris, etc.).

| Activity | Purpose | Schedule | Who | Indicative Cost (p.a.) |
|-----------------------------|---|--|--|-----------------------------|
| Pre-maintenance inspection | Assess the condition of the road and determine maintenance requirements | One (1) month prior to the arrival of maintenance crews. | Maintenance Unsealed Network Inspector | Internally managed activity |
| Post-maintenance inspection | Ensure the condition of the road is in line with standards | Within two (2) weeks of maintenance | Unsealed Network Supervisor & Unsealed Network Inspector | |

Reactive Inspections

| Activity | Purpose | Schedule | Who | Indicative Cost (p.a.) |
|----------------------|--|----------------------------|--|-----------------------------|
| Reactive inspections | Respond to a request for service and identify if intervention is required. | Within 30 days of request. | Maintenance unsealed Network Inspector | Internally managed activity |

Rain Event Response

Following major rain events bridge and major culvert assets are inspected to identify any emergent repairs and maintenance required.

| Activity | Purpose | Schedule | Who | Indicative Cost |
|----------------------------|---|--|---|-----------------------------|
| Localised heavy rain event | Assess damage to the network and plan a prioritised response. | Inspection within one (1) week of rain | Maintenance Unsealed Network Grader Crews | Internally managed activity |
| Declared rain event | Full mobilization of Emergency Response | On declaration | | |

Condition and Defect Inspections

Condition and defect inspections are carried out to determine the condition of the assets and identify any preventative or remedial action required. A condition and defect inspection program ensures that assets are identified before their point of failure, minimizing the risk and consequences of failure to the community.

Condition and defect inspections are to be carried out in accordance with SDRC condition assessment manual(s) and/or IPWEA Condition Assessment & Asset Performance Guidelines.

| Activity | Purpose | Schedule | Who | Indicative Cost |
|----------------------------------|---|---------------|------------------------|-----------------|
| Condition & defect inspection(s) | <p>To provide an evidence base for the renewal program by assessing the gravel coverage across the network. The condition and defect inspection includes:</p> <ul style="list-style-type: none"> ▪ full inspection of the network; ▪ an assessment of: <ul style="list-style-type: none"> - gravel coverage - International Roughness Index - Defects ▪ Sample road coring to establish gravel deterioration and depths. | Every 3 years | External contractor(s) | \$100,000 |

Routine, Preventative, and Reactive Maintenance activities

Maintenance activities aim to slow down deterioration and delay the requirement for rehabilitation or replacement. Maintenance does not increase the service potential of the asset or keep it in its original condition.

Routine and preventative maintenance is an essential part of the on-going care and upkeep of an asset. Cleaning is an example of a routine maintenance activity that enables assets to function as designed. Assets that have a higher likelihood or consequence of failing to function properly are maintained more regularly.

Reactive maintenance activities are those that are identified following an inspection, assessment or complaint and restore an asset as near as practicable to its current condition.

SDRC has a comprehensive maintenance program for unsealed road assets. Maintenance activities undertaken are predominately routine in nature and Council is looking to transition to an intervention led approach. An overview of routine maintenance treatments is provided at Appendix A. Maintenance activities are discussed further at Section 5.

| Activity | Purpose | Schedule | Who |
|---|---|--------------------------------|--|
| Maintenance treatment - Patrol grade - Medium formation grade - Heavy formation grade | To return the road to an acceptable standard - Roughness - Crossfall | Approximately every 18 months. | Unsealed Network Maintenance Crews |
| Application of binding agent | Reduces gravel loss in problem areas | As required | Unsealed Network Maintenance Crews |
| Minor road repairs | A spot repair to return the road to an acceptable standard | As required | Maintenance Unsealed Network Inspector & Skid Steer Operator |
| Guide Posts | Replacement of missing or damaged guide posts | As required | Unsealed Network Maintenance Crews |
| Roadside/ verge maintenance | Mowing of roadside/ verge where: - Vegetation is obstructing vision of traffic and deemed dangerous; - Regrowth of trees in the table drain impedes routine maintenance - Tree branches overhang the road (height clearance of 4.3m) | As required | Unsealed Network Maintenance Crews <i>and/or</i> Maintenance Unsealed Network Inspector & Plant Operator |
| Road Signs | Inspections of road signs to: - Identify missing signs; and - Assess condition of signs | Every 2 years (50% p.a.) | Slasher Crews |

Capital Works Program

Renewal program

Renewal and activities are those that restore the road to its design capacity and performance under the road classification and unsealed road hierarchy.

Council has a condition based renewal and replacement program. Assets are identified for renewal through the condition inspection program taking into account:

- The gravel depth and specified intervention level
- International Roughness Index
- Maintenance recommendations & inspections
- Customer complaints

| Activity | Schedule | Who |
|--|---|----------------------------|
| Gravel Resheeting <ul style="list-style-type: none"> ▪ Restores road to design standards <ul style="list-style-type: none"> - Road dimensions - Gravel depth - Cross-fall ▪ Restores table drains ▪ Replaces guideposts ▪ Clearing of roadside vegetation as required (ie, dangerous trees) ▪ Assessment of road & signs to ensure compliance with current standards ▪ Assessment of road furniture and replaced as required. | As approved following successful CPD submission to EMT and adoption by Council. | SDRC Capital Works program |

Upgrade program

Upgrade activities result in a road that increases the level of service by improving the capacity or performance of the asset.

A full upgrade to an unsealed road (ie, widening, or sealing) generally only occurs where it meets the requirements under the Road Classification and Hierarchy. That is, when the traffic volume or number of houses increases to the point where the road meets the criteria for the next category or classification.

| Activity | Strategy | Schedule | Who |
|---|---|---|----------------------------|
| Minor Upgrade (Sealed section) <ul style="list-style-type: none"> Sealing of a section of road that requires high maintenance, is steep, or has tight curvature | Strategic sealing of a short section ¹¹ at Council's discretion and where the section: <ul style="list-style-type: none"> Has an incline of 10% or greater Has a maximum superelevation of 9% (depending on nature of truck traffic), horizontal curve less than or equal to 70 meters radius or the driver is required to slow down to 40km/h or less to safely drive the road (tight curvature) Requires 3 repeat treatments within 12 months | As approved following successful CPD submission to EMT and adoption by Council. | SDRC Capital Works program |
| Widening of an Unsealed Road | Widening of an unsealed road where it meets the requirements under the Road Classification and Unsealed Road Hierarchy | | |
| Sealing an Unsealed Road <ul style="list-style-type: none"> Upgrade of an unsealed road to a sealed road incorporating a full road design | Sealing an unsealed road where it meets the requirements under the Road Classification and Unsealed Road Hierarchy (e.g. has daily traffic of at least 200 vehicles per day) | | |

¹¹ Less than an entire segment

New Assets

New assets provide a service that was not previously provided, such as the creation of a new road which was previously unformed road reserve.

New unsealed roads are predominantly constructed by ratepayers/ developers and transferred to Council.

| Activity | Schedule | Who |
|------------------------------|--|----------------------------|
| Creation of an unsealed road | As approved following successful CPD submission to EMT and adoption by Council | SDRC Capital Works program |

Selection criteria

New assets and the upgrade of existing assets are identified from various sources including community requests, proposals identified by strategic plans, or partnerships with others. Council has adopted a Capital Prioritisation and Decision Making Framework (CPD) to evaluate capital works proposals. Capital proposals are ranked by priority and available funds and scheduled in future works programmes. Southern Downs Regional Council has adopted a multi-criteria assessment for capital project selection. The multi-criteria assessment considers Asset Strategy, Risk, Community outcomes, Financial implications, Environmental outcomes, Council commitments, and Efficiencies.

3. GROWTH AND DEMAND

Southern Downs Regional Council covers an area of 7,500 km², adjoining South East Queensland, south of Toowoomba and north of Queensland's border with New South Wales. The region has a current population of approximately 35,500 and is projected to grow to approximately 38,300 by 2036¹², an annual average growth rate of 0.4 per cent.

Southern Downs is a community that welcomes growth and population diversity by offering a rural lifestyle with a temperate climate which is well-connected to South East Queensland's services and facilities. Council is seeking to leverage the strengths and attributes of the region to drive population growth to 50,000 in the foreseeable future.¹³ Understanding where and how the region will grow is a critical factor in the effective management of infrastructure and community assets.

Growth is one factor affecting demand. Other drivers affecting demand include (but are not limited to) State and Federal Government regulations, seasonal factors and climate change, environmental awareness, technological changes, economic factors, and community preferences and expectations.

Demand Forecasts

The demand and growth assumptions used in this Asset and service management plan are consistent with Southern Downs Regional Council's Local Government Infrastructure Plan and are detailed in Appendix A. Where more recent growth figures are available these have been used and referenced.

The present position, projections and impact of demand drivers that may impact future service delivery and use of assets are identified and documented in Table 3.1. Further opportunities will be developed in future revisions of this Asset and service management sub-plan.

¹² Queensland Government Statistician Office, accessed 23 May 2020.

¹³ Shaping Southern Downs Strategy, p1

Table 3.1: Demand Drivers, Projections and Impact on Services

| Demand drivers | Present position | Projection | Impact on services |
|--|--|--|---|
| Population growth | ~35,500 as at 30 June 2020 ¹⁴ | ~39,000 people by 2041 ¹⁵ | <ul style="list-style-type: none"> ▪ Increase in demand on transport infrastructure. ▪ Increased popularity of new dwellings in rural areas (new development) results in increased asset base. |
| Climate Change | | <p>Climate change is likely to exacerbate the frequency and severity of climate extremes. For Southern Downs this will mean:</p> <ul style="list-style-type: none"> ▪ More intense downpours ▪ Higher temperatures ▪ Hotter and more frequent hot days ▪ Harsher fire weather ▪ Fewer frosts ▪ Less rainfall in winter and spring¹⁶ | <ul style="list-style-type: none"> ▪ Increased disruption to services. ▪ Increased maintenance costs. ▪ Increased costs associated with upgrading to more resilient structures (where appropriate). |
| Known service performance deficiencies | <i>To be identified through Condition Assessment Program</i> | - | <ul style="list-style-type: none"> ▪ Reduction in levels of service (in some locations) ▪ Increased costs associated with upgrading to higher capacity structures where appropriate (in line with road classification & hierarchy). |

¹⁴ Queensland Government Statistician Office, accessed 3 August 2021.

¹⁵ Queensland Government Statistician Office, accessed 3 August 2021.

¹⁶ Queensland Department of Environment and Heritage Protection, Climate change in the Eastern Downs region (Draft), 2016

IncDemand Management Plan

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

Opportunities identified to date for demand management are shown in Table 3.2. Further opportunities will be developed in future revisions of this Asset and service management plan.

Table 3.2: Demand Management Plan Summary

| Demand Driver | Impact on Services | Demand Management Plan |
|--|---|---|
| Population growth | <ul style="list-style-type: none"> Increased popularity of new dwellings in rural areas (new development) results in increased asset base. Increase in demand on transport services. | <ul style="list-style-type: none"> Review requirements for the construction of a dwelling in rural areas under the Planning Scheme. Engage with the community regarding the levels of service provided for low volume roads. Target population growth at existing regional centres of Warwick and Stanthorpe to utilise existing infrastructure and services |
| Climate Change | <ul style="list-style-type: none"> Erosion and infrastructure damage from extreme rainfall events. Increased maintenance costs. Increased disruption to services. | <ul style="list-style-type: none"> Engage community regarding impact of climate change on existing service levels and trade-offs between cost and risk. Review impact of climate change on existing design standards |
| Known service performance deficiencies | <ul style="list-style-type: none"> Reduction in levels of service (in some locations) Increased costs associated with upgrading to higher levels of service where appropriate (in line with road classification & hierarchy). | <ul style="list-style-type: none"> Engage with the community regarding the levels of service provided for low volume roads. Cost-benefit analysis of impacts of service deficiency. |

Asset Programs to meet Demand

New unsealed roads are generally constructed by ratepayers/ developers. Construction of new assets, commits Council to operations, maintenance and renewal costs in perpetuity. See Section 5 for further discussion of additional assets and future operations, maintenance and renewal costs for inclusion in the long term financial plan.

Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets Council manages and the services they provide. In the context of the Asset and service management planning process climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions. Opportunities identified to date for management of climate change impacts on existing assets are shown in Tables 3.1 and 3.2.

4. UNSEALED ROAD NETWORK

Summary of Assets and Value

The assets covered by this Asset and service management plan are shown in Table 4.1.

Table 4.1: Unsealed Road Assets

| Asset Category | Quantity | Unit | Replacement Value |
|------------------|---------------|------|-------------------|
| Primary Access | 203 | km | |
| Secondary Access | 814 | | |
| Formed Track | 617 | | |
| TOTAL | ~1,634 | | \$101.62 M |

Council's unsealed road assets have two components:

- Formation; and
- Pavement.

The formation represents the finished earthworks on which a road pavement is constructed. It includes the earthworks, general shaping of the road and table drains. The formation is depreciated over a very long period (~1000 years) and in practice is rarely renewed.

The pavement is the portion of the road designed to support and to form the running surface for vehicular traffic. For unsealed roads this is commonly referred to as the gravel.

Table 4.2 provides a summary of the componentization of Council's Unsealed Roads.

Table 4.2: Unsealed Road Componentization

| Asset Category | Formation Replacement Value | Pavement Replacement Value | Total Replacement Value |
|------------------|-----------------------------|----------------------------|-------------------------|
| Primary Access | | | |
| Secondary Access | | | |
| Formed Track | | | |
| TOTAL | | | |

Council does not have a full asset age profile for unsealed road. This is largely due to construction dates not historically being collected as part of the capitalization process.

As the condition of gravel roads can be significantly impacted by environmental variables such as weather, and soil conditions, age is not always a good indicator for when assets will require renewal. The lack of age profile for unsealed roads means that Council does not have an age indicator for when assets will require renewal in the future. The rate at which the unsealed network deteriorates is largely a function of traffic volumes and weather conditions. As a result, an asset age profile is not an essential requirement for efficient and effective management of the unsealed road network. A robust routine inspection and condition assessment program can appropriately inform and provide a basis to develop a renewal profile for Council's unsealed road network.

Asset Condition

The condition of Council's unsealed road network has historically been monitored on a cyclical basis, once every 4 years. A comprehensive condition assessment was last conducted in 2015.

A comprehensive condition assessment of the unsealed road network is budgeted for in FY2022 and will form the basis of the condition profile in this sub-Asset and Service Management Plan. The condition profiles will be updated following the completion of the project, estimated to be June 2022.

Asset condition is measured using a 1 – 5 grading system¹⁷ as detailed in Table 4.3.

Table 4.3: ARRB Unsealed Roads Best Practice Guide Condition Index Descriptions

| Condition Rating | Description of Condition |
|------------------|------------------------------|
| 1 | Very good condition (as new) |
| 2 | Good condition |
| 3 | Fair or moderate condition |
| 4 | Poor condition |
| 5 | Very poor condition |

Assessment of asset condition is an important tool in assessing asset performance. The benefits of knowing the current and future asset performance include:

- being able to assess the probability of asset failure and mitigate the associated risks
- avoiding unplanned outages
- more robust prediction of future expenditure and capital expenditure requirements
- enhanced value for money (cost effectiveness) as the service life of an asset can be optimised and in some cases extended through effective, proactive management.

A condition assessment program for the unsealed road network has been adopted as part of the Unsealed Roads Operational Levels of Service. Refer to Section 2 for further discussion.

¹⁷ Abbreviated from ARRB Unsealed Roads Best Practice Guide 2, 2020, Sec 2.4.1, p18.

Critical Unsealed Road Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified utilising Council's Unsealed Road Hierarchy and are summarised in Table 4.3 along with the impact of reduced levels of service.

Table 4.3 Primary Access Roads with confirmed Est. ADT > 100 vpd

| Road Name | Locality | Est. ADT | Ch Start | Ch End |
|----------------------|-------------|----------|----------|--------|
| Mount Tabor Road | Mount Tabor | 126 | 920 | 2295 |
| Ogilvie Road | Rosehill | 113 | 3764 | 4587 |
| Condamine River Road | The Head | 101 | 19374 | 20640 |

Table 4.4 Primary Access Roads with Est. ADT > 100vpd to be confirmed

| Road Name | Locality | Est. ADT | Ch Start | Ch End |
|------------------|-------------------|----------|----------|--------|
| Diery Street | Rosenthal Heights | | 1992 | 2699 |
| East Street | Sladevale | | 705 | 1487 |
| Pyramids Road | Eukey | | 7555 | 7824 |
| Thornton Road | Rosenthal Heights | | 3664 | 4580 |
| Allens Road | Sladevale | | 1440 | 4926 |
| Inverramsay Road | Goomburra | | 20418 | 22622 |
| Lyndhurst Lane | Rosenthal Heights | | 7340 | 8252 |
| Mardon Road | Rosenthal Heights | | 2692 | 3316 |
| Rabbit Road | Leslie | | 1055 | 1843 |

Asset capacity and performance

Known deficiencies in service performance will be identified through the FY22 Condition Assessment Program.

The projected operations and maintenance expenditure outlined in Section 5.1 does not include the costs associated with addressing known service performance deficiencies. The known service performance deficiencies outlined in Table 4.4 will be scoped and prioritised, prior to an operational or capital budget submission as part of Council's annual budget processes.

5. UNSEALED ROADS EXPENDITURE PROGRAMS

Operations and Maintenance Expenditure

Operational and Maintenance activities are the day to day activities undertaken by Council to keep bridge and major culvert assets in good order.

Operational activities include regular activities that provide services such as public health, safety and amenity. This includes activities such as routine and condition and defect inspections, and cleaning.

Maintenance activities include all actions necessary to retain an asset as near as practicable to an appropriate service condition including any regular ongoing day-to-day work necessary to keep the asset operating. This includes instances where portions of an asset fail and require immediate repair to make the asset operational again.

Historical operations and maintenance expenditure

Council's historical maintenance expenditure is shown in Table 5.1.

Table 5.1: Road Maintenance Expenditure Trends

| Operations and Maintenance Budget | FY2017 Actual | FY2018 Actual | FY2019 Actual | FY2020 Actuals | FY2021 Actuals | FY2022 Budget |
|-----------------------------------|---------------|---------------|---------------|----------------|----------------|---------------|
| Road Maintenance | \$4.9 M | \$3.9 M | \$5.6 M | \$2.40 M | \$6.5 M | |

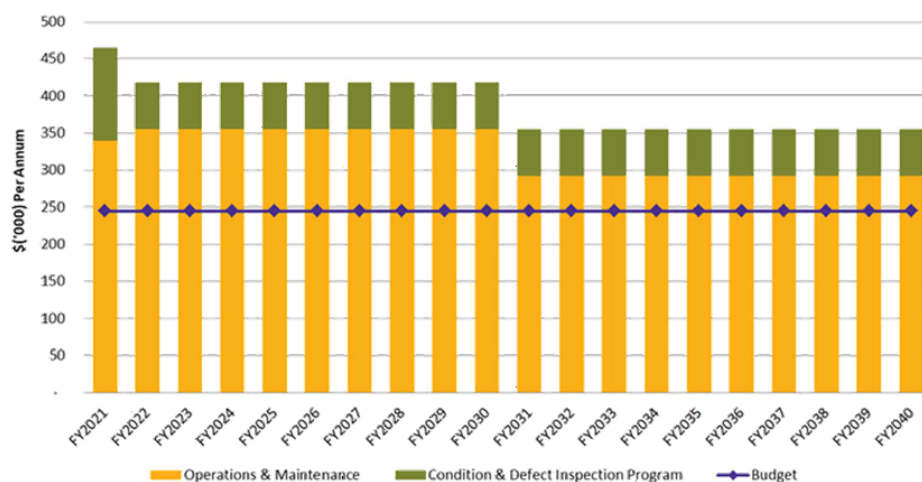
| Operations and Maintenance Budget | FY2017 Actual | FY2018 Actual | FY2019 Actual | FY2020 Actuals | FY2021 Actuals | FY2022 Budget |
|-----------------------------------|---------------|---------------|---------------|----------------|----------------|---------------|
| General | | | | \$1.51 M | \$1.51 | |
| Unsealed | \$4.9 M | \$3.9 M | \$5.6 M | \$2.40 M | \$2.84 | |
| Sealed | | | | \$1.58 M | \$1.80 | |
| Drainage | | | | \$0.48 M | | |

The above operational and maintenance expenditure levels do not reflect the minimum levels of service outlined in Section 2 of this Asset and service management plan. Historical operational and maintenance expenditure levels are **not adequate** to meet the minimum levels of service. A failure to increase operational and maintenance expenditure will result in load limiting or closing additional structures in the short to medium term. The consequences and risks of not fully funding the operational and maintenance program are identified and discussed in Section 6.

Future operations and maintenance expenditure

Forecast operational and maintenance expenditure is shown in Figure 5.1.

Figure 5.1: Projected Operations and Maintenance Expenditure¹⁸



Future operations and maintenance expenditure is based on the minimum levels of service outlined in Section 2. The projected operations and maintenance expenditure does not include the costs associated with addressing operational performance issues identified in Section 4.4

Council has a predominately reactive maintenance program for bridge and major culvert assets. Assets are able to be effectively managed through operational activities, maintenance activities and renewals **provided that they are funded and completed when required**.

Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan (Section 6).

Capital Expenditure Program

Renewal Program

Renewal or replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade or new expenditure resulting in additional future operational and maintenance costs.

Assets requiring renewal are identified using Council's condition data and outputs from the routine inspection program. Incomplete asset age data makes it difficult to project renewal costs solely using the acquisition or construction year and useful life.

Assets are identified for renewal and entered into the 10 year Capital Works Program as they approach end of life. Projected future renewal and replacement expenditures are expected to increase over time as the existing asset stock ages, asset data improves and there are better linkages between operational and capital activities.

Council currently has bridges with a replacement cost of \$1.4 M and major culverts with a replacement cost of \$2.7 M in condition rating 4 and 5. Critical assets in condition rating 4 (very poor) amount to \$1.5 M¹⁹. There are no critical assets in condition rating 5 (unsafe).

¹⁸ Figure values are in current (real) dollars.

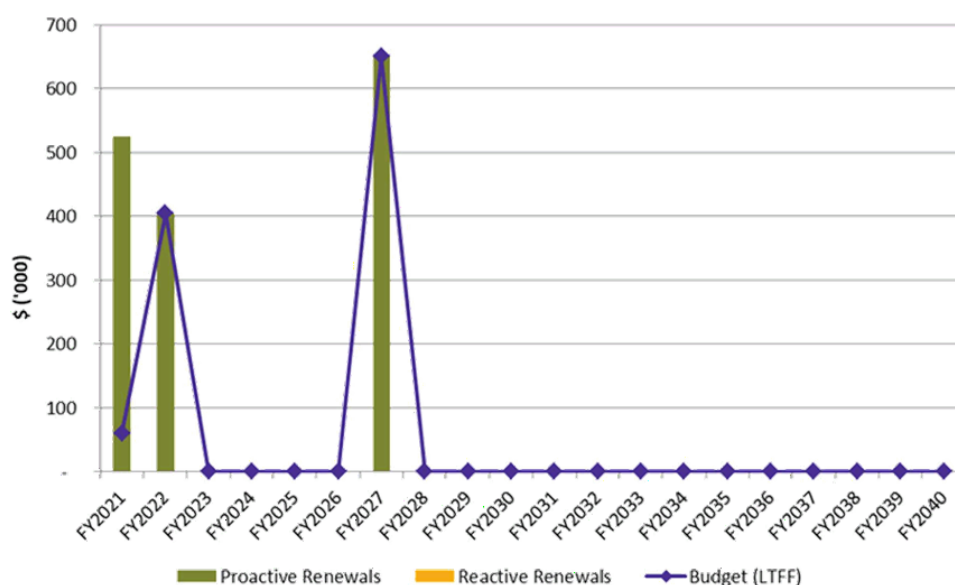
¹⁹ William Deacon Bridge, Allora Drive and Major Culvert on Park Rd, Warwick

Table 5.2: Estimated value of assets in Condition 4 and 5

| | Estimated Replacement Cost |
|-------------------------------|----------------------------|
| Bridges in Condition 4 | \$1.0 M |
| Major Culverts in Condition 4 | \$2.7 M |
| Bridges in Condition 5 | \$0.4 M |
| Major Culverts in Condition 5 | - |

The \$0.4 M of assets in condition level 5 relate to three bridges. One bridge is currently being replaced. The two remaining bridges are low-order timber bridges. A cost-benefit analysis for the replacement of the two low-order bridges will be conducted and alternative solutions evaluated.

Figure 5.2: Projected Capital Renewal and Replacement Expenditure



Projects identified for renewal have been budgeted for in the long term financial plan. It is likely that additional assets will be identified for renewal in the medium term as linkages between operational and capital activities improved.

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that is at end-of-life), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. load capacity of a structure is appropriate for the road class).²⁰

²⁰ IPWEA, 2015, IIMM, Sec 9.4.4, p 3|91.

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be greatest,
- Have a total value representing the greatest net value,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Have replacement with a modern equivalent asset that would provide the equivalent service at a savings.²¹

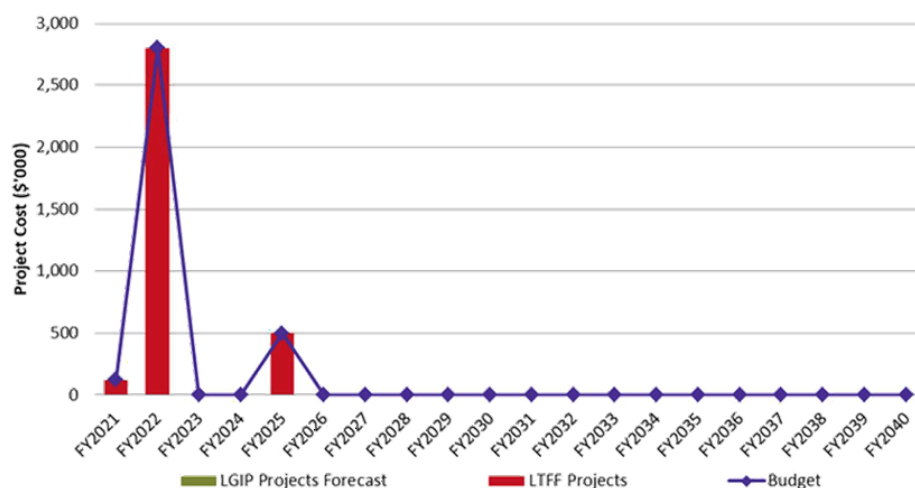
Upgrade and New Assets

New and upgrade works create an asset that did not previously exist, or increases the level of service by improving the capacity or performance of an existing asset. New and upgrade assets may result from growth, social or environmental needs.

New major structures within the Southern Downs and Granite Belt region are generally constructed by Council. Council's upgrade and new asset program for major structures is mostly limited to projects improve flood resilience. No Major structure assets are currently identified in the LGIP.

Projected capital upgrade and new asset expenditure is outlined in Figure 5.4.

Fig 5.4: Projected Capital Upgrade and New expenditure²²



Construction of new assets will impact the funding required for ongoing operations, maintenance and renewal expenditure. All new and upgrade assets should be taken into consideration as Council develops a robust projection of the funding required for the ongoing operation, maintenance and renewal of existing major structures. This is further discussed in Operations and Maintenance Expenditure and Section 8.

²¹ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

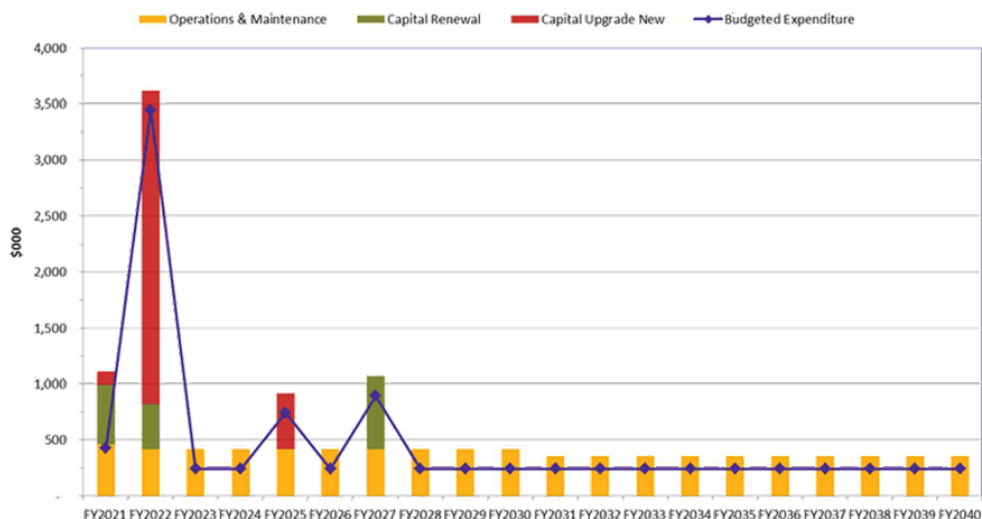
²² All amounts are shown in real values.

Projected Operating and Capital Expenditure Requirements

The financial projections from this Asset and service management plan are shown in Figure 5.6 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade /new assets).

The bars in the graph represent the anticipated budget needs required to meet service levels, the budget line indicates what is currently available. The gap between these informs the discussion on achieving the balance between services, costs and risk to achieve the best value outcome.

Figure 5.6: Projected Operating and Capital Expenditure



6. RISK MANGEMENT

Council's Risk Management Policy describes Council's commitment to risk management, staff responsibilities for risk management, and how the risk management process is managed. Procedural information regarding the implementation of the risk management program is described in the Risk Management Framework. Council's Policy and Framework are consistent with ISO 31000: 2009 Risk Management – Principles and Guidelines.

Figure 6.1 describes Council's risk management process.

Figure 6.1: Council's Risk Management Process



An assessment of risks²³ associated with service delivery from major structure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock'. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

²³ Southern Downs Regional Council Risk Management Procedure, July 2017.

Key Major Structure Risks

The key risks associated with bridge and major culverts are identified in Table 6.1.

Table 6.1 Key Risks and Treatment Plans

| Risk | Likelihood | Consequence | Risk Rating (VH, H) | Risk Treatment Plan | Residual Risk * |
|--|------------|--------------|------------------------|---|-----------------|
| Failure of a major structures causing injury or death to a community member or resulting in damage to infrastructure or property (<\$500k) | Possible | Catastrophic | Extreme | <ul style="list-style-type: none"> Annual condition and defect inspection program in line with the Transport and Main Roads Structures Inspection Manual (2016) Risk based prioritisation of maintenance activities to ensure higher order assets remain fit for purpose. | High |
| Major structures fail to reach design life and require early renewal due to underfunding of major structures operations and maintenance. | Likely | Moderate | High | <ul style="list-style-type: none"> Annual reporting of performance measures which include % completion of urgent & high priority maintenance activities completed. Risk based prioritisation of maintenance activities to ensure higher order assets remain fit for purpose and more likely to reach design life. | Moderate |
| Increased requirement for renewal or upgrade expenditure in the medium term due to better information and planning | Likely | Moderate | High | <ul style="list-style-type: none"> Cost-benefit analysis of impacts on service delivery. Consideration of alternative solutions where cost-benefit does not stack up. | Moderate |

Service Risk Trade Offs

The decisions made in adopting this Asset and service management plan are based on the objective to achieve the optimum benefits from the available resources.

What we cannot do

At current levels of funding (i.e. proposed FY2021 Budget) the following operational and maintenance activities and capital projects will not be undertaken within the next 10 years. These include:

- Completing maintenance activities as they are identified, and
- Addressing all known service performance deficiencies.

Service trade-off

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include reduction in levels of service through load limiting or closing structures.

Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may create risk consequences. These include:

- Failure of a major structure causing injury, death or resulting in significant damage to infrastructure
- Increased cost to the community due to assets failing to reach design life

These actions and expenditures are considered in the projected expenditures, and where developed are included in the Risk Management Plan.

7. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this Asset and service management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

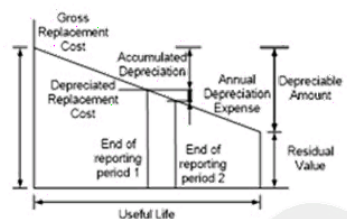
Financial Statements and Projections

Asset valuations

The best available estimate of the value of assets included in the Asset and service management plan are shown in Table 7.1.

Table 7.1: Value of Bridge Assets

| | |
|----------------------------------|-----------|
| Gross Replacement Cost | \$24.56 M |
| Accumulated Depreciation | \$4.20 M |
| Fair Value | \$20.36 M |
| Annual Average Asset Consumption | \$0.17 M |



Sustainability of service delivery

Two key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the:

- asset renewal funding ratio, and
- medium term budgeted expenditures/ projected expenditures (over the 10 year planning period).

Asset renewal funding ratio

Asset Renewal Funding Ratio²⁴ 70%

The Asset Renewal Funding Ratio is the most important indicator and indicates that over the next 10 years of the forecasting that we expect to have 70 per cent of the funds required for the optimal renewal and replacement of assets.

Medium term – 10 year financial planning period

This Asset and service management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall.

²⁴ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

| | Projected Expenditure (FY21 to FY30) | Budgeted Expenditure per LTFP (FY21 to FY30) | Total Shortfall | Ave. Annual Shortfall | % of Projected Expenditures Budgeted |
|--------------------------|--------------------------------------|--|-----------------|-----------------------|--------------------------------------|
| Operations & Maintenance | \$4.23 M | \$2.45 M | \$1.78 M | \$178,000 | 58% |
| Capital Renewals | \$1.58 M | \$1.11 M | \$0.47 M | \$47,000 | 70% |
| Capital Upgrade & New | \$3.43 M | \$3.43 M | - | - | 100% |
| Total | \$9.24 M | \$6.99 M | \$2.25 M | \$225,000 | |

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is \$5.81 M or \$581,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$356,000 on average per year giving an average 10 year funding shortfall of \$225,000 per year. This means that Major Structure assets are receiving only 62 per cent of the projected expenditures needed to provide the services documented in the Asset and service management plan.

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the Asset and service management plan and ideally over the 10-year life of the Long Term Financial Plan.

Projected operating, maintenance and capital expenditures required over the 10 year planning period are detailed in Appendix B.

Projected expenditures for long term financial plan

Table 7.2 shows the projected expenditure for the 10 year long term financial plan.

Expenditure projections are in 2020 real values.

Table 7.2: Projected Expenditures for Long Term Financial Plan (\$'000)

| Year | Operations and Maintenance | Capital Renewal | Capital Upgrade/ New | Disposals |
|--------------|----------------------------|-----------------|----------------------|-----------|
| FY2021 | | 60 | 125 | - |
| FY2022 | | 404 | 2,800 | - |
| FY2023 | | - | - | - |
| FY2024 | | - | - | - |
| FY2025 | | - | 500 | - |
| FY2026 | | - | - | - |
| FY2027 | | 650 | - | - |
| FY2028 | | - | - | - |
| FY2029 | | - | - | - |
| FY2030 | | - | - | - |
| Total | | 1,114 | 3,425 | - |

Appendix C provides a breakdown of the projected Capital expenditures by project in the Long Term Financial Plan.

Funding Strategy

Funding for assets is provided from the budget and long term financial plan.

Valuation Forecasts

Asset values are forecast to increase as additional assets are built by Council and assets are renewed as they reach end of life.

Additional assets will generally add to the operational and maintenance needs in the longer term, as well as the need for future renewal. Additional assets will also add to future depreciation forecasts.

Key Assumptions Made in Financial Forecasts

The expenditure and valuation projections in this AM plan are based on:

- Asset data obtained from the Council's technical asset register
- Financial information obtained from Council's:
 - Financial system
 - FY2021 budget, and
- Council's (FY2021) Long Term Financial Forecast.

The robustness of the asset and financial data used in future revisions of this Plan will be improved by better:

- data capture and maintenance,
- understanding of the asset condition profile, and
- understanding of operational and capital funding levels.

Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. The estimated confidence level for and reliability of data used in this AM Plan is considered to be Reliable.

Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale²⁵ in accordance with Table 7.5.

Table 7.5: Data Confidence Grading System

| Confidence Grade | Description |
|------------------|--|
| Highly reliable | Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$ |
| Reliable | Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$ |
| Uncertain | Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$ |
| Very Uncertain | Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy $\pm 40\%$ |
| Unknown | None or very little data held. |

²⁵ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8. CONTINUOUS IMPROVEMENT

Asset Management Practices

Asset management data sources

Southern Downs Regional Council does not currently have a dedicated Strategic Asset Management software solution. Geographic and technical asset data is held within Intramaps.

Accounting and financial data sources

Southern Downs Regional Council operates the Technology One software system for management of financial information and Queensland Treasury Corporation Long Term Forecasting Model. The Technology One system and Long Term Forecasting model is managed by the Finance and Information Technology team.

Plan Review

This Asset and service management plan is intended to be a living document that is updated regularly as new or improved information becomes available. To ensure the plan becomes a living document the review activities are outlined in Table 8.1.

Table 8.1: Plan review activities

| Action | Frequency | Audience |
|---|-----------------|-------------------------------------|
| Reporting on Levels of Service | Annual | Asset Management Steering Committee |
| Track and report progress of improvement plan | Annual | Asset Management Steering Committee |
| Update Asset and service management plan with: <ul style="list-style-type: none"> new knowledge condition data operations and capital projections annual budget and financial forecasts | Annual (August) | Asset Management Steering Committee |
| Formal review of Asset and service management plan | ~ 4 years | Council |

Improvement Plan

The asset management improvement plan generated from this Asset and service management plan is shown in Table 8.2.

Table 8.2: Major Structures Asset Management Improvement Plan

| Area | Task | Responsibility | Resources Required | Timeline |
|--|--|---|---|--------------------|
| Criticality & Risk | Implement TMR's Whichbridge structures prioritisation tool | Maintenance Principal Engineer | GIS Officer | < 1 year |
| Asset Data | Improve asset data on load capacity of Major Structures | Maintenance Principal Engineer | Asset Management Coordinator GIS Officer | < 1 year (ongoing) |
| Asset Data | Implement defect tracking through reflect to improve maintenance back-log forecast | Maintenance Principal Engineer | GIS Officer Asset Management Coordinator | < 18 months |
| Growth & Demand | Develop a comprehensive view of assets where resilience issues have been identified | Maintenance Principal Engineer Capital Delivery Principal Engineer | Asset Management Coordinator GIS Officer | < 2 years |
| Service Strategy | Develop a management plan for major culverts to proactively manage replacement and maintenance as the asset base ages. | Maintenance Principal Engineer | Asset Management Coordinator GIS Officer | <2 years |
| Service Strategy | Review the service statement and performance measure for resilience level of service to align with current level of service once performance data has been obtained. | Asset Management Coordinator | Maintenance Principal Engineer | < 3 years |
| Asset Information | Identify where hydraulic modelling is required for the future replacement of major culverts on high-order roads | Maintenance Principal Engineer | Manager Works | < 3 years |
| Expenditure Programs/ Financial Forecasts | Review actual costs for inspections and maintenance and review assumptions included in the Asset Management Plan and/ or Operational Budget | Asset Management Coordinator | Maintenance Principal Engineer | |

APPENDIX A: Overview of Routine Maintenance Treatments

| Maintenance Treatment | Activity | Schedule | Who |
|-------------------------------|---|---|------------------------------------|
| Patrol Grade | Rectifies single defect utilising a grader | | |
| Medium Formation Grade | Rectifies multiple defects and <ul style="list-style-type: none"> - Restores width and shoulders - Restores shape of table drains (if required) - Restores cross-fall/ shape - Does not restore gravel depth - Spot application of gravel to cover formation where exposed. - No ripping in a medium formation grade. | Approximately every 18 months. <i>Future target:</i> Where IRI > 7 or 8 | Unsealed Network Maintenance Crews |
| Heavy Formation Grade | Rectifies multiple defects and <ul style="list-style-type: none"> - Restores width and shoulders - Restores shape of table drains - Restores cross-fall/ shape - Does not restore gravel depth - Spot application of gravel to cover formation where exposed - Ripping and water utilised. | | |

APPENDIX B: Background Information for the Planning Assumptions for the Local Government Infrastructure Plan

Attach planning assumption document

APPENDIX B: Major Structure Expenditure Projections

| | Budget FY2021 | F'cast Y1 FY2022 | F'cast Y2 FY2023 | F'cast Y3 FY2024 | F'cast Y4 FY2025 | F'cast Y5 FY2026 | F'cast Y6 FY2027 | F'cast Y7 FY2028 | F'cast Y8 FY2029 | F'cast Y9 FY2030 |
|--|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Operations & Maintenance | | | | | | | | | | |
| Routine Inspection Program | 20,000 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 | 35,200 |
| Maintenance Program | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 | 320,100 |
| Total General O & M | 340,100 | 355,300 | 355,300 | 355,300 | 355,300 | 355,300 | 355,300 | 355,300 | 355,300 | 355,300 |
| Condition & Defect Inspection Program | | | | | | | | | | |
| Level 2 Inspections | 54,000 | 23,000 | 23,000 | 23,000 | 23,000 | 23,000 | 23,000 | 23,000 | 23,000 | 23,000 |
| Level 3 Inspections | 70,800 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Total Condition Program | 124,800 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 | 63,000 |
| Operations & Maintenance | 464,900 | 418,300 | 418,300 | 418,300 | 418,300 | 418,300 | 418,300 | 418,300 | 418,300 | 418,300 |
| Capital Program | | | | | | | | | | |
| Proactive Renewals | | | | | | | | | | |
| Renewals identified and scoped (from LTFP) | 60,000 | 404,000 | - | - | - | - | 650,000 | - | - | - |
| Renewals not included in LTFP | 467,000 | - | - | - | - | - | - | - | - | - |
| Renewals identified and yet to be scoped (from Condition Data) | - | - | - | - | - | - | - | - | - | - |
| Total Proactive Renewals | 527,000 | 404,000 | - | - | - | - | 650,000 | - | - | - |
| Reactive Renewals | | | | | | | | | | |
| Emergent Renewals of failed assets | - | - | - | - | - | - | - | - | - | - |
| Total Reactive Renewals | - | - | - | - | - | - | - | - | - | - |
| Capital Renewal | 527,000 | 404,000 | - | - | - | - | 650,000 | - | - | - |
| Upgrade and New Works | | | | | | | | | | |
| LGIP Projects | - | - | - | - | - | - | - | - | - | - |
| LTFP Projects | 125,000 | 2,800,000 | - | - | 500,000 | - | - | - | - | - |
| Capital Upgrade New | 125,000 | 2,800,000 | - | - | 500,000 | - | - | - | - | - |
| Capital Program | 652,000 | 3,204,000 | - | - | 500,000 | - | 650,000 | - | - | - |
| Operating Budget | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 | 244,800 |
| Capital Budget | 185,000 | 3,204,000 | - | - | 500,000 | - | 650,000 | - | - | - |
| Budgeted Expenditure | 429,800 | 3,448,800 | 244,800 | 244,800 | 744,800 | 244,800 | 894,800 | 244,800 | 244,800 | 244,800 |

APPENDIX C: Major Structure Projects in Long Term Financial Plan

| <i>Projects</i> | Budget | F'cast Y1 | F'cast Y2 | F'cast Y3 | F'cast Y4 | F'cast Y5 | F'cast Y6 | F'cast Y7 | F'cast Y8 | F'cast Y9 |
|---|----------------|------------------|-----------|-----------|----------------|-----------|----------------|-----------|-----------|-----------|
| | FY2021 | FY2022 | FY2023 | FY2024 | FY2025 | FY2026 | FY2027 | FY2028 | FY2029 | FY2030 |
| <i>Renewal</i> | | | | | | | | | | |
| Bourke Rd Bridge Replacement | - | | | | | | | | | |
| Connolly Dam Rd - Major Culvert Widening | 60,000 | 404,000 | | | | | | | | |
| Laidis Ln Bridge Replacement | | | | | | | 650,000 | | | |
| Renewal Total | 60,000 | 404,000 | - | - | - | - | 650,000 | - | - | - |
| <i>Upgrade/ New</i> | | | | | | | | | | |
| Victoria St - Major Culvert to Bridge Upgrade | 50,000 | 1,810,000 | | | | | | | | |
| Homestead Rd - Minor Culvert to Major Culvert Upgrade | 75,000 | 990,000 | | | | | | | | |
| Bronson Bridge - New Bridge | | | | | 500,000 | | | | | |
| Upgrade/ New Total | 125,000 | 2,800,000 | - | - | 500,000 | - | - | - | - | - |
| Capex Total | 185,000 | 3,204,000 | - | - | 500,000 | - | 650,000 | - | - | - |