GWYDIR
SHIRE COUNCIL

Gwydir Shire Council

TRANSPORT ASSET MANAGEMENT PLAN

June 2017

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4	1st June 2017	Revision using 2017 LTP and 2017 Road Condition Assessment	R Jane	A Eddy/ R Jane	Council

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1. EXECUTIVE SUMMARY

Context

Gwydir Shire Council is the result of an amalgamation of Bingara Shire Council, Yallaroi Shire Council and part of Barraba Shire Council on the 17th of March 2004.

The Gwydir Shire encompasses a diverse landscape that is both picturesque and productive.

It is 9,122 square kilometres in size and is situated north of Tamworth Regional Council and continues almost to the Queensland border.

The southern boundary of the shire is the Nandewar Range where the Gwydir and Namoi Valleys meet. The Horton Valley and Cobbadah District are home to some Australia's most highly regarded beef cattle studs. These enterprising farmers use the latest artificial breeding and agronomic technology to produce beef of the highest quality. Meat Sheep and merinos that grow high quality wool are also grazed in this area.

The Gwydir River enters the Gwydir Shire where it spills from the Copeton Dam and meanders in a westerly direction through the towns of Bingara and Gravesend. The Gwydir Valley is well known for irrigated and dry land cropping as well as livestock production. In addition to the traditional crops of wheat, barley, oats and sorghum, there are olive groves, pecan nut plantations and freshwater fish farms in the Gravesend district.

Heading northwest from the timbered surrounds of the town of Warialda and the close-knit community of Coolatai, the countryside opens into an undulating vista of basalt farmland. This area, including the villages of Crooble, Croppa Creek and North Star, is Australia's 'Golden Triangle'. Farmers using advanced farming techniques, such as minimum tillage and satellite guidance systems, produce a variety of high yielding crops such as wheat, barley sorghum, maize, chick peas, canola and cotton to name just a few.

This area also has several cattle feedlots, which supply grain fed beef to the Australian domestic market and export markets throughout the world. Gwydir Shire residents enjoy excellent medical and health services with medical centres in both Warialda and Bingara. The Shire boasts two new hospitals and aged care facilities have been expanded and are of a very high standard.

Shire residents enjoy a quality and plentiful water supply. In fact the new Bingara Water Treatment Plant and Reservoir were officially opened on Friday 13th May 2011. As well, residents are provided with open, beautifully maintained streetscapes, parks and sporting facilities.

Our younger citizens enjoy a great range of services and educational opportunities. The Gwydir shire is a strong and socially minded community with many volunteers. Volunteering has taken on a whole new dimension with many manning the newly opened Warialda and Bingara Visitor Information Centres which has allowed the centres to be open over weekends and public holidays.

Living in Gwydir Shire has purpose and direction. What it means to live and work in our Shire is explained in the following five guiding themes. These themes form the basis of our strategic planning and direction for the next ten years.

1.1 The Council's guiding Themes:

1.2 A Healthy and Cohesive Community (Social)

Gwydir Shire has a staggering statistic: for an area of over 9,000 km² there are less than 6,000 residents- or one resident per 1.5 km².

Rather than being fragile as a consequence of this statistic, the Shire has a strong sense of community. Each of the Shire's communities shares a sense of pride in their place and is positive about their future.

This community pride and confidence is based on a commitment, a spirit of co-operative effort, and a belief that their community can achieve harmony, cohesion and positive results.

2. Building the Business Base (Economy)

Business in Gwydir Shire is predominately independently owned, demonstrating a commitment and attachment to the local community. Business owners do have a strong local clientele base and display a gritty determination to succeed. These characteristics show a confidence in their future that is not always reflected in official statistics and reports.

Current analysis of future trends in the Shire is still difficult due to lack of data. Data from the last Census, undertaken in 2001, does not necessarily reflect changes in the regional and local economy since that time. There is also a wealth of evidence that small rural communities and townships have diminished in size, activity and economic importance over the last few decades.

This trend is acutely felt in towns such as Warialda and Bingara. Warialda, for example, was a centre for agricultural services and supplies catering for large agricultural enterprises which employed many staff. The business of agriculture has changed, and this has profoundly influenced Warialda's business landscape.

Gwydir Shire's economy is dependent on agriculture but that 'gritty determination' is bringing other newer businesses and opportunities to the Shire. Recent seasons have bought much needed rain which has led to a resurgence in wealth and positivity.

There are also strong signs that tourism is bringing a new dimension to the Shire especially with the construction of the new Warialda Tourist Information Centre, and the refurbishment of the Roxy complex in Bingara.

For tourism to strive, however, it needs to be based on the development of a strong brand and marketing strategy. The Shire also has an opportunity to capitalise on the 'tree change' movement, or to target communities who are being affected by 'sea change' impacts.

Business 'infrastructure' is a priority for the future economic sustainability of the Shire. The 'infrastructure' priorities vary from facilitating increased participation by women in the workforce, through to leveraging of regional training opportunities and programs such as the Gwydir Learning Region.

In addition, the impending construction of the Hospitality, Primary Industries and Automotive Trade Training Centres will create new industry, employment and opportunities.

Over the last three years an effective mobile/internet service has been implemented and this has enabled businesses to operate effectively and for Gwydir Shire to project a professional image to the external business community.

The Shire is located at the centre of the North-West/New England Region and this has made Bingara a place to meet and to host conferences. The opportunity to increase the number of meetings and conferences to be held in our Shire will be enhanced when the Roxy complex is fully functional.

3. An Environmentally Responsible Shire (Environment)

Over the history of European settlement in the Gwydir Shire area, some of the past decisions were made without a complete understanding of their impact upon the landscape and the consequences of upsetting natural ecosystems. When the development of the land occurred at rates faster than the rate at which degradation became apparent, these less than desirable practices were repeated.

Extensive land clearing and extraction of water for agriculture are examples of practices that can over time, detrimentally impact the natural environment of this Shire. Possible consequences are species loss; both terrestrial and riverine flora and fauna, and physical and chemical degradation of soils and river systems.

Today there is a lot of activity, by State agencies, non-government organisations, farmers, the rural community, and the Council to enhance the sustainability of Gwydir's natural resources.

Looking into the future, the emphasis is on achieving both environmental sustainability as well as robust agricultural activity. In Gwydir Shire there are significant environmental assets that require special attention and care. These features are also key attractions for a healthy tourism industry in the Shire. Gwydir River is one such example.

The Council will partner with the Border Rivers-Gwydir Catchment Management Authority to adopt a catchment wide approach to the integrated issues of climate change, soil, water and habitat conservation and establishment in the Shire. The Border Rivers – Gwydir Catchment Management Authority is working towards a potential outcome to operate as an active trader in the 'environment' in the future. Such an economic mechanism will put a value on the environment and enable landowners to be compensated for land areas that become dedicated to conservation.

Council has a key role to play in furthering sustainable behaviour within the Gwydir community.

Education and provision of key information can help residents move towards more sustainable practices, and to help them understand how their actions can ameliorate a variety of environmental impacts.

Council can lead by example through good management and by demonstration. With limited resources, Council will prioritise water and waste as key environmental issues.

It is argued that human activity has interrupted the global carbon cycle and is beginning to have a profound impact on the Earth's climate. The changes that are required to address climate change can offer an opportunity for innovation and economic development.

The agricultural sector is the second biggest contributor to greenhouse gas emissions through the emission of methane and nitrous oxide by livestock. Being a major contributor to emissions, agriculture will be expected to reduce emissions, a challenge for a sector already confronted by other constraints.

However, with its large land base, climate change is a real opportunity for Gwydir Shire.

One such opportunity is in exploring the development of carbon sequestration opportunities, including commercial plantations, and Landcare plantings to offset greenhouse gas emissions.

These plantings would also provide benefits in addressing salinity impacts, and could be planned to complement biodiversity objectives by creating habitat corridors and links across the landscape.

4. A Proactive Consumer–Orientated Organisation

Council can only achieve the outcomes it seeks for the Shire by continuing to operate as a well-managed organisation. The organisation must also have the community's respect and be dedicated to working innovatively and effectively in the Shire's interest.

The organisation will need to continue to adapt to important changes. For example, people affected by Council's decisions are expecting to participate and influence the conduct of those issues. Modern communication technology is facilitating closer involvement with and exposure of Council's processes. These trends will need to be managed with sensitivity and care if that legitimate community request is to be reflected. These processes also need to reflect the requirements of the Department's Integrated Planning and Reporting.

Council's workplace must adapt to these and other changes as they emerge so that it appeals to talented people. Council recognises the quality of the people it can attract and retain in its organisation is vital to its achieving its program. It values its people and appreciates their contribution. It will continue to recognise the obligation for them to be provided with a safe and satisfying workplace; to be treated equitably and with respect; and to be properly rewarded.

The functions and responsibilities of local government continue to increase. That provides Council with the challenges of selecting its activities wisely and of adequately resourcing its programs. Opportunities for new resources and increased effectiveness will be pursued. Council will also place an emphasis on improving alignment between employees and Council's values and goals.

The programs and services the Council selects must be carefully designed and delivered to equitably and cost effectively advance the wellbeing of the Shire's people.

5. Regional and Local Leadership

Council is committed to leading the Shire in addressing the issues identified in this Strategy and moving towards the Vision it has defined for the Shire. This focus on leadership relates to both leadership within the Shire and that external to it.

The Shire has already demonstrated innovative responses through initiatives such as the Gwydir Learning Region.

In addition, the formation and direction of the Australia Rural Road Group is, so far, an effective and highly supported body trying to gain funding to improve the nation's dramatically deteriorating rural road network.

This continued 'can do', innovative approach, and the enthusiasm and energy sets Gwydir Shire apart and allows the Shire to 'punch above its weight' in the region.

As an entity operating in the twenty first century, it is imperative that the Council demonstrate best practice corporate governance behaviour. In time, sustainability and governance will be managed as a single holistic approach to the management of an organisation. Gwydir Shire recognises this trend and is in the process of implementing the Department's Integrated Planning and Reporting requirements.

Transport of agricultural produce and goods to markets and people to work, school and recreation is vital to continued community growth and development. The transport network servicing the community is ageing and services are in decline resulting in loss of all-weather access on many unsealed roads, detours around about 20 bridges with load limits and increasing maintenance costs.

The Transport Service

The Transport Service network comprises:

- 146.69 km Sealed State Roads;
- 260.48 km Sealed Regional Roads;
- 317.63 km Sealed Shire Roads;
- 1429.66 km Unsealed Shire Roads;
- 56.09 km Urban Roads.

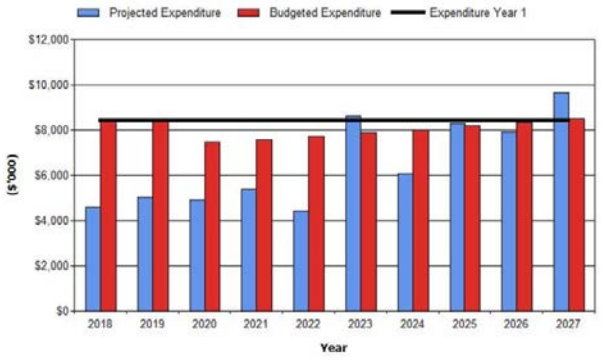
Therefore Gwydir Shire Council maintains (excluding State Roads) 634.20km sealed roads and 1429.66 km unsealed roads, totalling 2063.86km (excluding State Roads).

These infrastructure assets have a current replacement value of $361,121,000.

What does it Cost?

The projected cost to provide the services covered by this Asset Management Plan includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is $6.492million per year (excluding depreciation, averaged over ten years).

Council's estimated available funding for this period is $8.048million per year (excluding depreciation, averaged over ten years). This is a funding surplus of $1,556,000 per year which is 24 per cent of the cost to provide the service. Projected and budgeted expenditure are shown in the graph below.



Councils' present funding levels are sufficient to continue to provide existing services at current levels in the medium term.

What does it cost ?

TRANSPORT - 2018-2027__	
Executive Summary - What does it cost?	**($000)**
10 year total cost [10 yr Ops, Maint, Renewal & Upgrade Proj Exp]	**$64,916**
10 year average cost	**$6,492**
10 year total LTFP budget [10 yr Ops, Maint, Renewal & Upgrade LTFP Budget]	**$80,478**
10 year average LTFP budget	**$8,048**
10 year AM financial indicator	**124%**
10 year average funding shortfall	**$1,556**

What we will do

Council plans to provide Transport services for the following:

- Operation, maintenance, renewal and upgrade of sealed/unsealed roads and ancillary assets to meet service levels set by council in annual budgets;
- Warialda High Productivity Vehicle Route (subject to successful funding application);
- Maintain wet weather accessibility at greater than 90% for unsealed roads;
- Enhance the accessibility of Shire Roads during flood events to allow residents access to services as soon as economically viable.

What we cannot do

Works and services that cannot be provided under present funding levels are:

- Increase the sealed local road length without considering the financial impact this will have on the operation, maintenance and renewal of existing assets;
- Convert all causeways that are impassable after storms with an ARI less than 1 year, to bridges within the next 10 years.

Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:

- Increase in number of unsealed roads that do not provide all-weather access to residents and rural properties;
- Increase in pavement and seal age, which will may cause deformation and moisture infiltration.

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

- Developing and promoting use of major all-weather access routes with signage and publicity,
- Identifying pavements and seal areas at risk by regular condition assessment and include renewal works in the relevant programs.

The Next Steps

The actions resulting from this asset management plan are:

- Engage the community on service delivery, and funding issues raised in this AM Plan;
- Seek additional funding for sealed road upgrades for High Productivity Vehicles (HPV's) routes, concrete bridge construction and concrete culvert construction.

Questions you may have

What is this plan about?

This asset management plan covers the roads assets that serve the Gwydir Shire Community's needs. These assets include roads and related infrastructure (with exception of bridges and box culverts >6.0m) throughout the Council area that enable people to get to work, and recreation, children to school, farm produce to markets and goods and services to shops.

What is an Asset Management Plan?

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

An asset management plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner. The Plan defines the services to be provided, how the services are provided and what funds are required to provide the services.

Why is there a funding surplus?

Most of the Council's road network was constructed from government grants and rates revenue. Because Council has a strong focus on the strategic value of roads, providing sufficient funds for road maintenance and renewals has, historically, been a major focus.

Although in previous versions of this document these assets appeared to be approaching the later years of their life and require renewal a thorough asset inspection and analysis of lifecycle costing has revealed otherwise. Further to this, Council staff have reviewed all roads related service delivery methods resulting in significant efficiencies being realised. This has resulted in much smaller funding projections to maintain and renew the road asset. Further to this, service levels have been reviewed by Council to provide the best value for money and the most equitable provision of roads infrastructure to all residents.

Councils' present funding levels are sufficient to continue to provide existing services at the revised service levels in the medium term.

What options do we have?

Resolving the funding shortfall was achieved in several steps:

1. Improving asset knowledge so that data accurately records the asset inventory, how assets are performing and when assets are not able to provide the required service levels,
2. Improving our efficiency in operating, maintaining, replacing existing and constructing new assets to optimise life cycle costs,
3. Identifying and managing risks associated with providing services from infrastructure;
4. Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure;
5. Identifying assets surplus to needs for disposal to make saving in future operations and maintenance costs (e.g. maintenance of Shire Roads on Crown Land);
6. Consulting with the community to ensure that transport services and costs meet community needs and are affordable;
7. Developing partnership with other bodies, where available to provide services (e.g. self-help program);
8. Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services (e.g. Heavy Vehicle Safety and Productivity Program).

What happens if the surplus becomes a shortfall?

It is likely that council will have to reduce service levels in some areas, unless new sources of revenue are found. For transport infrastructure, the service level reduction may include loss of all-weather access for a number of unsealed roads as shown in the photo below and increase in footpath trip hazards and causeways impassable after minor storms.

What can we do?

Council can develop options and priorities for future Road Infrastructure services with costs of providing the services, consult with the community to plan future services to match the community services needs with ability to pay for services and maximise benefit to the community for costs to the community.

2. INTRODUCTION

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service.

The asset management plan is to be read with Council's Asset Management Policy, Asset Management Strategy and the following associated Integrated Planning and Reporting documents:

- Gwydir Shire Council Community Strategic Plan
- Gwydir Shire Council Operational Plan
- Gwydir Shire Council Delivery Program

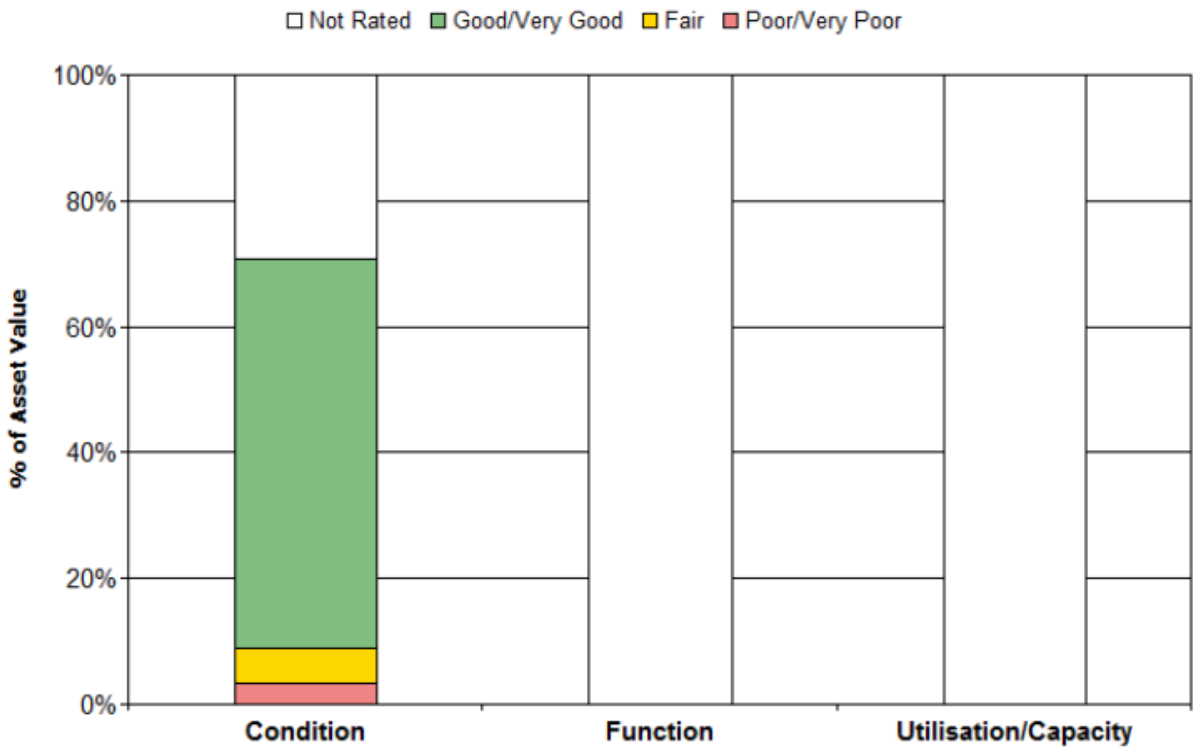
This infrastructure assets covered by this asset management plan are shown in Table 2.1.

Table 2.1: Assets covered by this Plan

Asset category	Dimension	Replacement Value
Regional Roads	**260 km**	**$ 66,009,576**
Local Sealed Rural Roads	**317 km**	**$ 73,850,996**
Local Unsealed Rural Roads	**1374 km**	**$ 18,961,801**
Urban Roads	**56.09 km**	**$13,905,056**
Roads Infrastructure (bridges, culverts, kerb etc.)		**$ 82,010,930**
Non Depreciable Earthworks Under Roads (not condition rated)		**$105,899,641**
TOTAL		**$361,121,000**

*Note: State Roads (HW12 & MR63) are not covered by the Asset Management Plan.

The current state of these assets is:



Not Rated	29.4 %	100 %	100 %
Good / Very Good	61.7 %	0 %	0 %
Fair	5.5 %	0 %	0 %
Poor / Very Poor	3.5 %	0 %	0 %

2.2 Goals and Objectives of Asset Management

The Council exists to provide services to its community. Some of these services are provided by infrastructure assets. Council has acquired infrastructure assets by 'purchase', by contract, construction by council staff and by donation of assets constructed by developers and others to meet increased levels of service.

Council's goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach,
- Developing cost-effective management strategies for the long term,
- Providing a defined level of service and monitoring performance,
- Understanding and meeting the demands of growth through demand management and infrastructure investment,
- Managing risks associated with asset failures,

- Sustainable use of physical resources,
- Continuous improvement in asset management practices.[1]

The goal of this asset management plan is to:

- Document the services/service levels to be provided and the costs of providing the service,
- Communicate the consequences for service levels and risk, where desired funding is not available, and
- Provide information to assist decision makers in trading off service levels, costs and risks to provide services in a financially sustainable manner.

This asset management plan is prepared under the direction of Council's vision, mission, goals and objectives.

[1] IPWEA, 2006, *IIMM* Sec 1.1.3, p 1.3.

Council's vision is:

Vision

"To be the recognised leader in Local Government through continuous learning and sustainability."

Council's mission is:

Mission

"To ensure that the Council's long term role is viable and sustainable by meeting the needs of our residents in a responsible caring way, attract sustainable development while maintaining the traditional rural values, character and culture of our people."

Community Strategic Plan Objectives Addressed in this Plan

Outcome 2.1 Our economy is growing and supported

Our business community is prepared for future growth and challenges. We welcome new business development opportunities and work with private enterprise to establish strategic partnerships aligned to the creation of employment and industry in our community.

Tourism is embraced by all facets of our community and Gwydir Shire Council is seen as a destination of choice for travellers.

Strategies to get there

2.1.1 Plan for and develop the right assets and infrastructure

2.1.2 Support the growth of our business community.

2.1.3 Promote our community as the place to visit, live, work and invest

Council Role

- Promote and support business investment and employment growth
- Provide visitor information services
- Advocate for better internet access
- Partner with business and industry to attract funding and investment
- Develop and promote tourism
- ***Provide and maintain our road network***
- ***Advocate for funding for major projects***
- ***Provide and maintain public infrastructure***

Table 2.2: Organisation Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in AMP
Ensure shire wide sustainability by providing an appropriate standard of infrastructure that supports economic development.	Consult with and assist businesses and industry to meet their future infrastructure needs.	Through development of an integrated asset management plan covering road infrastructure services for business and industry.
	Ensure effective and efficient management of council owned infrastructure to support economic development.	Minimise life cycle costs of infrastructure for asset users and ensure the AMP demand forecast model will identify the public infrastructure to be managed in a sustainable manner.
	Ensure a strategic regional approach to transport infrastructure demands.	Continue to liaise with State Government and local governments regional authorities to ensure fit for purpose assets are provided within the region with life cycle costs being considered with asset creation, operation and disposal and incorporate demand projections into the asset management plan.
	Facilitate improvement in transport for industry by road, rail, air and sea.	Continue to liaise with key stakeholders to facilitate efficient transport function through the region providing access links to regional, national and global markets and incorporate demand projections into the asset management plan.
Safe and reliable transport services.	Maintain and develop roads, footpaths and tracks including car parking at appropriate standards.	Continue to develop and maintain regular inspection of asset condition and defects and develop maintenance and capital works programs for inclusion in the asset management plan.
	Work with the Roads and Traffic Authority to ensure appropriate traffic management and road safety.	Continue to liaise with the Roads and Traffic Authority through the local traffic committee to develop strategies for traffic management and road safety for inclusion in the asset management plan.

Plan Framework

Key elements of the plan are

- **Levels of service** – specifies the services and levels of service to be provided by council.
- **Future demand** – how this will impact on future service delivery and how this is to be met.
- **Life cycle management** – how the organisation will manage its existing and future assets to provide the required services
- **Financial summary** – what funds are required to provide the required services.
- **Asset management practices.**
- **Monitoring** – how the plan will be monitored to ensure it is meeting the organisation's objectives.
- **Asset management improvement plan.**

2.3 Core and Advanced Asset Management

This asset management plan is prepared as a first cut 'core' asset management plan in accordance with the International Infrastructure Management Manual[2]. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

2.4 Community Consultation

This 'core' asset management plan is prepared to facilitate community consultation initially through feedback on public display of draft asset management plans prior to adoption by Council. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability to pay for the service.

[2] IPWEA, 2006.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Community surveys undertaken in 2015 show a majority of Gwydir Shire Residents believe Council's road infrastructure to be adequate, or have no opinion on its adequacy. This indicates that the majority of Gwydir Shire's residents believe its road network and maintenance delivery to be satisfactory.

3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. Relevant legislation is shown in Table 3.2.

Table 3.2: Legislative Requirements

Legislation	Requirement
NSW Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
NSW Roads Act 1993	Defines the 'Road Authority" for all classifications of roads in NSW and defines the roles and responsibilities of the "Road Authority".
NSW Road Transport (General) Act 2013.	Sets out the rules to be followed and responsibilities of users of the road system and how the rules are enforced
NSW Workplace, Health and Safety Act 2011	Sets out the roles and responsibilities to secure the health, safety and welfare of persons at work.
Environment Protection And Biodiversity Conservation Act 1999	Provides for the protection of the environment, established the Department of the Environment and defines its functions and powers.
Environmental Planning and Assessment Act 1979	Sets out guidelines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Environmental Planning and Assessment Amendment Act 2008	Sets out guidelines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Australian Standards	Provides guidance for transport asset managers in use of transport services such as AS1742; Manual of Uniform Traffic Control Devices
Australian Road Rules	The Australian Roads Rules are incorporated into State Traffic Regulations under the Road Traffic Act

3.3 Current Levels of Service

Council has defined service levels in two terms.

Community Levels of Service - relate to the service outcomes that the community wants in terms of safety, quality, quantity, reliability, responsiveness, cost effectiveness and legislative compliance.

Community levels of service measures used in the asset management plan are:

Quality	How good is the service?
Function	Does it meet users' needs?
Safety	Is the service safe?

Technical Levels of Service - supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the council undertakes to best achieve the desired community outcomes.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as opening hours, cleansing frequency, mowing frequency, etc.
- Maintenance – the activities necessary to retain an assets as near as practicable to its original condition (e.g. road patching, unsealed road grading, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade – the activities to provide an higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

Council's current service levels are detailed in Table 3.3.

Table 3.3: Current Service Levels - Roads

Key Performance Measure	Level of Service Objective	Performance Measure Process	Desired Level of Service	Current Level of Service (2015)
COMMUNITY LEVELS OF SERVICE				
Quality	Roads are smooth.	Customer service requests relating to roughness.	< 8 per month	TBA
Function	Access is available at all times.	Customer service requests relating to non-access.	< 2 per month	TBA
Safety	Roads are safe for responsible drivers who drive to the	Total Number of accidents Number of injury	< 30 per year	32 per year

	road conditions.	accidents	< 20 per year	22 per year

Key Performance Measure	Level of Service Objective	Performance Measure Process	Desired Level of Service	Current Level of Service (2017)
TECHNICAL LEVELS OF SERVICE				
Condition	Servicing and management.	Condition and defects inspections at nominated intervals based on asset class	Defects are reducing.	200 (2009) 160
	Undertake resealing program	Resealing frequency	Regional 13yrs Arterial 15yrs Collector 18yrs	Regional 18yrs Arterial 20yrs Collector 24yrs
	Carry out routine patching	Patching frequency	Potholes not to exceed 150mm diameter	Potholes do not exceed 200mm diameter
Accessibility	Provide all weather access to Regional, Local Collector and Local Access road	Duration and frequency of road being impassable	Less than ½ day when road is impassable per year at no more than 2 locations	Less than 1 day when road is impassable per year at no more than 2 locations
Maintenance	Grading of unsealed roads	Average Maint. Grading Frequency	Arterial 2/yr Collector 2/yr Local 1/yr Minor 0.5/yr	Arterial 2/yr Collector 2/yr Local 1/yr Minor 0.5/yr
		Cost effectiveness ($/km/yr)	Arterial $ 657/km Collector $ 472/km Local $ 482/km Minor $ 384/km	Arterial $ 657/km Collector $ 472/km Local $ 482/km Minor $ 384/km
		Unsealed Roads Maintenance Budget	$ 515/km	$ 515/km
	Repair sealed road hazards and defects	Cost effectiveness ($/km/yr)	Arterial $ 1805/km Collector $ 1142/km Local $ 364/km Minor $ 240/km	Arterial $ 1805/km Collector $ 1142/km Local $ 364/km Minor $ 240/km
		Sealed Roads Maintenance Budget	$ 2035/km	$ 2035/km
		Maintenance Budget	Total $ 1,355,165/yr	Total $ 1,355,165/yr
Safety	Provide Clear Safety Signage	Annual Defect and Condition Survey	Less than 10% signs with defects	Less than 10% signs with defects

Key Performance Measure	Level of Service Objective	Performance Measure Process	Desired Level of Service	Current Level of Service (2017)
Renewal	Resheeting of Gravel Shire Roads	%age of length resheeted per year	Arterial 12% per year Collector 10% per year Local 8% per year Minor 6% per year	Arterial 19.9% per year Collector 5.3% per year Local 8.2% per year Minor 6.3% per year
		Resheeting Budget	Arterial $820,000/yr Collector $280,000/yr Local $525,000/yr Minor $264,000/yr	Arterial $472,203/yr Collector $437,839/yr Local $391,559/yr Minor $132,736/yr
	Resealing of Sealed Shire Roads	%age of length resealed per year	Arterial 7% per year Collector 6% per year Local 5% per year Minor 5% per year Urban 5% per year	Arterial 6.09% per year Collector 6.03% per year Local 0% per year Minor 0% per year Urban 0% per year
		Resealing Budget	Arterial $339,568/yr Collector $55,264/yr Local $102,400/yr Minor $25,248/yr Urban $0/yr	Arterial $258,723/yr Collector $64,002/yr Local $122,583/yr Minor $0/yr Urban $163,332/yr
	Sealed Shire Road Renewal	Sealed Road Renewal Budget	Arterial $997,481/yr Collector $162,338/yr Local $300,800/yr Minor $74,660/yr	Arterial $1,521,850/yr Collector $0/yr Local $0/yr Minor $0/yr
		Renewal Budget	Total $ 2,475,000	Total $ 2,043,000
Upgrade/New	Upgrading of Road Network	% of properties without all-weather access	All properties have all weather access within 5 years	% (2017)
		Upgrade/ New Budget	$350,000/yr over 5 years	$274,212

3.4 Desired Levels of Service

At present, indications of desired levels of service are obtained from various sources including residents' feedback to Councillors and staff, service requests and correspondence. Council has yet to quantify desired levels of service. This will be done in future revisions of this asset management plan.

4. FUTURE DEMAND

4.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc.

DESCRIPTION	CENSUS 2011	CENSUS 2006	Projection 2030
Population			
Bingara	1093	1872	3230
Warialda	1120	1871	3228
Gravesend	n/a	276	476
North Star	n/a	638	1101
Gwydir Shire	4296	4657	8035
% of population:	**Bingara:**		
0-4 yrs	4.2%	5.9%	
5-14yrs	8.6%	11.4%	
15-24yrs	7.8%	6.5%	
25-54yrs	25.5%	31.8%	
55-64yrs	15.7%	17.0%	
65yrs and over	38.1%	27.5%	
% of population:	**Warialda:**		
0-4 yrs	5.8%	4.9%	
5-14yrs	11.2%	13.8%	
15-24yrs	11.5%	10.4%	
25-54yrs	32.1%	37.2%	
55-64yrs	13.9%	14.8%	
65yrs and over	25.5%	18.9%	
% of population:	**Gravesend:**		
0-4 yrs		4.7%	
5-14yrs		15.9%	
15-24yrs		10.1%	
25-54yrs		41.3%	
55-64yrs		14.5%	
65yrs and over		12.7%	
% of population:	**North Star:**		
0-4 yrs		9.6%	
5-14yrs		19.1%	
15-24yrs		10.3%	
25-54yrs		41.2%	
55-64yrs		11.9%	
65yrs and over		7.5%	
% of population:	**Gwydir Shire (Bingara + Yallaroi)**		
0-4 yrs	6.5%	5.9%	
5-14yrs	12.5%	13.69%	
15-24yrs	9.1%	8.8%	
25-54yrs	35.2%	35.8%	
55-64yrs	14%	15.29%	
65yrs and over	22.6%	20.4%	

Demand factor trends and impacts on service delivery are summarised in Table 4.1.

Table 4.1: Demand Factors, Projections and Impact on Services

Demand factor	Present position	Projection	Impact on services
Population	4,965 (2011 Census)	Stable	Minimal Impact
Demographics	22.6 % of population aged over 65	27 % of population aged over 65 in 2030	Increase in demand for paved and smooth footpaths suitable for gophers.
Farm Aggregation	Increase in aggregation of farms.	Aggregation is projected to continue.	Increased production from rural areas generating additional traffic movements
Changing market delivery mechanisms	Increase in on-farm storage and the use of 'just-in-time' delivery contracts	Increased on-farm selling and on-farm storage.	Increased necessity for all-weather access roads to ensure 'just-in-time' delivery of produce.
Vehicle Mass Limits	Restricted access for Higher Mass Limit (HML) and High Productivity Vehicles (HPV)	Increase in demand for HML and HPV routes.	Increased loading on bridges and road pavements with potential halving of pavement life.

4.2 Changes in Technology

Technology changes forecast to affect the delivery of services covered by this plan are detailed in Table 4.2.

Table 4.2: Changes in Technology and Forecast effect on Service Delivery

Technology Change	Effect on Service Delivery
Intelligent Access Program	Increased demand for IAP approved routes
High Productivity Vehicles (HPV's)	Increased use of B-triples and Road Trains. This will require some routes to be upgraded to suit the increased swept paths of HPV's.

4.3 Demand 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 include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for the council to own the assets. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another council area or public toilets provided in commercial premises.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this asset management plan.

Table 4.3: Demand Management Plan Summary

Service Activity	Demand Management Plan
Urban and Rural Roads	Identify and promote major transport routes with road hierarchy matched to service levels.
Rural Unsealed Roads	Develop service levels for patrol grading and resheet cycle based on road hierarchy.
Rural Unformed Roads	Identify surplus unformed roads for possible disposal.

4.4 New Assets for Growth

The new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by Council. As Council has very little in the way of subdivision development, this aspect of the plan is only considered briefly.

Acquiring these new assets will commit council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations and maintenance costs.

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

The operating environment varies throughout the council area with areas of high and low rainfall, good and poor subgrades and pavement materials. Road traffic types vary from heavy vehicles serving the forestry industry in the south to light vehicle use in urban areas.

The age profile of the assets include in this AM Plan is shown in Figure 2.

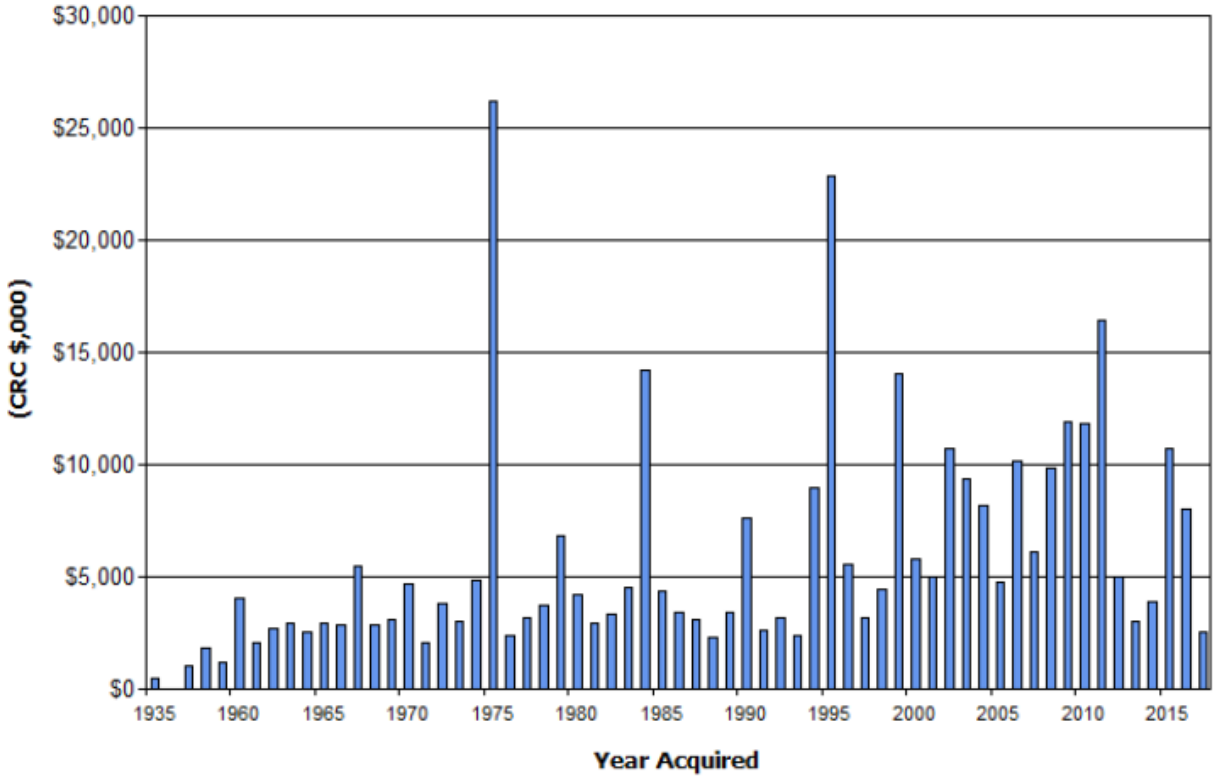


Figure 1: Asset Age Profile

5.1.2 Asset capacity and performance

Council's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Unsealed Road Network	6.9 % of unsealed network is not all weather access
Sealed Road Network	Complaints about the roughness of the road surface and the appearance of potholes after wet weather, resulting in low travel speeds.
Causeways	Roads are impassable due to minor floods (ARI <1 year)

The above service deficiencies were identified from council service requests, correspondence, councillor's questions and meetings and field inspections.

5.1.3 Asset condition

The condition profile of assets included within this AM Plan is shown in Figure 3.

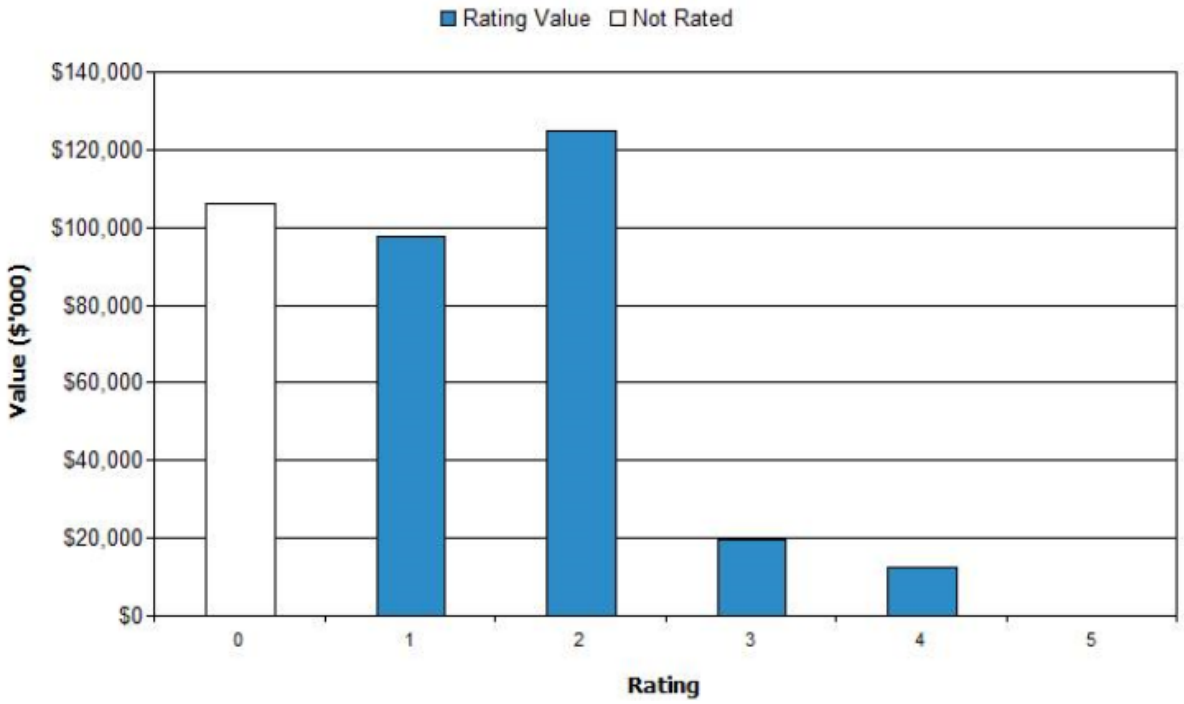


Figure 2: Asset Condition Profile

Condition is measured using a 1 – 5 in accordance with Office of Local Government Integrated Planning and Reporting Guidelines

Table 5.1.3: IP&R Description of Condition

Table 5.1.3: Integrated Planning and Reporting Grading Model

Condition Grading	Description of Condition
1	**Excellent**: No work required (normal maintenance)
2	**Good**: Only minor maintenance work required
3	**Average**: Maintenance work required
4	**Poor**: Renewal required
5	**Very Poor**: Urgent renewal/upgrading required

5.1.4 Asset valuations

The value of assets recorded in the asset register is as at 30th June 2015. Assets covered by this asset management plan are shown below

Current Replacement Cost	$ 360,638,000
Depreciable Amount	$ 254,739,000
Depreciated Replacement Cost	$ 323,228,000
Annual Depreciation Expense	$ 3,450,000

Council's sustainability reporting reports the rate of annual asset consumption and compares this to asset renewal and asset upgrade and expansion.

Asset Consumption [depreciation / depreciable amount]	**1.4 %**
Asset Renewal [planned capital renewal exp. / DA	**2.0 %**
Asset Upgrade [projected capital upgrade exp. / DA	**0.0 %**
Asset Upgrade (inc contributed assets)	**0.0 %**
Assets renewal as % of asset consumption	**145.4%**
Assets being added as % of asset stock	**0.0%**

Council is currently renewing assets from its infrastructure backlog and renewing assets and a rate consistent with their consumption.

To provide services in a financially sustainable manner, Council will need to ensure that it is renewing assets at the rate they are being consumed over the medium-long term and funding the life cycle costs for all new assets and services in its long term financial plan.

5.1.5 Asset service hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for service planning and delivery.

Council's service hierarchy is shown is Table 5.1.5.

Table 5.1.5: Asset Service Hierarchy

Service Hierarchy	Service Level Objective (Aim)
Regional Roads	Provide safe, smooth and all weather access [2 lane width, minimum 80km/h design speed]. Renewal or upgrade standard – 9 metre formation with 8.0 metres seal (where achievable, particularly where the road is likely to be used for High Productivity Vehicles).

	Bitumen resealing on a 15 year cycle. Removal of ramps to be negotiated with adjacent owners.
Arterial Shire Road: Major service link road between centres, or tourism route used for access and transport for through traffic and providing a link for Collector, Local and Minor shire roads. Traffic count greater than 60 vehicles per day.	Bitumen road renewal or upgrade standard – 9 metre formation with 8.0 metres seal (where achievable, particularly where the road is likely to be used for High Productivity Vehicles). Bitumen resealing on a 15 year cycle. Removal of ramps to be negotiated with adjacent owners. Gravel road renewal standard – 7 metre 150mm depth gravel surface. Gravel material to be well graded granular material with 90% passing 37.5 mm sieve and a Plasticity Index (PI) greater than 6 and less than 12. Gravel resheeting on a 12-year cycle, where required. Full maintenance activity including a minimum of 2 x gradings per year (additional grading required if excessive wet weather/flooding), drainage works.
Collector Shire Road: Service link road between centres or route used for non-local access, transport for through traffic and providing a link for Category Local and Minor shire roads. Traffic count between 31 and 60 vehicles per day.	Bitumen road renewal or upgrade standard – 8 metre formation with 7 metres seal (where achievable, particularly where the road is likely to be used for High Productivity Vehicles). Bitumen resealing on an 18 year cycle. Removal of ramps to be negotiated with adjacent owners. Gravel road renewal standard – 6.0 metre 100mm depth gravel surface. Gravel material to be well graded granular material with 90% passing 37.5 mm sieve and a Plasticity Index (PI) greater than 6 and less than 12. Gravel resheeting on a 15-year cycle, where required. Full maintenance activity including a minimum of 2 x gradings per year (additional grading required if excessive wet weather/flooding), drainage works.
Local Shire Road: Local access or non through road used by more than three properties with occupied residences. Traffic count between 16 and 30 vehicles per day or adjoining number of occupied residences greater than 3.	Bitumen road renewal or upgrade standard – 7 metre formation with 6 metre seal (where achievable, particularly where the road is likely to be used for High Productivity Vehicles). Bitumen resealing on a 20 year cycle. Gravel road renewal standard – 5.0 metre 100mm depth gravel surface. Gravel material to be well graded granular material with 90% passing 37.5 mm sieve and a Plasticity Index (PI) greater than 6 and less than 12. Gravel resheeting on an 18-year cycle, where required. Limited maintenance activities restricted to 1 x grade/year (additional grading required if excessive wet weather/flooding) minor drainage works. Gravel resheeting on a less frequent basis.

Minor Shire Road: Minor access no through road providing access to 1, 2 or 3 properties with occupied residences. Maintenance and renewals to not extend past the boundary of the last occupied property. Traffic count less than 16 vehicles per day.	Bitumen road renewal or upgrade standard – 4 metre formation with 3.6 metre seal (where achievable, particularly where the road is likely to be used for High Productivity Vehicles). Bitumen resealing on a 22 year cycle. Gravel road renewal standard – 3.5 metre 75mm depth gravel surface. Gravel material to be well graded granular material with 90% passing 37.5 mm sieve and a Plasticity Index (PI) greater than 6 and less than 12. Gravel resheeting by use of self-help program on a 20 year cycle, where required or requested under the self-help program. Naturally occurring soil road renewal standard – 3.5m pavement shaped and formed from naturally occurring in-situ material. Upgrade to gravel pavement by use of self-help program only following Council approval. Restricted Maintenance Only. 1 grade/2 year (additional grading required if excessive wet weather/flooding) drainage work in table and mitre drain only.

5.2 Risk Management Plan

An assessment of risks associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. 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.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan are summarised in Table 5.2.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Associated Costs
Unsealed Road Network	Reduction in number of roads with all-weather access	H	Develop road hierarchy and match service levels to available funds.	Staff time.
Sealed Road Network	Increase in pavement failures and road roughness due to wearing of sealed surfaces	H	Increase resealing frequency from 25 years to 15 (collector) and 25 to 15 (local) years and develop pavement rehabilitation/renewal plan.	$220,000 increase to $440,000 (inc in renewal plan)

Causeways	Road closures when storms cause water to be too deep to traverse.	H	Review return interval of causeways and frequency of road closures to formulate upgrade program.	$350,000 per year included in upgrade plan
Kerb and Gutter	K&G Fails to contain stormwater, effecting adjacent properties.	H	Identify ineffective K&G and replace.	Approx. $55,000 per year Shire wide.

5.3 Routine Maintenance Plan

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

5.3.1 Maintenance plan

Maintenance includes reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

	Maintenance Expenditure	
Year	Unsealed Roads (Shire Roads ONLY)	Sealed Roads (Regional and Shire Roads)
2011/12	$ 658,850	$ 1,176,970
2012/13	$ 820,860	$ 1,003,208
2013/14	$ 864,162	$ 1,375,579
2014/15	$ 711,635	$ 1,141,213
2015/16	$ 871,147	$ 1,111,636

Current maintenance expenditure levels are considered to be adequate to meet required service levels. Future revision of this asset management plan will include linking required maintenance expenditures with required service levels.

Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement.

5.3.2 Standards and specifications

Maintenance work is carried out in accordance with the following Standards and Specifications.

- AUS-SPEC #4 Road Reserve Maintenance
- NSW Roads and Traffic Authority Road Design Guide
- AUSTROADS Guide to Traffic Engineering Practice
- Australian Standard AS 5100-2004 Bridge Design
- AUSTROADS Pavement Design Guide
- RTA Interim Guide to Signs and Markings 1978
- RTA Traffic Signs Database
- Auspec

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in 2011 dollar values.

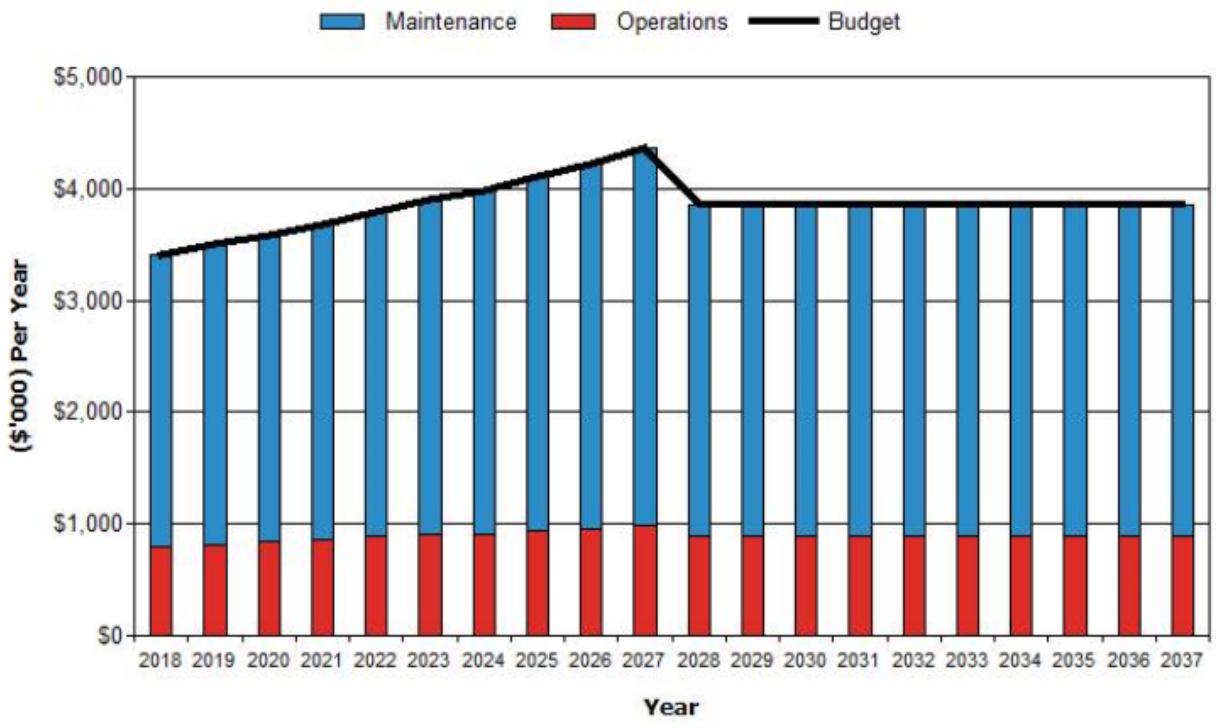


Figure 3: Projected Operations and Maintenance Expenditure

Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded is to be included in the risk assessment process in the infrastructure risk management plan.

Maintenance is funded from the operating budget and grants where available. This is further discussed in Section 6.2.

5.4 Renewal/Replacement Plan

Renewal 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 upgrade/expansion or new works expenditure.

5.4.1 Renewal plan

Assets requiring renewal are identified from one of three methods provided in the 'Expenditure Template".

- Method 1 uses Asset Register data to project the renewal costs for renewal years using acquisition year and useful life, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the *'Expenditure template'*.

Method 1 was used for this asset management plan.

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than replacement cost.

Examples of low cost renewal include recycling of sealed road pavements by cement stabilisation.

5.4.2 Renewal standards

Renewal work is carried out in accordance with the following Standards and Specifications.

- AUS-SPEC #1 Development Design and Construction
- AUS-SPEC #2 Asset Owners' Road Works Specifications
- Gwydir Shire Council Footpaths Construction Specification
- Gwydir Shire Council Bridge Construction Specification
- Australian Road Research Board (ARRB) Sealed Local Roads Manual
- Australian Road Research Board (ARRB) Unsealed Roads Manual
- Austroads Pavement Design Guide
- Roads & Traffic Authority (RTA Road Design Guide

5.4.3 Summary of projected renewal expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Figure 5. Note that all costs are shown in 2011 dollar values.

The projected capital renewal program is shown in Appendix B.

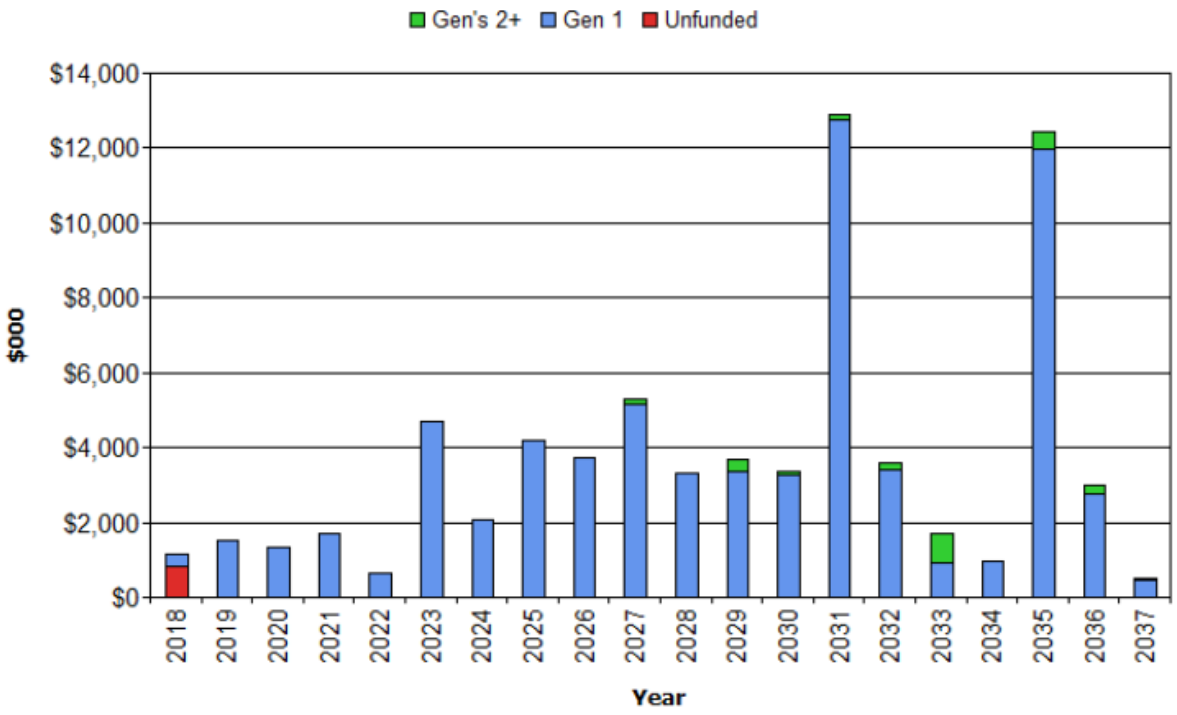


Figure 4.2: Projected Capital Renewal Expenditure

Deferred renewal, i.e. those assets identified for renewal and not scheduled for renewal in capital works programs are to be included in the risk assessment process in the risk management plan.

Renewals are to be funded from capital works programs and grants where available. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

Table 5.5.1a: Town Streets Upgrade/New Assets Priority Ranking Criteria

TOWN STREET ASSESSMENT CRITERIA	Post Development Scale	Points
Supports Freight Connections Details : _____	No ☐	0
	Yes ☐	2
AADT _____(Current) Measured on _____(date) or estimated ☐ ☐(Details of location and duration of counts to be attached to submission).	< 50 ☐	0
	50 to < 100 ☐	1
	100 to < 250 ☐	2
	250 to < 500 ☐	3
	500 to < 1000 ☐	4
	1000 to 1500 ☐	5
	> 1500 ☐	6
Projected AADT (Post Development) _____		
%Heavy Vehicles _____(Current) **Measured on** _____(date) **or estimated** ☐	< 10% ☐	1
	10 to < 15% ☐	2
	15 to < 20% ☐	3
	20 to 30% ☐	4
	> 30% ☐	5
Projected %HV (Post Development) _____ (as a percentage of the projected AADT)	< 10% ☐	1
	10 to < 15% ☐	2
	15 to < 20% ☐	3
	20 to 30% ☐	4
	> 30% ☐	5
B-double Usage Will this proposal open the route, or extend the length accessible, to B-double	No ☐	0
	Yes ☐	1
Current 85% Speed _____km/h	No Deficiency ☐	0
	5 to 10km/h ☐	1
Projected Decrease in 85%ile speed >>>	10 to 15km/h ☐	2
	> 20km/h ☐	3
Current Sealed Lane Widths _____m.	No Deficiency ☐	0
	< 0.5m ☐	1
Projected Sealed Lane Width Increase >>>	0.5 to 1.0m ☐	2
	> 1.0m ☐	3
Roughness Counts (Average) Measured on _____(date) or estimated ☐ ☐(Details of location and duration of counts to be attached to submission).	No Deficiency ☐	0
	111 < 130 ☐	2
	131 to 150 ☐	4
	151 to 170 ☐	6
	171 to 180 ☐	8
	> 181 ☐	10
Accident History Total Accidents Recorded in the last ten years _____ ☐(Details of location and severity to be attached to submission. Accident history must be confined to the length being considered for treatment).	No Accidents ☐	0
	2 to 3 ☐	2
	3 to 4 ☐	4
	4 to 10 ☐	6
	> 10 ☐	10

Other factors that should be considered :

Table 5.5.1c: Rural Road Upgrade/New Assets Priority Ranking Criteria

RURAL ROAD ASSESSMENT CRITERIA

	Post Development Scale	Points
Supports Inter-Council Freight Connections Details : _____	**No** ☐	**0**
	Yes ☐	**2**
AADT _____(Current) Measured on _____(date) or estimated ☐ ☐(Details of location and duration of counts to be attached to submission).	< 50 ☐	**0**
	50 to < 100 ☐	**1**
	100 to < 250 ☐	**2**
	250 to < 500 ☐	**3**
	500 to < 1000 ☐	**4**
	1000 to 1500 ☐	**5**
	> 1500 ☐	**6**
Projected AADT (Post Development) _____		
%Heavy Vehicles _____(Current) **Measured on** _____(date) or estimated ☐	< 10% ☐	**1**
	10 to < 15% ☐	**2**
	15 to < 20% ☐	**3**
	20 to 30% ☐	**4**
	> 30% ☐	**5**
Projected %HV (Post Development) _____ (as a percentage of the projected AADT)	< 10% ☐	**1**
	10 to < 15% ☐	**2**
	15 to < 20% ☐	**3**
	20 to 30% ☐	**4**
	> 30% ☐	**5**
Road Train or B-double Usage Will this proposal open the route, or extend the length accessible, to B-double or Road	No ☐	**0**
	Yes ☐	**1**
Current Advisory Speed _____km/h Projected Increase in Advisory Speed	No Deficiency ☐	**0**
	10 to 20km/h ☐	**1**
	20 to 30km/h ☐	**2**
	> 30km/h ☐	**3**
Current Sealed Lane Widths _____m Projected Sealed Lane Width Increase	No Deficiency ☐	**0**
	< 0.5m ☐	**1**
	0.5 to 1.0m ☐	**2**
	> 1.0m ☐	**3**
Roughness Counts (Average) Measured on _____(date) or estimated ☐ ☐(Details of location and duration of counts to be attached to submission).	No Deficiency ☐	**0**
	111 < 130 ☐	**2**
	131 to 150 ☐	**4**
	151 to 170 ☐	**6**
	171 to 180 ☐	**8**
	> 181 ☐	**10**
Accident History Total Accidents Recorded in the last ten years _____ ☐(Details of location and severity to be attached to submission. Accident history must be confined to the length being considered for treatment).	No Accidents ☐	**0**
	2 to 3 ☐	**2**
	3 to 4 ☐	**4**
	4 to 10 ☐	**6**
	> 10 ☐	**10**

Other factors that should be considered :

5.5.2 Standards and specifications

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.5.3 Summary of projected upgrade/new assets expenditure

The projected upgrade/new capital works program is shown in Appendix C. All costs are shown in current 2015 dollar values.

New assets and services are to be funded from capital works program and grants where available. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any.

Where cash flow projections from asset disposals are not available, these will be developed in future revisions of this asset management plan.

Table 5.6: Assets identified for Disposal

Asset	Reason for Disposal	Timing	Net Disposal Expenditure (Expend +ve, Revenue –ve)	Operations & Maintenance Annual Savings
Surplus rural unformed roads	Surplus to requirements	2016	$10,000	$2,000

6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset 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.

6.1 Financial Statements and Projections

The financial projections are shown in Figure 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets), net disposal expenditure and estimated budget funding.

Note that all costs are shown in 2015 dollar values.

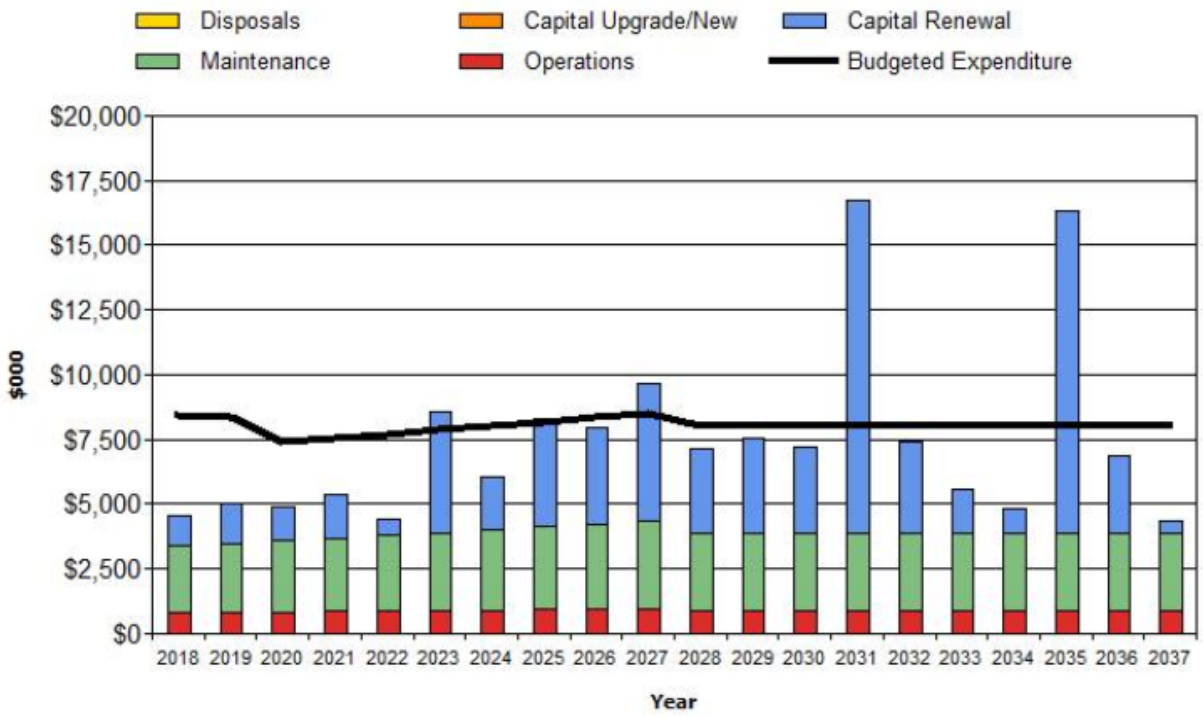


Figure 5: Projected Operating and Capital Expenditure and Budget

6.1.1 Financial sustainability in service delivery

There are three key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Gwydir SC - Table 6.1 Sustainability of Service Delivery for (Transport)

Transport_S1_V1	
Asset Renewal Funding Ratio	
Asset Renewal Funding Ratio	**169%**
Long Term - Life Cycle Costs	
Life Cycle Cost [average 10 years projected ops, maint exp and deprn.]	**$7,304**
Life Cycle Exp [average 10 years LTFP budget ops, maint & capital renewal exp]	**$8,048**
Life Cycle Gap [life cycle expenditure – life cycle cost (-ve = gap)]	**$744**
Life Cycle Indicator [life cycle expenditure / life cycle cost]	**110%**
Medium Term - 10 year financial planning period	
10yr Ops, Maint & Renewal Projected Expenditure	**$6,492**
10yr Ops, Maint & Renewal LTFP Budget Exp	**$8,048**
10 year financing shortfall [10yr proj exp - LTFP Budget exp]	**$1,556**
10 year financing indicator [LTFP Budget exp / 10yr proj exp]	**124%**
Medium Term – 5 year financial planning period	
5yr Ops, Maint & Renewal Projected Expenditure	**$4,862**
5yr Ops, Maint & Renewal LTFP Budget Exp	**$7,912**
5 year financing shortfall [5yr proj exp - LTFP Budget exp]	**$3,049**
5 year financing indicator [LTFP Budget exp /5yr proj exp]	**163%**

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is **$7,304,000** per year (operations and maintenance expenditure plus depreciation expense in year 1).

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes operations, maintenance and capital renewal expenditure in year 1. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan is **$8,048,000** (operations and maintenance expenditure plus budgeted capital renewal expenditure in year 1).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap.

The life cycle gap (surplus) for services covered by this asset management plan based on year one budgets is **$ 744,000** per year. This surplus is being allocated to renewing assets current in Council's backlog. By virtue of this, backlog is expected to be eliminated within the ten year programming period.

Life cycle expenditure is **110%** of life cycle costs giving a life cycle sustainability index of **1.1**.

The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term. If the life cycle expenditure is less than that life cycle cost, it is most likely that outlays will need to be increased or cuts in services made in the future.

Knowing the extent and timing of any required increase in outlays and the service consequences if funding is not available will assist organisations in providing services to their communities in a financially sustainable manner. This is the purpose of the asset management plans and long term financial plan.

Medium term – 10 year financial planning period

This asset 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. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is **$6,492,000** per year.

Estimated (budget) operations, maintenance and capital renewal funding is **$8,048,000** per year giving a 10 year funding surplus of **$ 1,556,000** per year. This indicates that Council has **124%** of the projected expenditures needed to provide the services documented in the asset management plan giving a 10 year sustainability indicator of **1.24**.

Medium Term – 5 year financial planning period

The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is **$4,862,000** per year.

Estimated (budget) operations, maintenance and capital renewal funding is **$7,912,000** per year giving a 5 year funding surplus of **$3,049,000**. This is **163%** of projected expenditures giving a 5 year sustainability indicator of **1.63**.

Financial Sustainability Indicators

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and funding to achieve a financial

sustainability indicator of 1.0 for the first years of the asset management plan and ideally over the 10 year life of the AM Plan.

Figure 8 shows the projected asset renewals in the 10 year planning period from Appendix B. The projected asset renewals are compared to budgeted renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period in Figure 8.

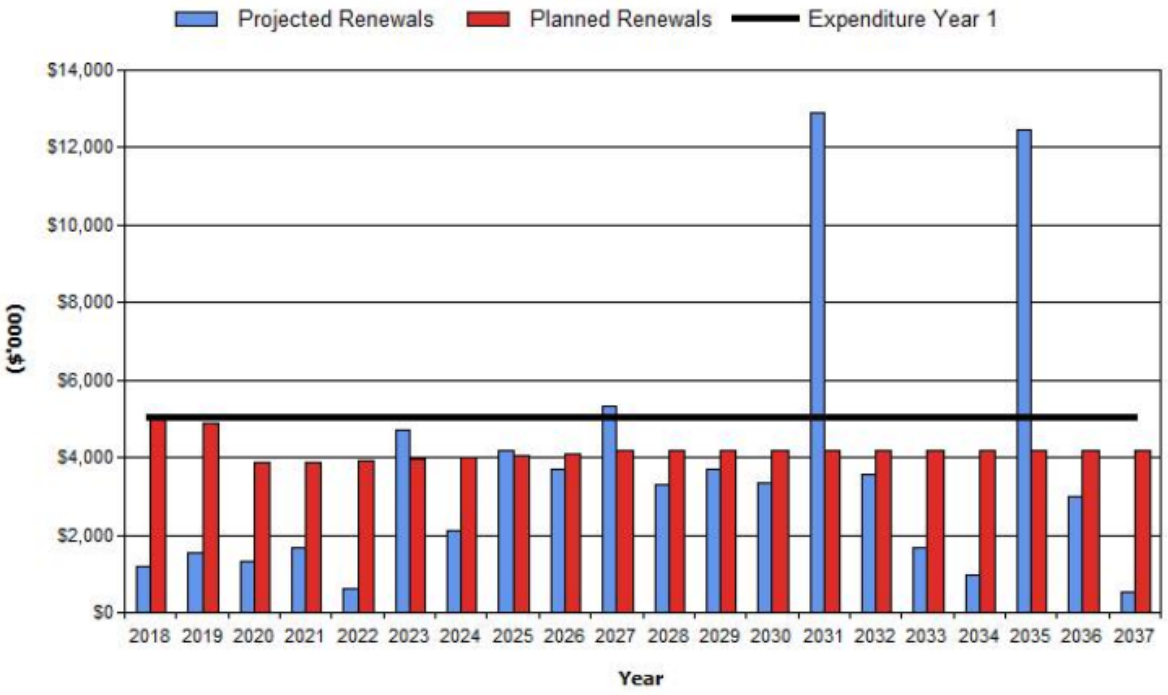


Figure 6: Projected and Budgeted Renewal Expenditure

Table 6.1.1 shows the shortfall between projected and budgeted renewals

Table 6.1.1: Projected and Budgeted Renewals and Expenditure Shortfall

Year End June 30	Projected Renewals ($'000)	LTFP Renewal Budget ($'000)	Renewal Financing Shortfall (- gap, + surplus) ($'000)	Cumulative Shortfall (- gap, + surplus) ($'000)
2018	$1,171	$5,018	$3,847	$3,847
2019	$1,526	$4,895	$3,369	$7,215
2020	$1,342	$3,861	$2,519	$9,734
2021	$1,686	$3,896	$2,210	$11,944
2022	$630	$3,932	$3,302	$15,246
2023	$4,704	$3,976	$-728	$14,518
2024	$2,094	$4,021	$1,927	$16,446
2025	$4,201	$4,066	$-135	$16,311
2026	$3,710	$4,113	$403	$16,714
2027	$5,313	$4,161	$-1,152	$15,562
2028	$3,298	$4,194	$896	$16,458
2029	$3,702	$4,194	$491	$16,950
2030	$3,349	$4,194	$845	$17,794
2031	$12,914	$4,194	$-8,720	$9,075
2032	$3,570	$4,194	$623	$9,698
2033	$1,693	$4,194	$2,501	$12,199
2034	$967	$4,194	$3,227	$15,426
2035	$12,441	$4,194	$-8,247	$7,179
2036	$2,984	$4,194	$1,210	$8,389
2037	$518	$4,194	$3,676	$12,065

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue.

A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required to manage required service levels and funding to eliminate any funding gap.

We will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.1.2 Expenditure projections for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in current (non-inflated) values. Disposals are shown as net expenditures (revenues are negative).

Table 6.1.2: Expenditure Projections for Long Term Financial Plan ($000)

TRANSPORT - 2018-2027__

Year	Operations	Maintenance	Projected Capital Renewal	Capital Upgrade/New	Disposals
2018	$795	$2,617	$1,171	$0	$0
2019	$815	$2,681	$1,526	$0	$0
2020	$836	$2,748	$1,342	$0	$0
2021	$859	$2,821	$1,686	$0	$0
2022	$884	$2,900	$630	$0	$0
2023	$913	$2,986	$4,704	$0	$0
2024	$909	$3,079	$2,094	$0	$0
2025	$941	$3,175	$4,201	$0	$0
2026	$949	$3,274	$3,710	$0	$0
2027	$981	$3,376	$5,313	$0	$0
2028	$888	$2,966	$3,298	$0	$0
2029	$888	$2,966	$3,702	$0	$0
2030	$888	$2,966	$3,349	$0	$0
2031	$888	$2,966	$12,914	$0	$0
2032	$888	$2,966	$3,570	$0	$0
2033	$888	$2,966	$1,693	$0	$0
2034	$888	$2,966	$967	$0	$0
2035	$888	$2,966	$12,441	$0	$0
2036	$888	$2,966	$2,984	$0	$0
2037	$888	$2,966	$518	$0	$0

All dollar values are in ($'000)'s

Note: All projected expenditures are in 2016 values

6.2 Funding Strategy

Projected expenditure identified in Section 6.1 is to be funded from future operating and capital budgets. The funding strategy is detailed in the organisation's 10 year long term financial plan.

6.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in 2015 dollar values.

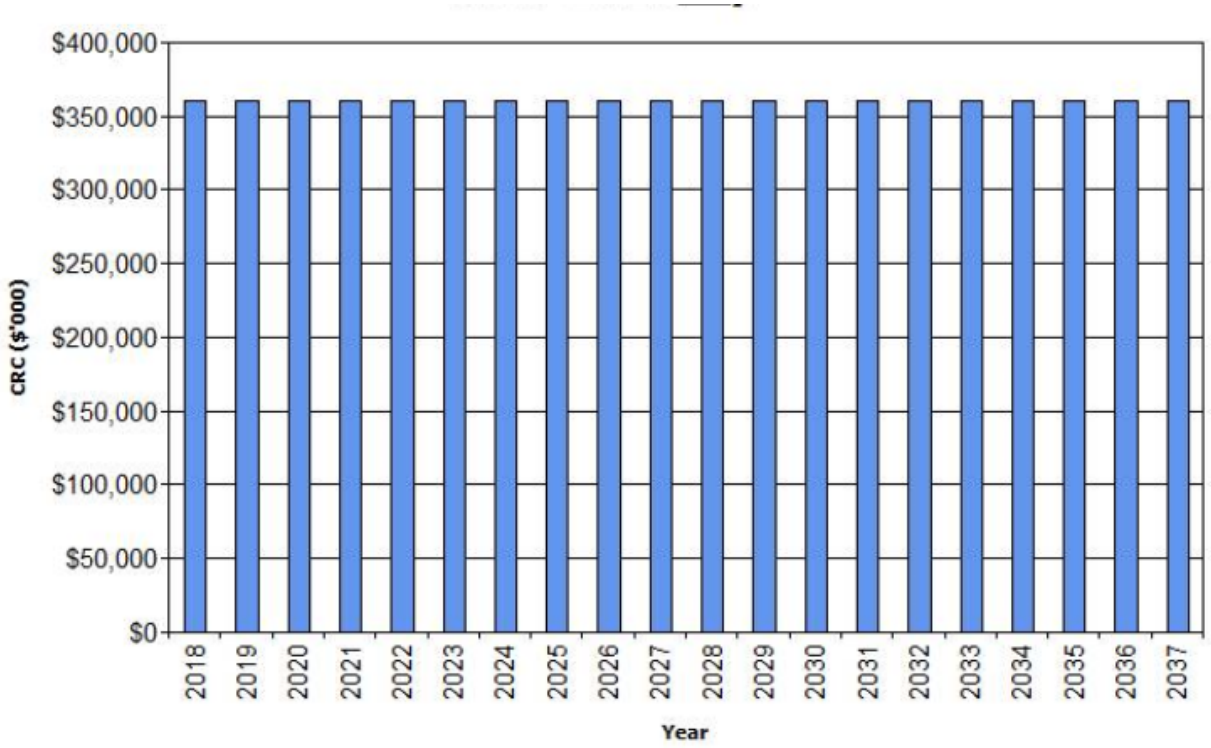


Figure 7: Projected Asset Values

Depreciation expense values are forecast in line with asset values as shown in Figure 10.

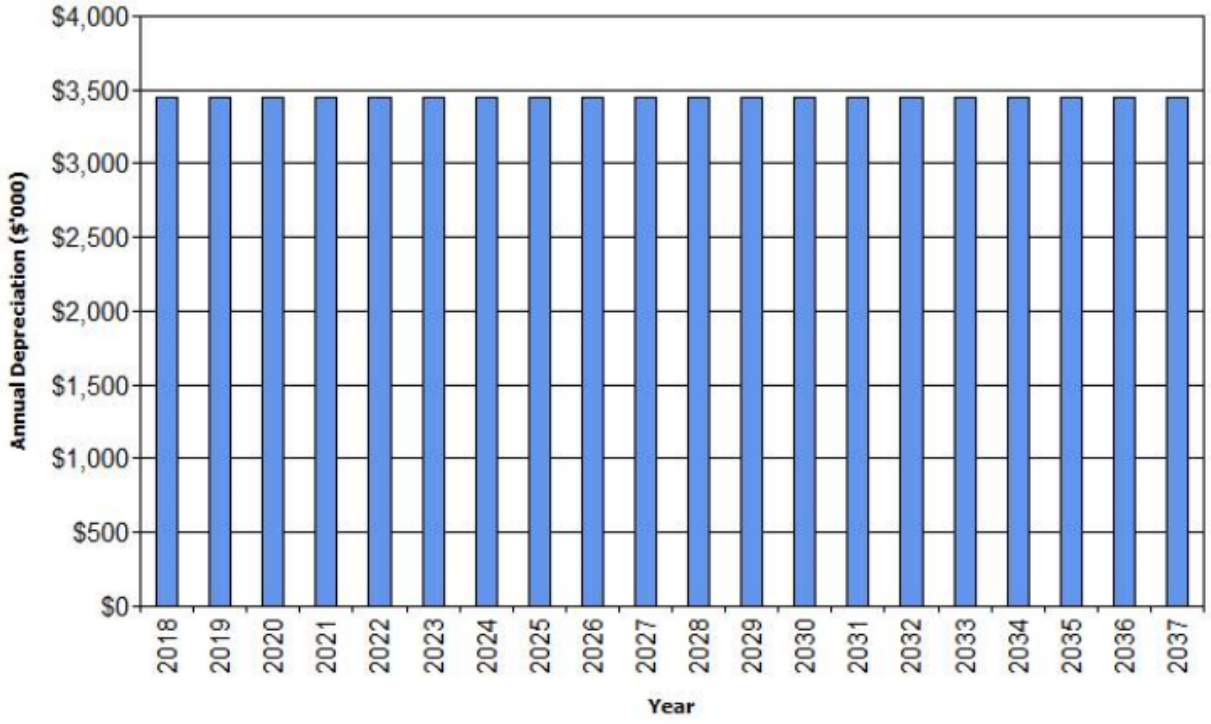


Figure 8: Projected Depreciation Expense

The depreciated replacement cost (current replacement cost less accumulated depreciation) will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11. The effect of contributed and new assets on the depreciated replacement cost is shown in the light colour bar.

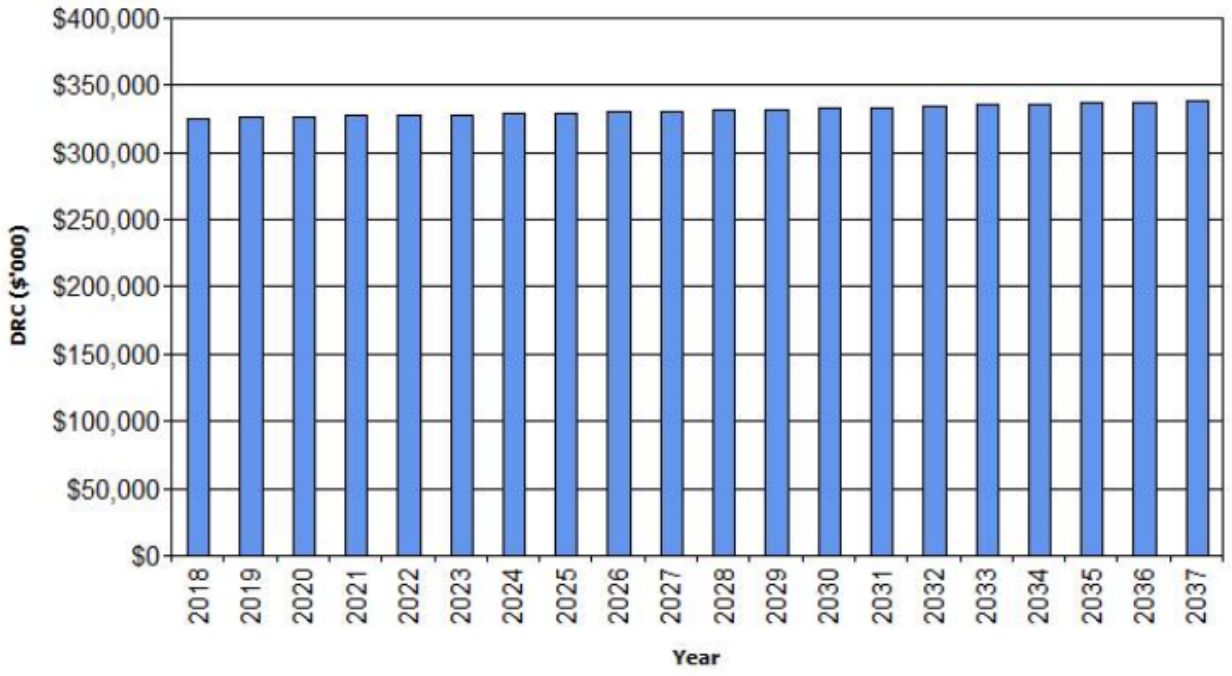


Figure 9: Projected Depreciated Replacement Cost

6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are:

- 2016 revaluation figures were adopted;
- Projections are based on local operating knowledge only;
- Expenditure projections are based on 2017 LTFP.

7. ASSET MANAGEMENT PRACTICES

7.1 Accounting/Financial Systems

7.1.1 Accounting and financial systems

Gwydir Shire Council uses the 'Authority' financial management system by Civica. This system tracks all financial transactions relating to Council's assets.

7.1.2 Accountabilities for financial systems

General Manager	The general manager is generally responsible for the efficient and effective operation of the council's organisation and for ensuring the implementation, without undue delay, of decisions of the council. • To manage the council on a day-to-day basis and to direct staff; • To exercise such of the functions of the council as are delegated by the council to the general manager;
Director Technical Services	The Director of Technical Services is responsible for the financial management of the operation, maintenance, renewal and upgrade of :- • Roads/Streets; • Bridges/Culverts; • Traffic; • Subdivisions; • Drainage; • Bush Fire Control; • Corporate Asset Management Systems • Aerodromes; and • SES Emergency Services.
Chief Financial Officer	The role of Corporate Services is to provide a range of services to internal and external customers and stakeholders, including: • Accounting services • Customer support and administration services • Information Technology services • Rates collection The role of the Director Corporate Services is to both respond to and participate in the formulation, review and reporting on the corporate role and function of Council. Corporate Services provides the financial, administrative and information technology to enable Council to provide high quality services to the community. The Services' mission is to provide a consistently high standard of Customer Service for the community and Council's operations.

Design & Assets Manager	• Oversee the creation and maintenance of Council's asset inventories • Develop and maintain Council's asset management information system • Develop and update Councils asset management plans • Assist with the implementation of Council's asset management improvement strategy.

7.1.3 Accounting standards and regulations

- The Local Government Act (1993);
- The Local Government Code of Accounting Practice and Financial Reporting;
- AASB 116 / IAS 16 Property, Plant & Equipment
- AASB 136 / IAS 36 Impairment of Assets
- AASB 5 / IFRS 5 Non-Current Assets held for Sale & Discontinued Operations
- AASB 137 / IAS 37 Provisions, Contingent Assets & Contingent Liabilities
- AASB 1049 Whole of Government and General Government Sector Financial Reporting
- AASB 1051 Land Under Roads

7.1.4 Capital/maintenance threshold

There is a $1,000 threshold between capitalisation and expense on individual items. There is no fixed dollar value threshold between capital and maintenance. It will depend on the type of activity as maintenance will maximise the full service potential and capital will renew or extend the service potential.

The Transport Asset Management Plan will assist in the development of Work Orders to enhance feedback into the plan.

7.1.5 Required changes to accounting financial systems arising from this AM Plan

As of November 2011, this plan is in 'First Draft' format. Review and updating of the asset inventory and asset condition data is required to further improve this asset management plan therefore improving the decision making ability of Council with respect to recommendations made by this plan.

7.2 Asset Management Systems

7.2.1 Asset management system

Council utilises the AIM module of 'Authority' as the Corporate Asset Management System.

7.2.2 Asset registers

Council's corporate asset register is integral with the AIM module in 'Authority' as described above.

7.2.3 Linkage from asset management to financial system

Because AIM is a module of 'Authority', the link between asset management and the financial system is a direct 'live' link.

7.2.4 Accountabilities for asset management system and data

Council	Policy and assessment of community requirements and expectations
General Manager	Overall stewardship of AMP
Director Technical Services and Design & Asset Manager	Establishment and maintenance of Asset Register
Director Corporate Services	Financial management plan

7.2.5 Required changes to asset management system arising from this AM Plan

The Transport Asset Management Plan will assist changes to systems to improve maintenance management systems, enhance job planning and strategic planning as well as developing a closer reconciliation between the financial a technical asset registers.

7.3 Information Flow Requirements and Processes

The key information flows *into* this asset management plan are:

- Council strategic and operational plans,
- Service requests from the community,
- Network assets information,
- The unit rates for categories of work/materials,
- Current levels of service, expenditures, service deficiencies and service risks,
- Projections of various factors affecting future demand for services and new assets acquired by Council,
- Future capital works programs,
- Financial asset values.

The key information flows *from* this asset management plan are:

- The projected Works Program and trends,
- The resulting budget and long term financial plan expenditure projections,
- Financial sustainability indicators.

These will impact the Long Term Financial Plan, Strategic Longer-Term Plan, annual budget and departmental business plans and budgets.

7.4 Standards and Guidelines

Standards, guidelines and policy documents referenced in this asset management plan are:

- International Infrastructure Management Manual 2006
- Practice Note 1: Footpaths and Cycleways
- Practice Note 2: Kerb & Channel (Gutter)
- Practice Note 4 - Asset Management for Small, Rural and Remote Communities
- Practice Note 5: Stormwater Drainage
- Gwydir Shire Council policy – ‘Asset Management’
- Gwydir Shire Council Asset Management Strategy

8. PLAN IMPROVEMENT AND MONITORING

8.1 Performance Measures

The effectiveness of the asset management plan can be measured in the following ways:

- The degree to which the required cash flows identified in this asset management plan are incorporated into the organisation's long term financial plan and Community/Strategic Planning processes and documents,
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan;

8.2 Improvement Plan

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

Table 8.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Review of asset registers and condition assessments	DTS/DAM	Staff and time allocation.	Every two years
2	Review of road asset valuation in accordance with 'fair value' guidelines	DTS/ DAM	Staff and time allocation	As required by auditors
3	Review asset values and depreciation	DAM/ DCS	Staff and time allocation	Every two years
4	Review service levels to address funding gap.	Council		Every two years
5	Review renewal/ upgrade expenditure balance to maintain asset standard and address economic development requirements	Council		Every two years

8.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget preparation and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of the budget decision process.

The Plan has a life of 4 years and is due for revision and updating within 12 months of each Council election.

The review should include:

- Review of Service Levels and Resource Levels
- Amendments to the Asset Management Plan to accommodate changes in service levels and resource allocation.

9. REFERENCES

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IPWEA, 2011, *Asset Management for Small, Rural or Remote Communities* Practice Note, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AM4SRRC.

10. APPENDICES

Appendix A Maintenance Response Levels of Service

Appendix B Projected 10 year Capital Renewal Works Program

Appendix C Planned Upgrade/Exp/New 10 year Capital Works Program A

Appendix D Abbreviations

Appendix E Glossary

Appendix F – Notes on Data Management

10.1 Appendix A Maintenance Response Levels of Service

Maintenance Response Levels of Service

Unsealed Roads and Shoulders		Arterial Primary Through	Collector Secondary Through	Local Primary Access	Minor Secondary Access	
Intervention Level		Response Time for Routine Maintenance (Days)				Maintenance
Potholes	> 450mm diameter and 75mm deep. Not more than 3 potholes per 75sq.m in one cluster.	45	90	183	365	Grade. Compact, if required. Gravel patch if required.
Corrugations	> 50m length effected, full road width.	45	90	183	365	Grade. Compact, if required. Gravel patch with course material, if required.
Rutting	> 75mm deep ruts/ depression under a 2m straight edge. Not more than 50% in 100 square metres of road surface.	45	90	183	365	Grade. Compact, if required. Gravel patch if required.
Surface Scour	> 75mm deep scour under a 2m straight edge. Not more than 50% in 100 square metres of road surface.	21	45	90	365	Grade. Compact, if required. Gravel patch if required.
Cross-fall	Cross-fall not to be less than 1 in 20 on any 50m length. Surface to be free draining.	45	90	183	365	Grade. Compact, if required. Gravel patch if required.
Loose Material	No build up of loose material greater than 60mm in depth in travel lanes or at intersections.	45	90	183	365	Grade. Compact, if required. Gravel patch with course material, if required.

Maintenance Response Levels of Service

Sealed Roads and Shoulders		Arterial Primary Through	Collector Secondary Through	Local Primary Access	Minor Secondary Access	
Intervention Level		**Response Time for Routine Maintenance (Days)**				**Maintenance**
Potholes	> 450mm diameter and 75mm deep. Not more than 3 potholes per 75sq.m in one cluster.	14	14	28	28	Bitumen patch to repair potholes.
Edge Breaks	> 50m length effected, with drop-off exceeding 75mm	14	14	28	28	Bitumen patch to repair edge break.
Rutting	> 75mm deep ruts/ depression under a 2m straight edge. Not more than 50% in 100 square metres of road surface.	45	90	183	365	Heavy Patch to rectify rutting. Stabilise heavy patch, if required
Cracking	Cracks in bitumen exposing pavement to moisture ingress, wider than 3mm and longer than 2m.	45	90	90	365	Bitumen patch to seal cracks. Program reseal if cracking is extensive.
Stripping	Seal stripping with >30% loss of stone.	90	183	183	365	Program reseal.
Bleeding	Bleeding area > 30 sq.m or > 30m along wheel tracks.	7	14	28	56	Spread sand to soak up excess bitumen and prevent bitumen delaminating.

Maintenance Response Levels of Service

Road Marking, Signs and Furniture		Arterial Primary Through	Collector Secondary Through	Local Primary Access	Minor Secondary Access	
	Intervention Level	**Response Time for Routine Maintenance (Days)**				**Maintenance**
Painted Lines	50% of line marking visible in any 500m lane length	183	183	365	365	Program line marking.
Raised Pavement Markers	> 3 consecutive markers missing or damaged.	30	60	120	180	Replace RPM's.
Road Signs	Sign face missing/ damaged/ illegible	45	90	183	365	Replace sign face, repair or clean as required.
Guide Posts	3 consecutive posts missing on straights, 2 consecutive posts missing on curves, post missing from culvert headwall.	30	60	120	180	Replace missing and damaged guideposts.
Guardrail	Damaged guardrail.	7	14	28	56	Repair guardrail.
Reflectors	Reflectors correctly attached, clean and clearly visible at night.	30	60	120	180	Replace/ reattach reflectors.

Maintenance Response Levels of Service

Drainage, Vegetation, Other		Arterial Primary Through	Collector Secondary Through	Local Primary Access	Minor Secondary Access	
	Intervention Level	**Response Time for Routine Maintenance (Days)**				**Maintenance**
Table Drains	50% reduction in drainage capacity. Scour depth >450mm	90	120	183	365	Program line marking.
Culverts	At least 75% of the culvert waterway to be free to carry water. Entry and exit points to be free of debris and silt build-up.	183	183	365	365	Clear waterway and remove debris.
Trees	Fallen branches and bushes causing an obstruction or hazard.	1	1	1	1	Remove tree limb/ bush from trafficable area.
Vegetation	Vegetation that interferes with safe sight distances.	30	30	60	90	Program slashing.
Oil on road	Act on report or first sighting.	1	1	1	1	Spread sand over effected area and/ or apply detergent.
Water over road	Act on report or first sighting.	1	1	1	1	Place appropriate signage.

10.2 Appendix B Projected 10 year Capital Renewal Works Program

Sealed Rural Roads Rehabilitation Priority

Length of Rehabilitation Required (km)

No.	SHIRE ROAD	CLASS	Seal/ Gravel	REHAB LENGTH km	% of Total Length of Road
1	Copeton Dam Road	B	I15	3.55	7%
16	Trevallyn Road	B	D19	1.70	7%
22	Upper Bingara Road	B	F16	1.56	6%
15	Gulf Creek Road	B	F18	0.90	5%
38	Adams Scrub Road	D	G12	0.68	3%
19	Whitlow Road	B	F14	0.32	1%
102	Noumea Road	D	F17	0.30	3%

10.3 Appendix C Planned Upgrade/Exp/New 10 year Capital Works Program

Priority	Causeway North	Location	Size
1	SR33 Forest Creek Rd	9km west of North Star Road	30m long x 8m wide
2	SR6 Getta Getta Rd	1km from end of bitumen	30m long x 8m wide
3	SR6 Getta Getta Rd	2km from end of bitumen	30m long x 8m wide
4	SR33 Forest Creek Rd	12km west of North Star Road	30m long x 8m wide
5	SR34 River Rd	6km east of MPSC boundary	15m long x 8m wide
6	SR47 Glenesk Rd	1km west of ISC boundary	15m long x 8m wide
7	SR47 Glenesk Rd	3km west of ISC boundary	15m long x 8m wide
8	SR34 River Rd	7km east of MPSC boundary	25m long x 8m wide
9	SR10 Yallaroi Rd	10km west of Warialda Road	30m long x 8m wide
10	SR61 Peates Rd	7km north of Getta Getta Rd	30m long x 8m wide
11	SR10 Yallaroi Rd	5km west of Warialda Road	30m long x 8m wide
12	SR61 Peates Rd	2.5km south of Bruxner Way	30m long x 8m wide
13	SR6 Getta Getta Rd	5.5km from end of bitumen	30m long x 8m wide
14	SR82 Kirewa Rd	1km south of Mungle Road	30m long x 8m wide
15	SR80 Ottley Rd	1km East of Warialda Rd	20m long x 8m wide
16	SR13 Oregon Rd	8.5km north west of Kurrajong Hills Rd	20m long x 8m wide
17	SR65 Munsies Rd	6km south of Yallaroi Rd	20m long x 8m wide
18	SR80 Ottley Rd	10km East of Warialda Rd	20m long x 8m wide
19	SR269 Kemps Rd	500m south of Ottley Rd	20m long x 8m wide

Priority	Causeway South	Location	Size
1	SR15 Gulf Crk Rd	Oaky Crk	12m long x 8m wide
2	SR23 Wearnes Rd	Beehive Crk	12m long x 8m wide
3	SR50 Thornleigh Rd	McIntyre Crk	60m long x 5.6m wide extension
4	SR17 Back Crk Rd	Near Bexley	12m long x 8m wide
5	SR23 Wearnes Rd	McHughs Crk	12m long x 8m wide
6	SR23 Wearnes Rd	McHughs Crk	12m long x 8m wide
7	SR51 Towarra Rd	Horsearm Crk	12m long x 8m wide
8	SR60 Pound Crk Rd	0	12m long x 8m wide
9	SR22 Upper Bingara Road	1.2km from MR63	12m long x 8m wide
10	SR22 Upper Bingara Road	2.0km from MR63	12m long x 8m wide

Priority	Bridges/ Box Culvert North	Location	
2	RR7705North Star Rd	Mobbinbry Sth	
3	RR63 Warialda Rd	Boundary Gully	
4	RR63 Warialda Rd	Kia Ora	

Priority	Bridges/ Box Culvert South	Location	
1	MR133	Back Crk	
2	MR133	Hell Hole Crk	
3	MR133	Rocky Crk	(Glencoe)
4	MR133	Rocky Crk	Wahroonga

Priority	Road Construction North	From - To	Construction Length
3	SR10 Yallaroi Rd	Western End	1500m
4	SR36 Baroma Rd	Eastern End	1500m
5	SR6 Getta Getta Rd	Western End	1500m
6	SR10 Yallaroi Rd	Western End	1500m
7	SR36 Baroma Rd	Eastern End	1500m
8	SR6 Getta Getta Rd	Western End	1500m
9	SR10 Yallaroi Rd	Western End	1500m

Priority	Road Construction South	From - To	Construction Length
1	SR11 Horton Rd	West from the Village	1500m
2	SR23 Wearnes Rd	West from SR2	1500m
3	SR22 Upper Bingara Rd	South from Village	1500m
4	SR11 Horton Rd	West from the Village	1500m
5	SR23 Wearnes Rd	West from SR2	1500m
6	SR22 Upper Bingara Rd	South from Village	1500m
7	SR11 Horton Rd	West from the Village	1500m
8	SR23 Wearnes Rd	West from SR2	1500m

10.4 Appendix D Abbreviations

AAAC	Average annual asset consumption
AMP	Asset management plan
ARI	Average recurrence interval
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SS	Suspended solids
Vph	Vehicles per hour

10.5 Appendix E Glossary

Annual service cost (ASC)

1) Reporting actual cost

The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.

2) For investment analysis and budgeting

An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

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 so as to determine the need for some preventative or remedial action.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided**.**

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, e.g. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not

exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, e.g. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, e.g. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset definition.

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital.

Fair value

The amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties, in an arm's length transaction.

Funding gap

A funding gap exists whenever an entity has insufficient capacity to fund asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current funding gap means service levels have already or are currently falling. A projected funding gap if not addressed will result in a future diminution of existing service levels**.**

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, e.g. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. 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 separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

(a) use in the production or supply of goods or services or for administrative purposes; or

(b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual operations, maintenance and asset consumption expense, represented by depreciation expense. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the actual or planned annual operations, maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of life cycle sustainability.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to its original condition, including regular ongoing day-to-day work necessary to keep assets operating, e.g. road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**

  Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

- **Reactive maintenance**

  Unplanned repair work that is carried out in response to service requests and management/supervisory directions.

- **Significant maintenance**

  Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

  Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance and renewal gap

Difference between estimated budgets and projected required expenditures for maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Maintenance and renewal sustainability index

Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (e.g. 5, 10 and 15 years).

Maintenance expenditure

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash

inflows after deducting the value of the discounted total cash outflows arising from e.g. the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, e.g. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, e.g. power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

The gross outflow of economic benefits, being cash and non-cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Pavement management system

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption

A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal

A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade

A measure of the rate at which assets are being upgraded and expanded per annum expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, e.g. public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

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.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that are still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum), reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, cycle, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

(a) the period over which an asset is expected to be available for use by an entity, or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, Glossary

10.6 Appendix F – Notes on Data Management

In order to provide the most realistic depiction of the state of Council's transport assets and forecasted renewal, a number of minor changes were made to data held within Council's asset inventory.

Bitumen Seal Construction Date

Following the fair value revaluation of transport assets in 2015, it was discovered that records regarding the date of construction for bitumen seal assets were unavailable. Consequently, asset management staff predicted the construction date based on the condition of the seal. As there are only 5 condition ratings mandated by the Office of Local Government, a limitation of this approach was that the predicted construction date of all bitumen seal fell in one of 5 years. In order to smooth the data and renewal forecasts for the purposes of this asset management plan, these seal assets were given a new construction date within the 5 year timeframe of +-2years from the original assumed construction date.

Bridge Construction Date

Bridge construction date was estimated using the same approach taken for bitumen seal. As a consequence, large spikes in renewal activity are forecast in single years as these bridges fall due for renewal. As these bridge assets have renewal dates well outside the planning period of this plan, no action was taken to smooth this data. Asset management staff will endeavour to find accurate construction dates of Council bridges where possible for future iterations of this plan.

Removal of Condition 5 Culverts

A number of failed culvert assets were removed from the data used to create this plan. These culverts were assessed as failed in 2015 and have not been repaired. As no accelerated failure has been observed on the pavement above these culverts, it was deemed that they did not provide an essential service and therefore renewal was not required.

Removal of Pavement Assets on Naturally Occurring Gravel Roads

Council currently has pavement assets within its inventory for roads which are formed from the naturally occurring subgrade material on which they are constructed (e.g. black soil roads). As these roads are simply shaped up from the insitu material, the liability of rehabilitation of these assets to full 150mm gravel pavement was eliminated by removing the pavement assets from the AMP data

11. Table of Figures