Paths Asset Management Plan 2017-2026

Inverell Shire Council

Document Control

Title: Paths Asset Management Plan 2017-2026

Document Number:

Date	Revision	Author	Reviewer	Approved Date
12/09/2015	Draft Version 0.1	D. Strugnell		
14/10/2015	Draft Version 0.2	D. Strugnell		
30/03/2016	Version 1.0	D. Strugnell	B. McInnes	22/06/2016

This asset management plan was developed by Inverell Shire Council.
For further information please contact Council's Civil and Environmental Services Directorate.

144 Otho Street
PO Box 138
Inverell NSW 2360
DX 6159 Inverell 2360

Tel: (02) 6728 8288
Fax: (02) 6728 8277

Email: council@inverell.nsw.gov.au
Internet: www.inverell.nsw.gov.au

Contents

Figures

Tables

Introduction

Local government assets deliver important community services. Their effective management is crucial to the sustainable delivery of those services to meet community needs and aspirations now and in the future. The aim of this plan is to enhance the sustainable delivery and management of Inverell Shire Council's path assets by encouraging 'whole of life' and 'whole of organisation' approaches and the effective identification and management of the assets. It encourages a long-term view of asset management and requires Council to understand and meet the impacts of social, economic and environmental change in ways that ensure sustainable use of our resources.

This plan is concerned with urban path assets which include the shire's footpaths, grassed verges, bike paths and walking trails in the towns of Inverell, Ashford, Delungra and Gilgai. It does not include other ancillary assets such as seating, garbage bins and landscaping which are covered by the Open Space and Recreation Asset Management Plan.

The total replacement cost of assets covered by this plan is $7.22 million. This is made up of:

- Concrete Paths $3.47 million
- Bitumen Paths $118,000
- Paved Paths $1.97 Million
- Gravel Paths $20,000
- Bridges and Structures $1.64 million

Asset management plans are a vital component in Inverell Shire's strategic planning process. They form the basis of short, medium and long term planning for capital, operations and maintenance budgets, and link to key corporate strategies including the following documents:

- Inverell Shire's Asset Management Policy and Asset Management Strategy
- Inverell Shire's Strategic Long Term Plan and Long Term Financial Plan
- Annual Operational Plan and Budget
- Inverell Shire's Risk Register.

This asset management plan is also informed by a number of other planning documents previously prepared by Council including:

- The Inverell Pedestrian Access and Mobility Plan 2014
- The Inverell Bike Plan 2014
- The Footpath Maintenance Procedure
- Inverell Town Centre Renewal Plan

Asset Management Drivers

Paths facilitate the movement of pedestrians for transport and recreation in urban areas. They provide an important service to many members of the community who rely on them as their primary means of transport.

Inverell Shire Council must exercise its duty to maintain, operate and improve path assets under increasing pressures that include:

- Limited budgets: with competition for funding across a range of services
- Limited resources: both human resources and materials
- Mature networks: which have a significant maintenance demand
- Increased accountability: to customers and funding providers
- Increasing public expectations: the public are increasingly informed and expect a higher level of service form their assets.

In the face of these challenges, Council is responsible for effectively accounting for and managing its assets and having regard

for the long term and cumulative effects of its decisions. This is a core function of local government authorities and is reflected in the Charter in section eight of the Local Government Act. Furthermore, a strong and sustainable local government system requires a robust planning process to ensure that these assets are managed in the most appropriate way on behalf of local communities.

To ensure this is the case NSW Local Government has implemented an Integrated Planning and Reporting Framework. The Integrated Planning and Reporting framework recognises that most communities share similar aspirations: a safe, healthy and pleasant place to live, a sustainable environment, opportunities for social interaction, opportunities for employment, reliable infrastructure, etc. The difference lies in how each community responds to these needs. That is what shapes the character of individual towns and cities. It also recognises that the council plans and policies should not exist in isolation and that they are in fact connected.

This framework allows NSW councils to draw their various plans together, to understand how they interact and to get the maximum leverage from their efforts by planning holistically for the future. The framework is outlined in Figure 1.

Figure 1 : Integrated Planning & Reporting Framework (NSW Division of Local Government, 2013)

Asset management plans form part of Council's Resourcing Strategy that supports the community's Strategic Plan. The Strategic Plan provides a vehicle for the community to express its long term aspirations. However, these aspirations will not be achieved without sufficient resources – time, money, assets and people – to carry them out. The Resourcing Strategy is a critical link when it comes to translating strategic objectives into actions.

The asset management actions necessary to achieve the Strategic Plan Strategies and Delivery Plan Term Achievements relevant to Council's path assets are outlined in Table 1

Using this Plan

The Paths Asset Management Plan 2017-2026 provides core resource information for users. It will be continuously reviewed and updated to improve its quality and to ensure continuing relevance. This document has been written with the intention of being informative and readily understood by persons interested in the actions of Council and particularly in path infrastructure matters. It does not contain detailed technical information but rather seeks to provide an overview of the Council's assets and the directions that must be taken to ensure their sustainability.

This asset management plan is prepared as a 'core' asset management plan in accordance with the International Infrastructure Management Manual 2015. It has been prepared to initially meet minimum legislative and organisational requirements for the sustainable management of path infrastructure and long-term financial planning and reporting. This plan is considered a 'core' plan due to its top-down approach where key analysis has been applied at the 'system' or 'network' level of asset management planning as outlined in Figure 2.

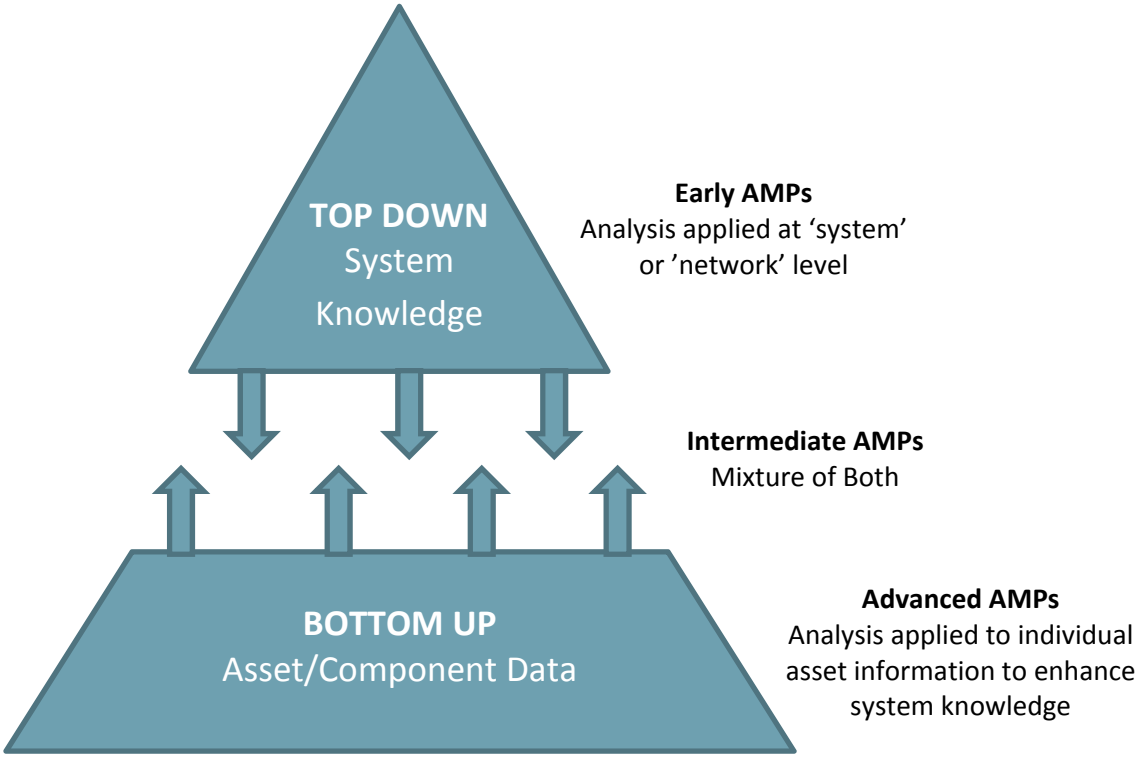


Figure 2 : 'Top Down' vs. 'Bottom Up' Approaches (Institute of Public Works Engineering Australasia, 2011)

Strategic Plan Strategies	Term Achievements	Asset Management Plan Actions
R.06 Council ensures it is able to provide resources to effectively deliver its Strategy and Programs.	R.06.01 Council provides adequate resources to deliver its programs and has introduced measures to increase its capacity to deliver cost effective and efficient services. R.06.02 Council's financial sustainability is being managed through best practices, diverse investment strategies and asset management control.	Implement AMP to ensure Council's assets are managed and maintained to target service levels Outputs of this plan are to include a report on the sustainability of the path network
R.02 Inverell exhibits the qualities of and operates as one of the three principle centres, (Inverell, Armidale and Tamworth) of the New England North West area as reflected by its strong economic, cultural and social diversity.	R.02.01 Inverell's attractive Central Business District provides an expanding range of economic, social and lifestyle services to the New England North West area and South Queensland.	Adopt level of service and performance measures relating to amenity of paths including those in CBD
C.03 Promote an ordered and safe Community.	C.03.01 Compliance and regulation programs have been developed and implemented to provide a safe environment for citizens and visitors.	Carry out regular inspection and reporting as per maintenance plan requirements.
C.05 Create clean and attractive streets and public places.	C.05.01 Council's maintenance programs are improving and enhancing the cleanliness and safety of streetscapes.	Adopt performance measures relating to amenity and safety of paths
C.07 Provide local opportunities for recreation, cultural and social activities.	C.07.02 The Shire's recreational areas and facilities are contemporary and conducive to the community's wellbeing.	Adopt performance measures relating to function of paths for recreation
C.10 Contribute to the health of the community by promoting healthy lifestyles and practices.	C.10.01 Council is actively supportive and involved in programs and initiatives that promote and contribute healthy lifestyles and practices.	Implement AMP to ensure Council's path assets support this objective
C.15 The social well-being and health of individuals and communities within the Shire is being maintained and improved.	C.15.01 Strategies are in place to respond to the social and health needs of the community.	Implement AMP to ensure Council's path assets support this objective
S.01 Sound Local Government Administration, Governance and Financial Management are provided.	S.01.02 A sound long term financial position is maintained. S.01.07 A contemporary system of risk management and internal control is operating. S.01.09 Best Value principles specified in the Local Government Act along with contemporary asset management processes have been implemented for asset sustainability.	Outputs of this plan are to include a report on the required financial expenditure to ensure the sustainability of the path network. This plan includes an inspection regime and risk management procedure consistent with Council's Risk management policies and industry best practice.
S.02 Council displays leadership, community engagement and	S.02.01 Council is managing its statutory requirements and the needs	Report on progress against performance

Strategic Plan Strategies	Term Achievements	Asset Management Plan Actions
collaboration with others.	of a participatory community in a transparent and balanced way.	measures in the annual report. Engage the community to develop desired levels of service and agree on a funding strategy to achieve them.
S.03 Council provides equitable services, consistent with available resources and priorities to meet the Shire's identified needs and preferences.	S.03.01 Services and programs that Council provides are determined based on equity, customer requirements and community benefits, best value and excellence.	This plan includes an evaluation procedure for maintenance and capital works that takes into account these areas.
S.08 Civil infrastructure is secured, maintained and used to optimum benefit.	S.08.01 An asset management strategy is in operation for civil infrastructure that optimises its use and maintained to agreed standards fit for contemporary purpose.	Implement AMP to ensure Council's assets are managed and maintained to target service levels
S.12 Provision of safe and efficient networks to ensure connectivity between populations	S.12.02 A sustainable and strategic approach to the management of Council's Assets is undertaken.	Implement AMP to ensure Council's assets are managed and maintained to target service levels
S.14 Increase the number of people walking and cycling, particularly for journeys within the community.	S.14.01 Programs and initiatives are being implemented that encourage alternate methods of transport that increase community health and wellbeing.	Implement AMP to ensure Council's path assets support this objective

Table 1 : Strategic Plan Strategies

Understanding our Assets

Understanding what assets Council owns and controls, along with key supporting information such as their use, condition, age, location and value is a key step to ensuring best practice asset management. Without this knowledge Council cannot ensure that the decisions it makes regarding the assets are in the best interests of the community.

Asset Use and Users

The first step in understanding Council's path assets is to consider what they are used for and who uses them.

The primary purpose of Inverell Shire's path networks is to facilitate the movement of pedestrians and cyclists in and around the Shire's urban areas. Walking usually forms a part of all trips taken in the urban area particularly within the central business districts of our towns. It is typically the first and last part of any trip taken so provision of an effective pedestrian path network is important for all members of the community. It is particularly important for some of the Shire's residents who rely on paths as a safe, efficient and effective means of moving throughout the community. This includes people who often do not have access to other means of transport including the disabled, children and the elderly.

In addition to this, paths play an important role in the health of the community by providing for recreational walking, running and cycling (where shared facilities are provided).

There is increasing evidence that encouraging walking and cycling as a form of transport is of great economic benefit to the community. A study by Sinclair Knight Merz and Price Waterhouse Coopers for the Queensland Department of Transport and Main Roads found that, for a typical off-road path in an inner urban area, economic benefits per kilometre walked or cycled are: decongestion (20.7 cents per kilometre walked or cycled), health (up to 168.0 cents per kilometre), vehicle operating costs (35.0 cents per kilometre), infrastructure savings (6.8 cents per kilometre) and environment (5.9 cents per kilometre) (SKM and PWC, 2011).

On the day of the 2011 Census around 5.7% of the population of Inverell Shire walked all the way to work. The national average was 3.7%. This indicates that Inverell Shire already has an active population of walkers. It is expected that this figure will increase as the footpath network is expanded to more destinations. In contrast to this only 0.5% of the population of Inverell Shire cycled to work as opposed to 1% of the population nationally (ABS, 2012), and the 16.7% of NSW residents who ride a bicycle in a typical week, according to the National Cycling Survey 2015. (Austroads, 2015).

The National Cycling Survey also asked participants what could be done to encourage bicycle riding and what priority they placed on each of these actions. The results of this question for NSW respondents are shown in Figure 3.

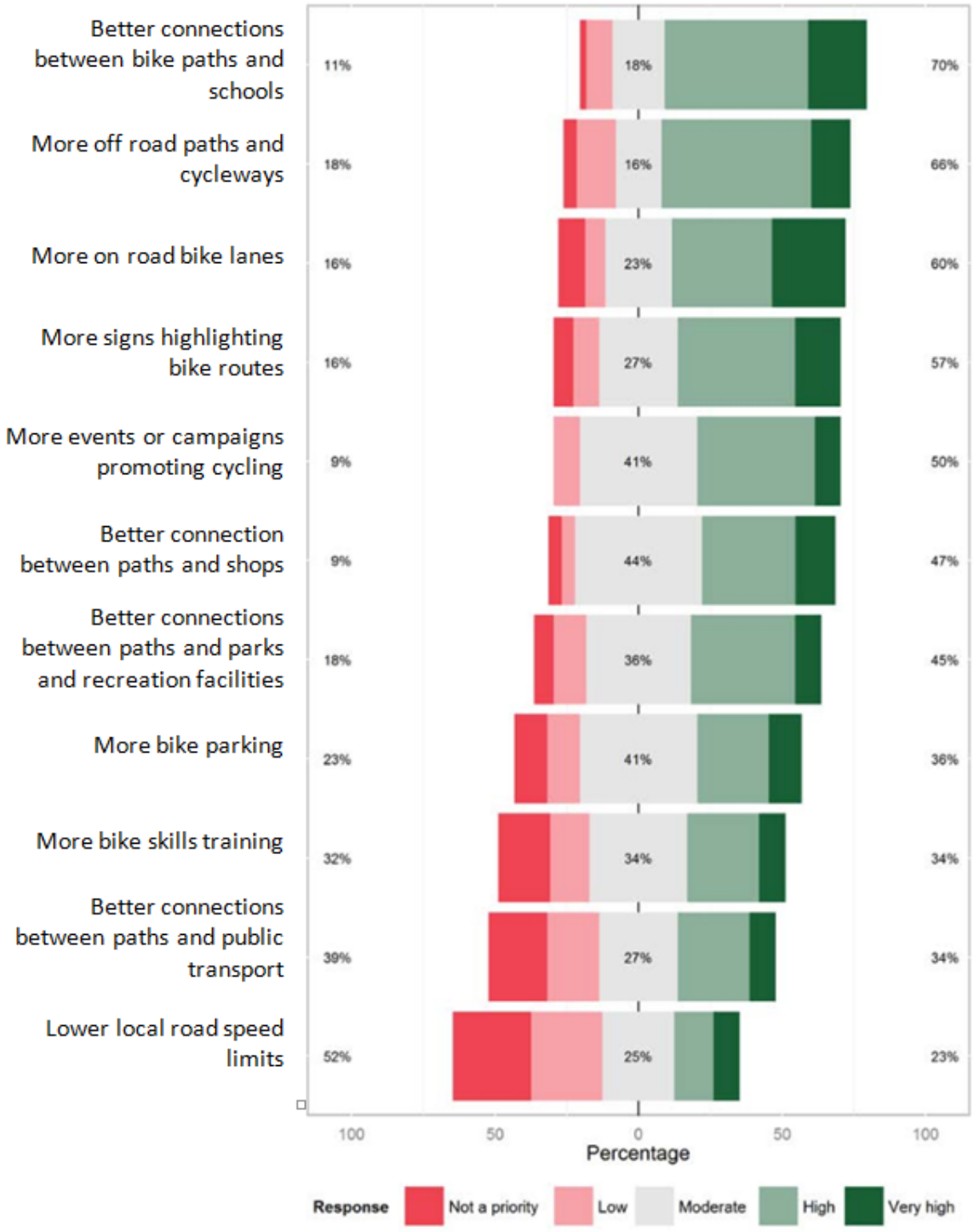


Figure 3 : Priority of actions that could be taken to encourage cycling (Austroads, 2015)

It is clear from these results that the highest priority for most cyclists was the provision of an expanded network of cycling infrastructure that links them to their destinations.

Asset Inventory

An asset data model provides a framework to structure and store asset data in an information system, segmenting an asset base into appropriate classifications based upon its construction and the service it provides. Inverell Shire Council has developed an inventory structure for its path assets that separates the paths into routes and segments.

The type and size of the assets that make up the path network are shown in Table 2 .

Asset Type	Area (m^2)
Paved Paths	18,935
Concrete Paths	57,740
Bitumen Paths	1,967
Gravel Paths	692
Path Structures	670

Table 2 : Path Assets Inventory

Asset Hierarchy

All path assets are classified according to a hierarchy that takes into account their specific function, types of users and user numbers. The hierarchical classifications are used to assist in prioritising works programs and to develop intervention levels and response times to remedy defects. Council has developed the following hierarchies for the assets covered by this plan.

Class	Description
Class 1	Constructed High traffic (CBD)
Class 2	Constructed Medium traffic (Key routes and areas around schools, homes for the aged etc.)
Class 3	Constructed Low Traffic (Other constructed urban paths)
Class 4	Unconstructed Verges

Table 3 : Path asset hierarchy

Asset Register

A good asset register is the foundation for enabling most asset management functions. To be able to operate and maintain the assets, staff need to be able to locate and identify them. To accurately value assets, sufficient data is needed to calculate replacement cost (e.g. size, type) and remaining life (age, expected life, condition). Council is also beginning to gather data on maintenance history and costs to support lifecycle optimisation and increase knowledge of the probability and consequence of asset failure for risk management purposes.

The organisation uses Technology One Enterprise Suite to manage its assets. The system includes an asset register that is fully integrated with the financial and work management modules allowing all work to be captured against the assets affected.

The system also allows for defects to be listed against an asset and work orders to be generated from these, aiding in the collection of long term life cycle cost data. All assets, defects and work orders can also be linked directly to the mapping system to allow accurate location information to be included.

Condition Profile

Inverell Shire Council rates the condition of its assets on a one to five scale in line with the uniform grading framework adopted as part of the NSW Government's integrated planning and reporting reforms as outlined in Table 4.

Rating	Status	Definition
1	Excellent	No work required Normal maintenance required but no deterioration identified.
2	Good	Only minor maintenance work required Provides a good level of service with some maintenance required. Deterioration identified but renewal not yet required.
3	Fair	Maintenance work required Still meets of level of service requirements but requires regular ongoing maintenance and minor repairs.
4	Poor	Renewal required Level of service impaired.
5	Very Poor	Urgent renewal/upgrading required. Asset/Component no longer provides required level of service. End of useful life.

Table 4 : Condition Rating General Descriptions

The condition rating system reflects the performance, integrity and durability of the principal components of each asset. The assessment of the nature and extent of defects for each component type is included in Council's Asset Condition Inspection Manual (Appendix A) which provides examples for each condition rating.

Within the useful life of an asset, the condition may fluctuate from one condition state to another. Judgment is exercised to determine whether the condition of an asset has changed to such an extent as to justify assigning a new condition state for the asset.

If an asset's condition state improves, one of the following must have occurred:

a) The original evaluation of condition level was incorrect, or
b) Works of a capital nature were carried out on the asset improving its condition. (Any such works should be capitalised and added to the value of the asset).

It must be recognised that it is possible for an asset to move to a non-adjacent condition state between valuations, either as a result of major works or as a consequence of deterioration over a valuation period.

Current Condition

The following condition profiles were developed following an inspection and condition assessment program that was carried out in 2015. Visual inspection was completed for a sample of the path network.

While the current condition profile in Figure 4 shows that Council has kept its assets in very good condition, there is still an ongoing renewal requirement to keep the assets performing.

Inverell Shire Council continues to collect condition information as part of its routine maintenance inspection program and these condition profiles will be updated regularly as information becomes available.

Projected Condition

The Useful Life of an asset is the period over which it is expected to provide a service to the community. The actual time between commissioning a new asset and disposing of it will vary significantly within each class, but for the purpose of this plan Council has adopted the following useful lives:

Asset Type	Useful Life(yrs)
Concrete Paths	100
Paved Paths	70
Path Bridges and Structures	100

Table 5 : Useful lives of path assets

All assets covered by this plan are assumed to degrade evenly over their useful lives so that in each condition state an asset will have an equal proportion of its life remaining. Both the adopted useful lives and the straight line degradation method are considered approximations and will be updated and improved as more asset information becomes available.

If the Long Term Financial Plan renewal identified in that section of the plan is expended on the assets as suggested, the condition profile of the assets in 2026 at the end of this plan should closely resemble Figure 5.

While the projected condition shows an increase in the number of assets in condition state 3, it is important to acknowledge that this is a conscious decision by Council to ensure that the community is extracting the most value from these assets. In this condition state the assets remain fit for purpose and replacing them would mean losing the remaining service potential of the asset for little gain.

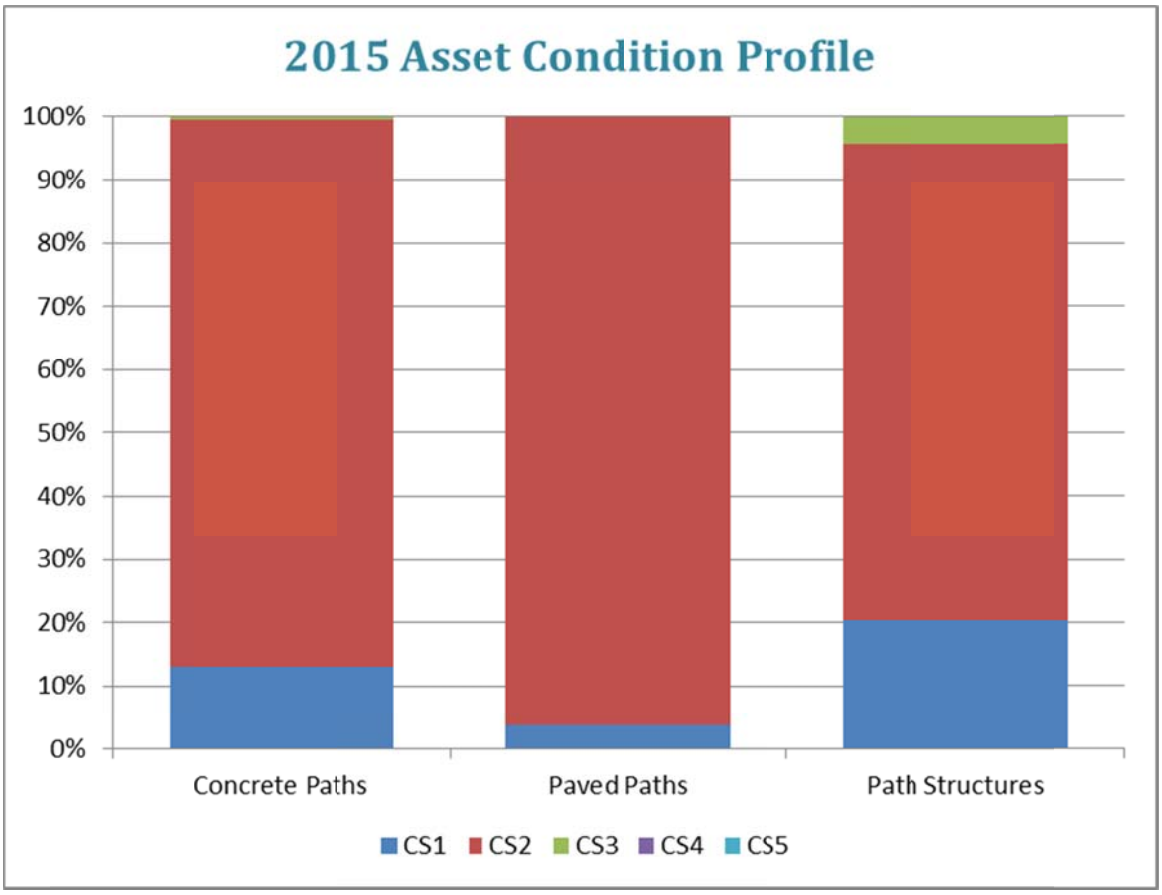


Figure 4 : 2015 Asset Condition Profile

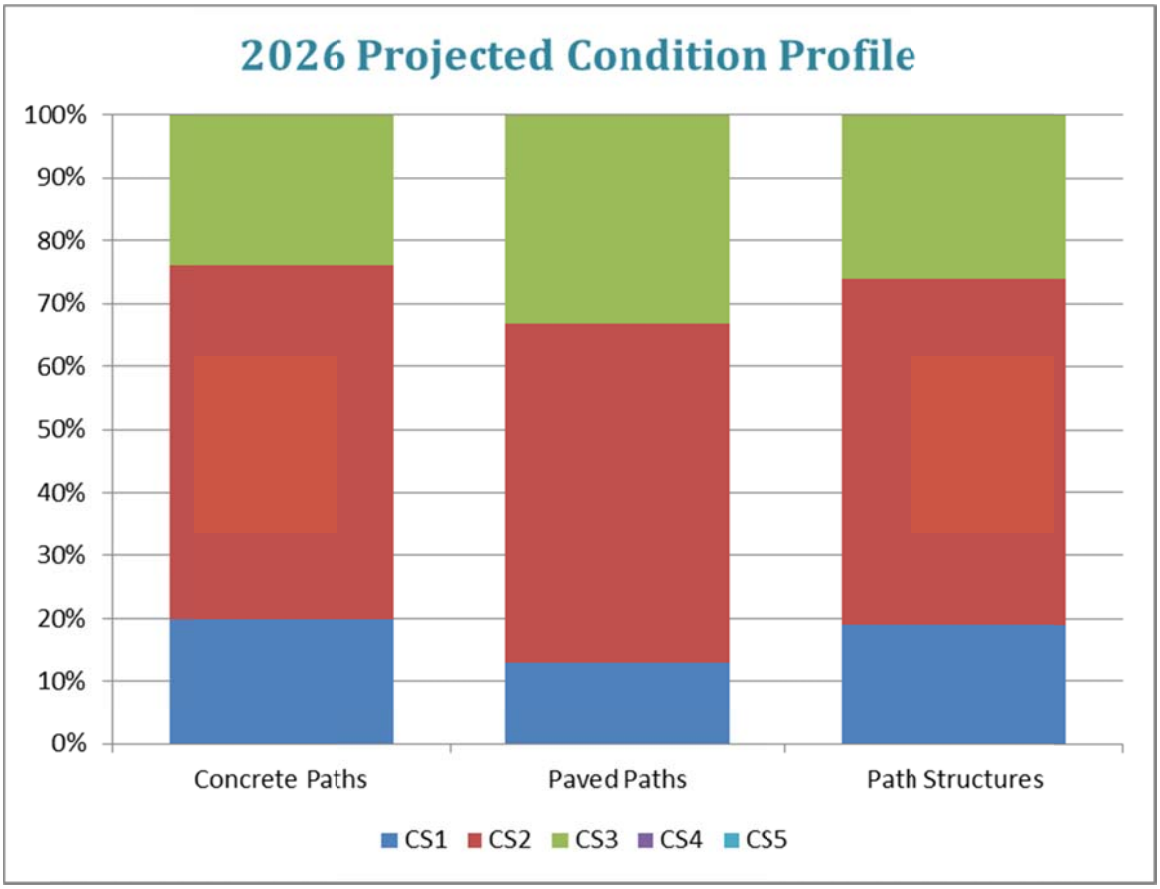


Figure 5 : Projected 2026 Asset Condition Profile

Setting Standards & Measuring Performance

A key objective of asset management is to match the standard of service the organisation provides with what the community expects. To ensure we are meeting the expectations of our community it is important for Council to describe what level of service we intend to deliver and then to measure both what we have done to deliver that service and how well our community has received the service.

Statutory Requirements

Statutory requirements often set the framework for minimum levels of service that infrastructure is required to meet. The following legislative instruments and torts are relevant to this asset management plan.

Disability Discrimination Act 1992 and Disability Standards for Accessible Public Transport 2002

The Disability Discrimination Act 1992 (DDA) provides protection for everyone in Australia against discrimination based on disability. It encourages everyone to be involved in implementing the Act and to share in the overall benefits to the community and the economy that flow from participation by the widest range of people.

Disability Standards for Accessible Public Transport (DSAPT) have been prepared under the DDA to specify rights and responsibilities about equal access and opportunity to public transport for people with a disability.

The standards establish minimum accessibility requirements to be met by providers and operators of public transport conveyances, infrastructure and premises. As an organisation that is responsible for the supply or maintenance of public transport infrastructure, Inverell Shire Council is classified as a provider. The standards take into account the range of disability covered by the DDA and establish standards for access paths, manoeuvring areas, ramps and boarding devices, allocated spaces, handrails, doorways, controls, symbols and signs, the payment of fares and the provision of information for public transport.

DSAPT were approved by the Commonwealth Parliament on 23 October 2002. All conveyances, premises and infrastructure brought into use for public transport after the commencement of the standards must comply with the standards. A compliance timetable allows between 5 to 30 years for existing facilities to be made compliant.

Disability Inclusion Act 2014

The Disability Inclusion Act 2014 (the Act) and Regulation commenced in NSW on 3 December 2014 and replaced the Disability Services Act 1993.

The Act contains commitments to making communities more accessible and inclusive for people with disability by ensuring all public authorities (including local councils) develop disability inclusion action plans.

Under the Disability Inclusion Regulation 2014, Inverell Shire Council is required to have an Action Plan in place by 1 July 2017. One of the key outcome areas of a Disability Inclusion Access Plan is providing liveable communities. Creating liveable communities for people with disability includes building an accessible transport network, ensuring that transport disadvantage is reduced and improving the experience of users with a disability.

It is important that this asset management plan be updated when Council adopts its Disability Inclusion Action Plan to ensure that both plans are reflective of each other (See Improvement Plan Action 1.3).

Tort of Negligence and the Civil Liability Act 2002

The elements of the law of torts are concerned with the accidental injury to person and property. Negligence, essentially, is the failure to take care against unreasonable risk of foreseeable injury to others.

Prior to 2001, Councils had relied upon a common law principle that highway authorities benefitted from immunity to negligence by nonfeasance. In effect, an authority could not be found liable only because they had failed to take positive steps to remove a risk (an omission by the defendant, for example not repairing a trip hazard). This principle had been relied on not only for claims relating to the road itself but also paths adjacent to the road. The High Court's decision in Brodie v Singleton Shire Council and Ghantous v Hawkesbury City Council on 31 May 2001 removed this long-standing immunity, and the liability of highway authorities has since been determined by the application of general negligence principles.

The common law principles governing negligence liability were then reformed by the Civil Liability Act 2002 (NSW). It alters the common law by requiring a greater degree of probability in determining whether there is a foreseeable risk of harm to which a reasonable person would have responded. In addition, the legislation lists four factors that should be considered amongst other relevant things:

- probability of the risk of injury
- gravity of the harm
- burden of eliminating the risk
- utility of the defendant's conduct.

To ensure the above requirements are met, Council takes a proactive approach to ensuring that the service provided does not present a significant risk of injury, loss or damage to the public. This includes carrying out a regular inspection programme and planning to respond to identified defects within a reasonable timeframe, depending on the risk they present. This is implemented in the ***Operating & Maintaining the Road Network*** section of this plan.

Levels of Service

Levels of service are a key business driver and influence all of Inverell Shire Council's asset management decisions. Level of service statements describe the outputs we intend to deliver to the community in relation to services attributes such as function, capacity, safety and cost effectiveness. Council has adopted the following level of service for its path assets.

Inverell Shire Council will provide an urban path network that follows the following six key principles

- ***Connected*** - A well-connected path network that provides good access to key destinations; integrates with public transport and ensures short distances to stops from the area served; and has continuous routes without barriers that are difficult to cross (e.g. major roads, railways).
- ***Comfortable*** - the network will meet design standards with respect to path widths, gradients and disabled access; provide good quality, well-maintained surfaces that are free from obstructions and appropriate for impaired people; ensure that cyclists do not conflict with pedestrians and ensure that users feel safe when using paths.
- ***Convenient*** - the network will be as continuous as practicable; ensure that streets can be crossed easily and safely; minimise delays to users at all existing facilities and provide adequate and safe storage areas for waiting pedestrians and cyclists such that the flow of other users is not impeded.
- ***Convivial*** - paths will provide a high standard of urban design so that they are attractive to users; include interesting routes; are substantially free from litter, debris and other deposits; and provide a safe environment for users.
- ***Conspicuous*** – the environment surrounding the path shall have clear signposting; a coherent layout and design where it is obvious how to get to various facilities; readily available supporting information (e.g. published local maps, information boards, tourist information); and clearly visible street names and sufficient repeater street signs and place name plates.
- ***Cost Effective*** – provision of the path network will be economically sustainable and provide the best value for money over the life of the assets.

Each of these principles is supported by one or more performance measures that indicate how successfully we are delivering on that commitment.

Council has defined performance measures in two terms, Community Performance Measures and Technical Performance Measures.

Community Performance Measures

Community performance measures relate to how the community receives the service in terms of the expectations listed above. These are generally measured using metrics relating to the number of complaints received, time to respond and overall satisfaction with the aspects of the service measured by surveying the community.

Community satisfaction surveys have not yet been implemented but will be developed in the first year of the plan (See Improvement Plan action 1.1). The organisation's performance against these measures will be reported back to the community annually.

Key Principle	Level of Service	Performance Measure process	Performance Target	Current Performance
Connected	A well-connected path network that provides good access to key destinations	Community complaints or requests received regarding connectivity of network	Less than 1 per km per annum	0.02 per km per annum
	Integration with public transport networks	Community satisfaction with connectivity as per annual survey	85% satisfied	Not yet available
Comfortable	Users feel safe when using paths	Community complaints or requests received regarding safety of network	Less than 1 per km per annum	0.68 per km per annum
		Community satisfaction with network safety as per annual survey	85% satisfied	Not yet available
	The network is easy to use and comfortable	Community satisfaction with network comfort as per survey	85% satisfied	Not yet available
Convenient	The network is as continuous as practicable. Streets, rivers and other obstacles can be crossed easily and without excessive delays	Community satisfaction with network convenience as per survey	85% satisfied	Not yet available
		Number of survey respondents who regularly use paths for cycling	Increase from previous survey	Not yet available
		Number of survey respondents who regularly use paths for walking	Increase from previous survey	Not yet available
Convivial	The path network is clean, free from litter and attractive to users	Community complaints or requests received regarding amenity of network	Less than 1 per km per annum	0.14 per km per annum
		Community satisfaction with network amenity as per survey	85% satisfied	Not yet available
Conspicuous	The network has clear signposting; a coherent layout and design and it is obvious how to get to various facilities	Community satisfaction with network safety signposting and layout as per survey	85% satisfied	Not yet available

Table 6 : Community Performance Measures

Key Principle	Level of Service	Performance Measure process	Performance Target	Current Performance
Connected	All identified destinations are linked to the network or links are included in the forward capital works plan	Number of destinations not linked or not included to be linked in forward capital plan	Zero	Zero
Comfortable	The network meets design and disabled access standards	Number of instances of failure of design and disability access in network found during routine inspections	Less than 1 failure found per km per annum	Zero
Convenient	Streets can be crossed safely	Number of reported road traffic accidents involving pedestrians or cyclists using paths per annum	Zero	Zero
Convivial	Paths provide a safe environment for users	Time to respond to identified defects	95% of defects responded to within adopted timeframe	Not yet available
		Number of claims or potential claims made per annum	Less than 0.1 per km per annum	0.275/km
	Paths are attractive, clean and free of litter and other debris	Time to respond to cleaning complaints	95% responded to within one week	Not yet available
Conspicuous	Paths are clearly signposted	All intersections of Class 2 paths have signage indicating direction to major destinations (CBD, Lake Inverell etc.)	100% compliance	Plan to implement path signage in development.
	Up to date maps, and information are available for all town networks	Map and supporting information availability and currency	Maps, and information are available for all town networks and updated annually	In development
Cost Effective	Provision of the path network is economically sustainable and provides the best value for money over the life of the assets	Proportion of Level 2 inspections returning a fair overall rating	90% of Level 2 inspections return an overall rating of fair or better.	96.1% of Inspections
		Network operating cost change compared to Local Government Construction Index	Cost to operate network does not exceed previous year by more than LGCI.	Unknown

Table 7 : Technical Performance Measures

Technical Performance Measures

Supporting the community performance measures are technical performance measures developed to measure how the organisation provides the service. These focus on the technical aspects of service provision such as cost effectiveness, condition and compliance with technical standards and specifications.

The organisation performance against these measures is to be reported annually to the Council's Civil and Environmental Services Committee.

Desired Levels of Service

Desired levels of service are used to indicate what service the community would like to receive from the assets in the future. This allows Council to work toward providing a better service from the path assets over the life of the plan.

Council will consult with the community during the first year of this plan to determine whether the current levels of service meet the community's expectations for the path network (See Improvement Plan action 1.2). Consultation will be carried out in accordance with Council's Community Engagement Strategy.

Planning for the Future

This section of the Paths Asset Management Plan attempts to predict future demand for services in order to identify the most effective means of managing that demand. This allows Council to make optimised decisions regarding its asset investment proposals.

It is important to note that demand forecasts are often proven wrong given the passage of time. Influences on demand such as changes in government policy, technological advances and community preferences cannot be predicted with certainty over long periods.

Therefore, the following forecasts should be treated with some caution and taken as possible future outcomes rather than definitive statements. Any assumptions essential to the following forecasts have been noted for each factor considered

Population

Perhaps the most commonly understood factor influencing demand is population change. It is generally the key driver for growth in all areas and drives demand for services provided by Council and, in turn, the number and type of assets that are required to provide these services.

Population projections for the Inverell Shire local government area are outlined in Table 8, Table 9 and Table 10. The NSW Department of Planning and the Environment predicts that the Shire's population will grow modestly to 2031. Demand for services provided by Council's path assets will continue to grow slowly with this increase in population.

The effect of an ageing population on the path network as predicted in Table 8 is expected to be more pronounced especially in regard to the design standards required to facilitate travel by the frail and aged on an urban path network

Age Groups	2011	2016	2021	2026	2031
0-14	3,500	3,550	3,600	3,550	3,550
15-29	2,850	2,800	2,650	2,650	2,650
30-44	2,800	3,000	3,150	3,250	3,150
45-59	3,150	3,250	3,300	3,250	3,400
60-74	2,850	2,950	3,100	3,250	3,400
75+	1,450	1,600	1,850	2,200	2,400

Table 8 : Demographic projections for Inverell Shire (NSW Department of Planning and the Environment, 2014)

Totals:	2011	2016	2021	2026	2031
Total Population	16,600	17,200	17,750	18,200	18,600
Total Households	6,700	7,050	7,350	7,650	7,900
Average Household Size	2.44	2.39	2.36	2.33	2.30
Implied Dwellings	7,600	8,000	8,350	8,650	8,950

Table 9 : Population Projections (NSW Department of Planning and the Environment, 2014)

Change	2011 to 2016	2016 to 2021	2021 to 2026	2026 to 2031
Total Population Change	600	550	500	400
Average Annual Population Growth	0.7%	0.6%	0.5%	0.4%
Total Household Change	350	300	300	250
Average Annual Household Growth	1.1%	0.9%	0.7%	0.7%

Table 10 : Population Change (NSW Department of Planning and the Environment, 2014)

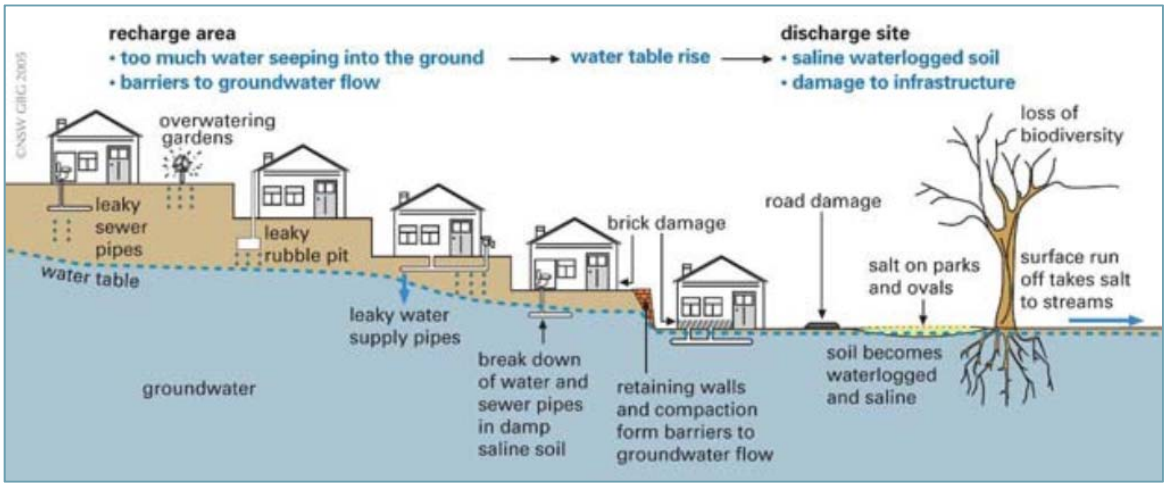


Figure 6 : Causes of urban salinity (Slinger & Tenison, 2007)

Urban Salinity & Water Table

Urban salinity refers to the processes that cause, and the impacts that result from, the mobilisation and re-distribution of salt in urban environments.

Vegetation composition, cover and health, patterns of water use, additional sources of salt, and the design, construction and maintenance of infrastructure can all contribute to urban salinity. These changes can alter the natural water cycle, inhibit drainage and impede ground water flow. Figure 6 shows some examples of how development in urban areas can affect the water table.

Surrounding land use and geology can also add to the complex array of local or site specific issues as these factors also influence recharge rates, water movement and ground water discharge.

High saline water tables or saline water supplies in urban areas can lead to saline discharge sites, damaged buildings and fixtures, and damage to Council's infrastructure. For Local Government and other urban stakeholders, this translates to additional costs associated with extra repairs and maintenance, reduced life span of infrastructure, preventative action and increased operating costs.

Inverell Shire Council needs to be aware of the danger that salinity and high water tables present to the footpath network and ensure that materials and methods used in the development and maintenance of the networks are resistant to its effects. This is especially important when deciding on the material qualities required for paved paths as bricks are particularly prone to damage caused by salinity.

Climate Change

Although climate change is expected to have little direct impact on most of the path network assets, the Garnaut Climate Change Review did find that:

"There is expected to be an increase in the intensity of rainfall events in some areas, and the number of days without rainfall is also expected to increase. This suggests that the future precipitation regime may have longer dry spells broken by heavier rainfall events" (Garnaut, 2008, p. 115)

More intense rainfall events are likely to lead to greater riverine flooding which could have a significant impact on infrastructure located in the flood hazard area, especially the bridges and paths crossing and alongside the Macintyre River floodway in Inverell. Council needs to consider this when planning to replace or expand its network.

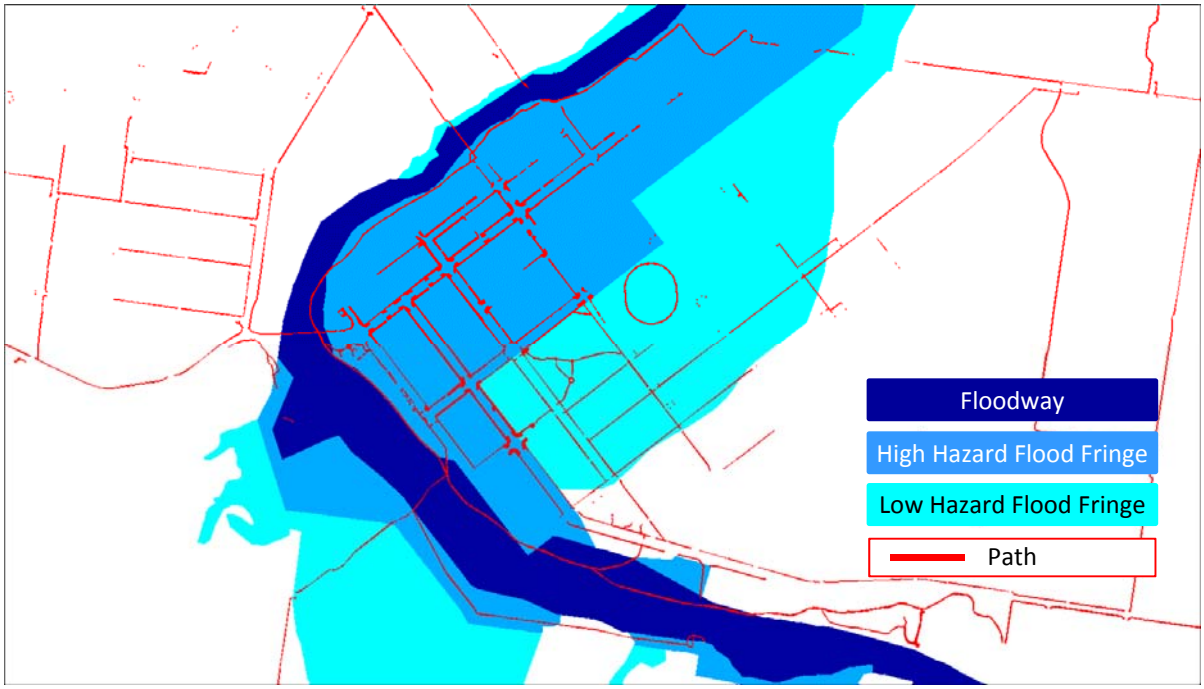


Figure 7 : Map of the Inverell Path network showing over 59% of Inverell Paths in the flood hazard area

More information will be available about the expected effect of climate change on rainfall when Engineers Australia releases the update to Australian Rainfall and Runoff.

Perhaps the most significant impact of climate change on the path network will be the community's awareness of the issue motivating an increasing number of people to seek alternatives to driving.

Awareness of climate change in Australia remains among the highest measured in the world - 97% say they know "a great deal" (24%) or "something" (73%) about the issue (Pugliese & Lyons, 2010). This is expected to drive a continuing growth in demand for convenient cycling, walking and public transport facilities.

State and Federal Government Policies and Strategies

The National Cycling Strategy has been developed as a coordinating framework that identifies responsibilities of all levels of government, community and industry stakeholders to encourage more people to get on their bicycles and start riding for a better life.

The National Cycling Strategy 2011-16 was published in September 2010. It recognises that increasing the number of people who ride a bike for transport and recreation has a host of benefits to individuals and society. The vision for the Strategy is to double the number of people cycling in Australia by 2016.

The strategy is in line with the NSW Long Term Transport Master Plan (LTTMP) and the Regional Transport Plans; which also focus on improving walking and cycling connections within major centres. Their purpose is to increase opportunities for people to walk and ride their bikes more often in order to help reduce congestion, particularly around schools, employment centres and universities.

This focus has led to increasing pressure on local government to provide infrastructure that supports these strategies which has in turn encouraged increased availability of state government grant funding.

Operating & Maintaining the Path Network

Maintenance is the regular on-going work that is necessary to keep assets operating. Maintenance does not increase the service potential of an asset or keep it in its original condition; it slows down deterioration and delays when rehabilitation or replacement is necessary. This part of the plan details the specific maintenance activities Council will undertake to keep its path assets performing to the required level of service.

Inspections

Inspections are formalised assessments undertaken to identify defects and hazards as well as to assess the overall condition of the assets. They are carried out both in response to requests by the community and as part of a regular inspection programme by knowledgeable, skilled personnel. The result of routine inspections, as well as information relating to the speed and quality of Council's response to identified hazards, is to be presented to the Council's Civil & Environmental Services Committee on an annual basis. Council carries out a three level inspection regime as detailed below.

Level 1 – Routine Maintenance Inspections

Routine Maintenance Inspections are visual inspections to check the general serviceability of the asset, particularly for the safety of users, and to identify emerging issues. They may be carried out in conjunction with routine maintenance of the asset.

Level 1 inspections provide a check of the asset inventory held in the Register, identification of any hazards or defects present and may recommend a Level 2 inspection be carried out if warranted by observed distress or unusual behaviour of the asset.

Class 1, 2 and 3 assets are included in a regular inspection programme and Class 4 assets are informally inspected during inspection of the adjacent street. In every case a defect reported to Council through its customer request system is subject to a Level 1 Inspection at which point the inspector will determine the risk that the defect presents to the community.

Defects or hazards identified during these inspections are either programmed for response during planned maintenance or responded to immediately via reactive maintenance, depending on the risk they present and the relative importance of the component in the asset hierarchy. The results are also collated for later reporting and to aid in decision making. Each defect is rated according to the severity of the identified physical defect and the condition of the environment in which the defect is found.

Figure 8 : A typical CBD footpath in Inverell that can require regular inspection due to movement in the pavers causing trip hazards and unevenness

Physical defect ratings

Physical defects rated include trip hazards, slipperiness, unevenness, ponding and other defects. They relate to the severity of the defect itself.

Trip Hazards

Trip hazards are identified as a height difference between two adjacent surface levels. They are often found at concrete panel joints or between pavers and are rated according to their depth.

Rating	Description
1	<10mm
2	10-20mm
3	20-30mm
4	30-40mm
5	>40mm

Table 11 : Trip Hazard rating

Slipperiness

Slipperiness is defined as difficulty standing on or walking or riding across a path because it is smooth, wet, slimy or covered with debris. It is rated subjectively by the inspector.

Rating	Description
1	Very Slight
2	Slight
3	Moderate
4	Very Slippery
5	Extremely Slippery

Table 12 : Slipperiness rating

Unevenness

Unevenness is irregularity in the surface of a path that makes it difficult to traverse. It is rated subjectively by the inspector.

Rating	Description
1	Very Slight
2	Slight
3	Moderate
4	Very Uneven
5	Extremely Uneven

Table 13 : Unevenness rating

Ponding

Ponding is the presence of a local depression in the surface of the path which allows water to pool. It is rated according to the measured depth of the depression.

Rating	Description
1	<10mm
2	10-20mm
3	20-30mm
4	30-40mm
5	>40mm

Table 14 : Ponding Rating

Other Defects

Some physical defects cannot be described using one of the above methods and are rated as “other defects”. These can include deep holes in a grassed verge, edge drops on a concrete path, bicycle pedal entanglement risks on a footbridge; or any number of other unspecified defects. The inspector will describe the defect in a comment and rate them subjectively according to the injury risk they present.

Rating	Description
1	Very Low – not likely to result in injury
2	Low – Potential to cause minor injury or accident
3	Moderate – Potential to cause injury or accident requiring first aid treatment
4	High – Likely to cause injury or accident requiring medical treatment
5	Very High – Very likely to cause significant injury or accident

Table 15 : Other Defect Rating

Environmental condition ratings

Environmental conditions rated include lighting shadows and obfuscation. They relate to the environment in which the defect is found.

Lighting

Lighting is rated based on the presence of light sources and their effectiveness in making a defect more conspicuous. It is rated subjectively by the inspector.

Rating	Description
1	Excellent lighting
2	Good lighting
3	Adequate lighting
4	Inadequate lighting
5	No lighting

Table 16 : Lighting rating

Shadows

Shadows are rated based on their presence and their effect on a person's ability to perceive the hazard. They are rated subjectively by the inspector.

Rating	Description
1	No shadow
2	Little shadow
3	Some shadow
4	Moderate shadow
5	Heavy shadow or complex obfuscating shadow patterns

Table 17 : Shadows rating

Obfuscation

Obfuscation is the presence of an object or environmental condition (such as glare) that affects a person's ability to perceive the hazard. It is rated subjectively by the inspector.

Rating	Description
1	Clearly visible from 5m in all directions
2	Visible from 3m in all directions
3	Adequately visible
4	Only visible upon close inspection
5	Not readily visible

Table 18 : Obfuscation rating

The inspector combines the rating for the physical defect and the rating for the environmental defect to provide an overall risk rating as shown in Table 19.

It is important to note that the table requires at least one physical defect and one environmental risk to obtain a rating. If there is more than one environmental risk, the risk with the highest rating is the lead risk. If there is more than one physical defect each will be assessed and recorded separately.

Physical Rating	Environmental Rating				
	1	2	3	4	5
5	VH	VH	VH	VH	VH
4	H	H	H	VH	VH
3	H	H	H	H	VH
2	M	M	M	H	H
1	L	L	L	L	L

Table 19 : Overall Risk Rating calculation table

If a risk is rated as high (H), then the location of the footpath and the volume of traffic must be considered. If the footpath is outside a building used by the elderly, children or the disabled; or is frequently used such as a mall, main street or school, then the rating is moved up the next level. The rating may also be moved up one level if there are other factors that may increase the risk such as the potential for ongoing debris contaminating the surface (such as leaves or gravel from an adjacent driveway) or the defect being hard to see due to the pattern of pavers.

Minimum inspection frequency is dictated by the criticality of the asset in the network; Class 1 assets are inspected once every fourteen days, Class 2 assets bi-annually and Class 3 assets annually.

Design and safety

In addition to identifying defects and hazards in the path network inspectors also take note of any instance where a path asset no longer meets the required standards for design and safety. These are noted during routine inspections and used to inform programmed maintenance as well as the optimised renewal decision making process outlined in the ***Renewing and Expanding the Road Network*** section of this plan.

Level 2 – Condition Inspections

Condition Inspections assess and rate the condition of the assets. This information is used as a basis for assessing the effectiveness of past maintenance treatments, identifying current maintenance needs, modelling and forecasting future changes in condition and estimating future budget requirements.

Level 2 inspections are much more detailed than Level 1 inspections. The inspections measure the extent and severity of defects in the asset as well as the general condition of the asset overall.

The condition rating system reflects the performance, integrity and durability of the principal components of each asset. The assessment of the nature and extent of defects for each component type is included in Council's Asset Condition Inspection Manual (Appendix A) which provides examples for each condition rating and a method to calculate an overall condition rating for each structure or path.

Inspections are programmed to target 20% of all assets each financial year to ensure that every asset is subject to a Level 2 inspection at least every five years. The results of the Level 2 inspections are used to give an indication of the condition of the entire network which is used to assess the performance of the maintenance budget and is reported in the annual report each year.

Level 3 – Detailed Engineering Inspections

A Detailed Engineering Inspection is an extensive inspection which may include physical testing and structural analysis to assess the asset's structural integrity, to identify and quantify the current and projected deterioration of the asset and to assess appropriate management options. They are generally only required for complex structures within the path network such as bridges and stairways.

Level 3 inspections must be carried out by an experienced and qualified engineer and are usually completed as a result of a recommendation in a Level 2 inspection report which has rated the asset in poor or very poor condition and raised significant concerns about its continued performance. Level 3 inspections may also be necessary in order to provide a load rating for a structure or to assess the condition of an asset prior to carrying out programmed works such as rehabilitation or reconstruction.

The inspecting engineer will provide a written report of the results of a Level 3 Inspection to the Director Civil and Environmental Services with a copy to the Manager Civil Engineering within 60 days of the inspection.

The report may include assessments of load capacity and condition, recommendations for further testing, remedial action and future inspection and monitoring or a complete "Structure Management Plan" for individual structures as deemed necessary by the inspecting engineer or as requested by management.

Reactive Maintenance

Maintaining Council's paths through regular investment is the most effective way to preserve the condition of the assets and reduce the risk of defects occurring and intervention becoming necessary. However, even with regular investment, defects will occur; reactive maintenance refers to works that are carried out as a matter of urgency, usually to repairs these defects for reasons of safety.

When responding to defects with reactive maintenance the organisation takes a safety first approach. Where there are clear implications for public safety we will act to

allay the danger. Where danger is not implicit we will balance our actions and responses against other criteria and priorities as set out in this plan

The time to respond to a defect is dependent on the defect's overall risk rating and the asset's hierarchical classification as outlined in Table 20.

In addition to the below Council will respond immediately to any trip hazard if it has been notified that a fall has occurred.

The organisation's performance in responding to identified defects within the adopted timeframe is to be measured and reported annually to Council's Civil and Environmental Services Committee.

Risk Rating	Action	Class	Response Time
L	Consideration should be given as to whether action needs to be taken	1	As resources permit
		2	As resources permit
		3	As resources permit
		4	As resources permit
M	Program into maintenance works	1	20 working days
		2	30 working days
		3	As resources permit
		4	As resources permit
H	Make safer	1	2 working days
		2	5 working days
		3	10 working days
		4	10 working days
	Effect repairs (either temporary or permanent)	1	3 weeks
		2	3 weeks
		3	4 weeks
		4	4 weeks
VH	Make safe	1	4 hours
		2	4 hours
		3	2 working days
		4	2 working days
	Effect immediate repair or replacement	1	10 working days
		2	10 working days
		3	4 weeks
		4	4 weeks

Table 20 : Defect response times

To meet the above targets Council has provided significant ongoing maintenance funding for the network of over $3000 per kilometre per annum for the life of this plan.

This funding will ensure that defects are responded to in line with the above, and that Council's infrastructure do not pose an unnecessary risk to the public.

Council needs to be aware of the effect of new work on its ongoing maintenance. If the projects identified in the expansion program of this plan are funded Council's annual maintenance burden will increase. As such, it is important that all expansion projects considered for funding include an assessment of their whole of life costs.

Renewing and Expanding the Path Network

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

When deciding whether an item of expenditure is to be capitalised Council refers to the decision tree in the CPA publication *Valuation and Depreciation - A guide for the not-for-profit and public sector under accrual based accounting standards (2013)*.

Renewal

Asset renewal is major work which restores, rehabilitates, replaces or renews an existing asset to its original service potential. This is generally required when an asset has reached the end of its useful life or has failed. It is periodically required expenditure that is relatively large in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time.

Due to the long physical life of path assets, renewal and rehabilitation is undertaken reactively as assets fail or are identified as being about to fail as part of ongoing condition assessments.

Inverell Shire follows an Optimised Renewal Decision Making (ORDM) process when making decision about renewal of its assets. ORDM is a process that assists organisations to assess the optimal renewal technique or activities that are available to extend, augment or reduce the service delivered by infrastructure assets, in line with business objectives. The key elements when performing ORDM are:

- Identifying and analysing the modes of failure
- Identifying viable treatment options
- Undertaking an economic and level of service evaluation of these options
- Selecting the most strategically cost effective option for the organisation.

In a path network, the potential modes of failure that may lead to renewal include:

- Cost of Service.
- Performance/Reliability/Availability
- Structural Integrity
- Capacity/Utilisation

The ORDM processes for each of the failure modes are summarised in Table 21 to Table 24

This section of the plan also provides a forecast of the notional renewal funding required to keep the assets in satisfactory condition and compares it to the available funding provided in Council's Long Term Financial Plan.

ORDM Process	Cost of Service
Causes	• Excessive maintenance costs • High number of failures due to poor condition • Future liabilities, rehabilitation or replacement works necessary • High operating costs due to poor condition • Equipment or asset obsolete – Repairs and spare parts costly or not available – New asset would be more efficient, save money
Effects	• Excessive subsidies required • Drain on recurrent cash flow • Future liabilities for renewal works • Higher operating costs
Significance	• Degree to which costs exceeded income generated (return on asset) • Business viability – ability to carry non-performing assets or raise additional income
Treatment Options	• Raise income derived from asset, depends on: – Customer response – Present cost levels – Predictive cost increases • Reduce high cost activities, maintenance and operations • Negotiate lower level of service, performance, reliability, etc. • Defer all capital investment • Mothball asset • Dispose of asset • Transfer asset
Evaluation	• Complete ORDM evaluation on various treatment options • Assess and determine strategy in the light of total business picture

Table 21 : Failure Mode – Cost of Service

ORDM Process	Performance/Reliability/Availability
Causes	• Decay of asset condition • Failure of component (e.g. joint, panel) • Failure of associated unit (secondary failure e.g. culvert)
Effects	• Interruption of service (closure of path) • Reduced level of service (Surface quality poorer / partial closure service)
Significance	• Degree to which service is effected • Number of customers effected and time • Consequences of failure, e.g. safety/damage
Treatment Options	• Improve planned maintenance/condition monitoring • Reduce repair time • Re-route traffic • Improve condition monitoring • Develop predictive model • Overhaul (or rehabilitate) asset to achieve necessary reliability • Replace asset
Evaluation	• Evaluate cost/benefits including business consequences of not meeting reliability standards • Equate costs of consequences of failure to probability • Rank cost/benefit against all opportunities for investment

Table 22 : Failure Mode - Performance/Reliability/Availability

ORDM Process	Structural Integrity/Asset Mortality (End of physical life)
Causes	• Structural integrity of asset has decayed below level requirement to meet normal working stresses
Effects	• Collapse • Cracks, Spalling • Tree roots • Personal damage (see Risk Management/Consequence of Failure)
Significance	• Degree of damage caused • Risk to life • Effect on customers • Consequences of failure
Treatment Options	• Improve ability to repair quickly • Rehabilitate asset before failure • Replace asset • Mothball asset • Dispose of asset
Evaluation	• Evaluate cost/benefits of each options • Benefits to include all consequences of failure costed to probability of failure • Rank cost/benefit against all opportunities for investment

Table 23 : Failure Mode - Structural Integrity/Asset Mortality

ORDM Process	Capacity/Utilisation	
	Exceeds design capacity	**Inadequate utilisation**
Causes	• Increased number of users • New destinations • New user type (changed to shared path or to cycleway) • Increased customer expectations, demands for service	• Decline in demand • Destinations no longer generating traffic
Effects	• Inability to meet demands on network	• Cost of operating assets is above ability to pay
Significance	• Degree to which capacity is exceeded • Number of customers effected • Risk involved, safety, etc.	• Is it an unwarranted burden on the business (not core activity/non-performing asset)
Treatment Options	• Operate system differently: – Interconnection between routes • Boost asset capacity (widen) • Augment asset/duplicate • Reduce levels of service • Build new asset	• Mothball assets • Dispose of assets – rationalisation • Identify cost as CSO and derive other income • Transfer liability to others
Evaluation	• Evaluate costs/benefits/income of each option • Benefit/consequence of failing to meet demands against probability of occurrence • Rank cost/benefit against all opportunities for investment	• Overall impact on organisation

Table 24 : Failure Mode - Capacity/Utilisation

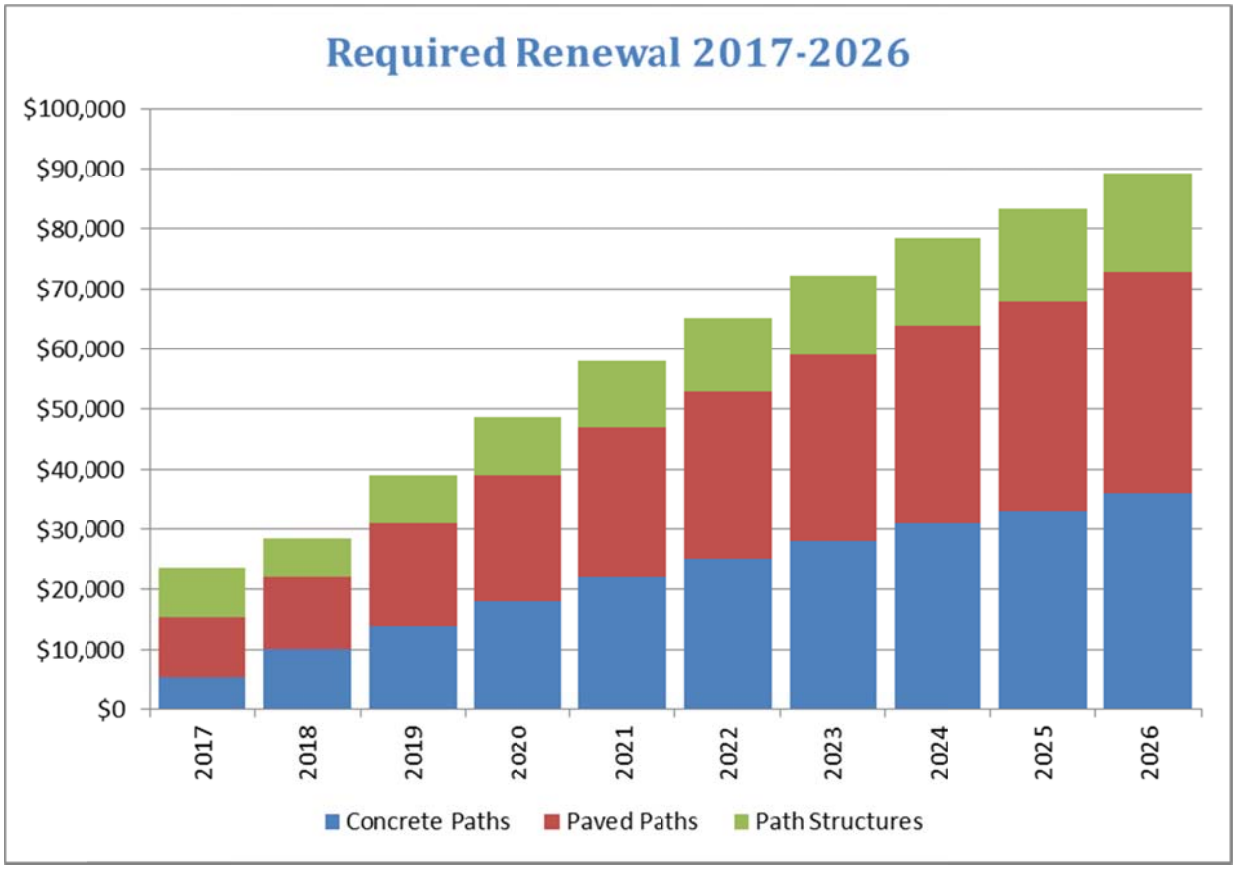
Projected Renewal Requirements

Council intends to ensure that assets do not fail to provide a satisfactory level of service. This means providing enough renewal funding to replace or renew any asset that reaches condition state 4 or 5 throughout the life of this plan.

Figure 9 shows the notional funding required for each year of the plan to renew enough of the assets to meet this target and highlights that as the end of the plan nears, the funding required begins to increase. This is by virtue of the fact that most path assets are currently in condition states 1 and 2 and less intervention is needed until a greater proportion reaches state 3.

The required renewal funding is based on modelling of each class as a whole and assumes that all assets are spread evenly throughout the condition states. It does not identify specific projects that need to be undertaken to repair or renew assets and is instead intended to show the gradual progression of deterioration that all assets moves through as they near the ends of their useful lives. The renewal requirements identified are therefore often unlikely to be required to be spent in the years indicated. For example, while a foot bridge asset may lose a proportion of its value into a lower condition state each year, this doesn't mean there are necessarily any issues with the bridge. Intervention will only occur when it is necessary for a project to be completed to the return the asset to its required service level.

Ongoing condition assessment of all asset classes will ensure that up to date information is provided for renewal forecasting as the assets age and the level of service they provide begins to decline. This plan will be monitored to ensure that changes are reflected when condition information is reviewed each year.



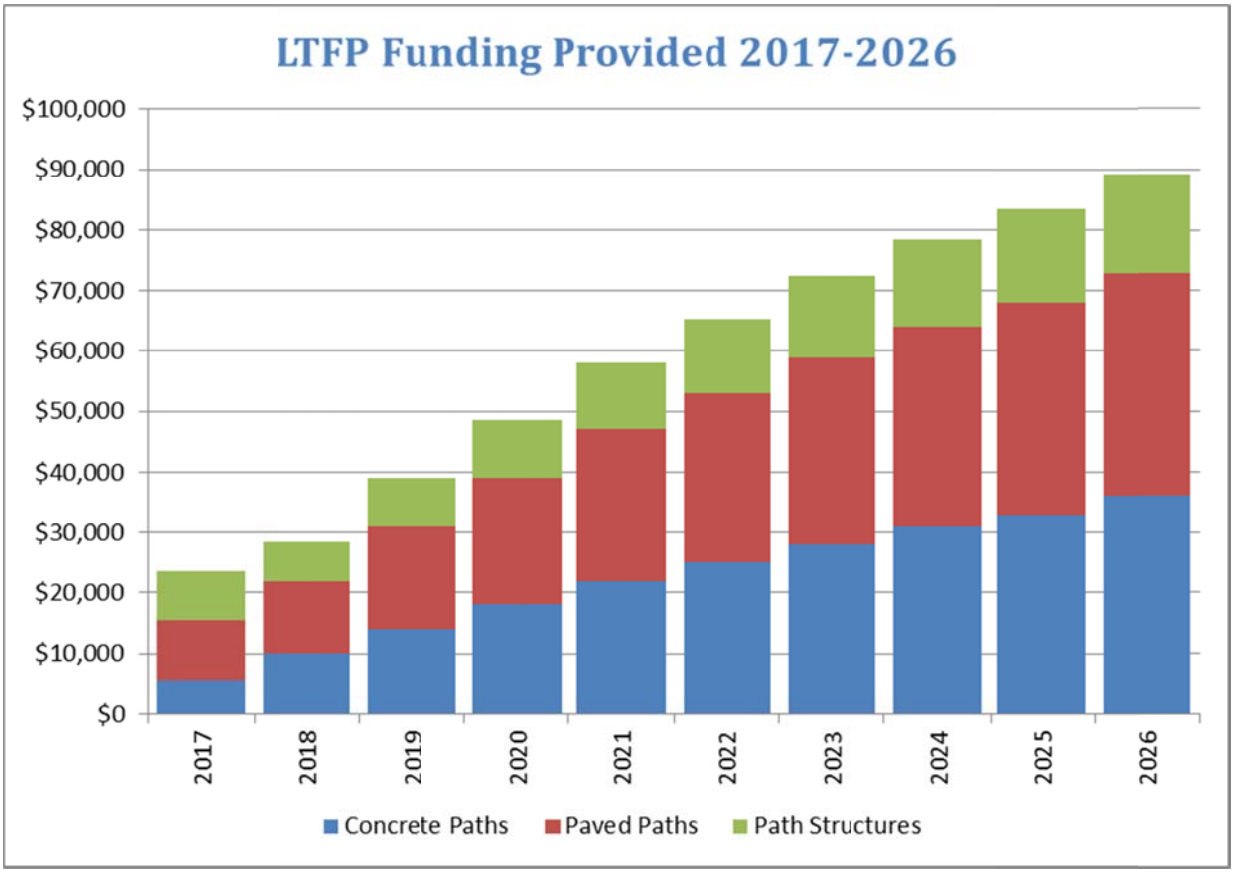
Budgeted Renewal

Councils Long Term Financial Plan 2017-2026 (LTFP) provides the available level of funding to implement the requirements of this Asset Management Plan. The LTFP is used to formulate the annual Operational Plans and budgets and includes provision for funding from grants and borrowings as well as rates and charges.

Figure 10 shows the funding available in the LTFP for each year of the plan. The Long Term Financial Plan 2017-2026 includes funding from a proposed special rate variation, intended in part to address the shortage of renewal funding required to return Council's infrastructure to a satisfactory condition.

At present 100% of the required funding to keep the assets providing a satisfactory level of service is provided for in the Long Term Financial Plan.

If the projects outlined in the expansion plan are funded the required renewal will increase, however this is not expected to have an impact on the overall condition profile of the class during the life of this plan as any new assets constructed are projected to remain in condition state 1 for the first 25 years of their useful lives.



Expansion

Capital expansion is expenditure which enhances or expands an existing asset network to provide a higher level of service or that will increase the life of the assets beyond that which they had originally.Expansion of the path network is focussed on delivering the six key principles outlined in the adopted level of services statements (See the ***Setting Standards & Measuring Performance*** section of this plan). To ensure expansion works align with these principles, all projects will subject to a planning process that includes calculation of their whole of life costs and analysis of their alignment with these principles before they are included in the operational plan. The project proposal templates are included in Appendix B. Table 25 contains a list of projects identified for future expansion works. Council has not set aside any funding to achieve these works in its long term financial plan, instead focusing on ensuring renewal is funded. To achieve its strategic objectives it is likely that Council will have to obtain funding from other sources to complete these works. Council has a strong track record of attracting funding to construct projects identified as priorities in its long term plans. Capital expenditure in recent years has been linked to such grant funding.

Priority	Project Name	Estimate
1	INVERELL Warialda Road - Auburnvale to Froude	$27,775
2	INVERELL Evans Street - Wood to Mansfield	$25,880
3	INVERELL Evans Street - Mansfield to Lawrence	$25,393
4	INVERELL Gilchrist Street - Swan to Leonard	$13,063
5	INVERELL Gilchrist Street Leonard to Vernon	$26,566
6	INVERELL Brown Street - School to Shirley	$5,706
7	INVERELL Brown Street & Wade Street - Shirley to Wade Shops	$22,975
8	INVERELL Oswald Street - Home for Aged to High school	$47,719
9	INVERELL Oswald Street - Howard to Oconnor	$21,697
10	INVERELL Oconnor Street - Oswald to Brae	$16,037
11	INVERELL Clive Street - Highway to Wood	$21,639
12	INVERELL Clive Street - Wood to Short	$73,738
13	INVERELL Henderson Street - Wood to Arthur	$21,363
14	INVERELL Henderson Street - Mansfield to Wood	$26,500
15	INVERELL Wynne Street - Old Bundarra to William	$28,260
16	INVERELL Aurburn Vale Road - Hindmarsh to Wesley	$42,222
17	INVERELL Auburn Vale Road & Harland St - Wesley to Brownleigh vale	$40,120
18	INVERELL Wynne Street - William to Borthwick	$38,810
19	INVERELL Harland Street - Borthwick to Brownleigh Vale	$51,482
20	INVERELL Froude Street - Highway to Carlyle	$21,504
21	INVERELL Froude Street - Carlyle to Harland	$34,490
22	INVERELL Captain Cook Drive - Toilets to Campbell Park	$7,055
23	DELUNGRA Gunnee Street - School to Burnett	$18,928
24	DELUNGRA Gunnee Street - Highway to Burnett	$13,676
25	DELUNGRA Gunnee Street - Highway to Railway Street	$13,245
26	DELUNGRA Railway Street - Gunnee to Macintyre	$16,740
27	GILGAI Old Stannifer - Church to Wood	$13,169
28	INVERELL Highway - Moore Street to Glen Innes Access Road	$2,897
29	INVERELL Vernon Street - Highway to Urabatta	$30,718
30	INVERELL Vernon Street - Urabatta to Gilchrist	$34,630
31	INVERELL Mawson Street - Wynne to Eugene	$32,245
32	INVERELL Waratah Avenue - Eugene to Linking Together Centre	$18,390
33	INVERELL Swanbrook Road - Gaps in current path	$56,138
34	INVERELL Wood Street & Ross Street - Rivers to School Crossing	$53,199

Priority	Project Name	Estimate
35	INVERELL Rivers Street - Wood to Mansfield	$54,398
36	INVERELL Rivers Street - Lawrence to Mansfield New	$38,206
37	INVERELL River Street - Lawrence to Mansfield	$9,812
38	ASHFORD Bukkulla Street - Frazer to David	$26,473
39	ASHFORD Duff Street - Bukkulla to Footbridge	$17,526
40	ASHFORD Duff Street - Footbridge to Frome	$5,459
41	GILGAI Wood Street - Hall to Old Stannifer	$19,788
42	INVERELL Arthur Street - Ross to Henderson	$18,559
43	INVERELL Arthur Street - Henderson to Granville	$29,369
44	INVERELL Arthur Street - Granville to Chester	$30,122
45	INVERELL Arthur Street - Chester to Greaves	$29,633
46	INVERELL Arthur Street - Greaves to Bennett	$29,268
47	INVERELL Arthur Street - Bennett to Clive	$6,333
48	YETMAN River Street - Shop to Warialda st	$4,207
49	YETMAN River Street - Warialda to Macintyre	$14,944
50	YETMAN River Street - Macintyre to park	$4,123
51	GILGAI Hall Street - Church to Wood	$12,560
52	INVERELL Byron Street - Wood to Arthur	$15,404
53	INVERELL Oswald Street - O'Connor to Whittingham	$23,918
54	INVERELL Whittingham Street - Brae to Oswald	$15,856
55	INVERELL Ring Street - Brae to George	$45,452
56	INVERELL George Street - Hatcher to Ring	$79,334
57	INVERELL Ring Street - Bridge to King	$11,795
58	INVERELL Ring Street - Bridge to Byron	$18,964
59	INVERELL Cycleway - River behind Kamilaroi oval	$115,291
60	INVERELL Harland Street - Lang to Auburnvale	$11,839
61	ASHFORD Bukkulla Street - Ely to David	$25,196
62	ASHFORD David Street - Bukkulla to Frome	$18,848
63	GILGAI Hall Street - Marsh to Church	$12,734
64	INVERELL Harland Street - Lang to Froude	$11,058
65	INVERELL Harland Street - Froude to Gordon	$11,439
66	INVERELL Harland Street - Gordon to Lewin	$11,674
67	INVERELL Harland Street - Lewin to Highway	$15,051
68	INVERELL Oliver Street - Lawrence to St Elmo Medical Centre	$7,896
69	INVERELL Hopper Street - Vernon to Jacaranda	$13,479
70	INVERELL Hopper Street - Jacaranda to Park	$4,304
71	INVERELL Bannockburn Road - School to Shirley	$17,020
72	INVERELL Shirley Street - Bannockburn to Lindsay	$16,441
73	INVERELL Shirley Street - Lindsay to Gilchrist	$24,180
74	INVERELL Lindsay Avenue - Shirley to Butler	$11,636
75	INVERELL Lindsay Avenue - Butler to Walking track entrance	$16,047
76	INVERELL Shirley Street - Bannockburn to Brown	$19,019
77	INVERELL Brown Street - High to Andrew	$13,432
78	INVERELL Brown Street - Urabatta to High	$13,481
79	INVERELL Urabatta Street - Bannockburn to Brown	$19,051
80	INVERELL Froude Street - Harland to Kuna	$44,645
81	INVERELL Kuna Avenue - Froude to Gordon	$9,738
82	INVERELL Gordon Street - Kuna to Park	$23,385
83	DELUNGRA Highway - Dumboy to Macintyre (north side)	$16,535
84	DELUNGRA Highway - Dumboy to Showgrounds	$18,694
85	DELUNGRA Highway - Macintyre to current path (south side)	$8,717
86	DELUNGRA Highway - Macintyre to Dumboy (south side)	$17,055
87	GILGAI Marsh Street - Hall to Old Stannifer	$17,286

Priority	Project Name	Estimate
88	INVERELL Lions Park - Past public toilet to link to Rosslyn	$9,367
89	INVERELL Rosslyn Street - Lions Park Link to Rosslyn Street	$15,819
90	INVERELL Highway & Rosslyn Street - Link to lions park	$16,592
91	INVERELL Highway - Rosslyn to Hindmarsh	$12,581
92	INVERELL May Street - Brae to Rotary Park	$32,916
93	INVERELL George Street - Oconnor to Whittingham	$23,147
94	INVERELL George Street - Whittingham to Daycare Centre	$18,049
95	INVERELL George Street - Daycare Centre to Hatcher	$17,680
96	INVERELL Wood Street - TAFE to Rivers	$16,328
97	INVERELL Lawrence Street - Granville to Henderson	$14,647
98	INVERELL Granville Street - Vivian to Lawrence	$23,799
99	INVERELL Granville Street - Lawrence to Mansfield	$6,543
100	INVERELL Mansfield Street - Granville to Henderson	$14,110
101	INVERELL Mansfield Street - Rivers to Ross	$9,019
102	INVERELL Mansfield Street - Oliver to Evans	$13,844
103	INVERELL Mansfield Street - Oliver to Byron	$13,049
104	INVERELL Oliver Street - St Elmo Medical Centre to Mansfield	$17,104
105	ASHFORD Duff Street - Inverell to Kneipp	$34,294
106	ASHFORD Kneipp Street - Duff to Martyn	$20,392
107	ASHFORD Martyn Street - Kneipp to Kneipp Ln	$7,588
108	GILGAI Bundarra Road - Bus Stop to Park	$31,014
109	INVERELL Clive Street - Bike path to Lookout	$7,746
110	INVERELL Short Street - Moore to Brewery	$48,853
111	INVERELL Brewery Street - Short to Sapphire	$10,256
112	INVERELL Brewery Street - Mather to Sapphire	$24,182
113	INVERELL Brewery Street - Highway to Mather	$11,325
114	INVERELL Macintyre Street - Aged Homes to Old Bundarra (w/o Culvert)	$68,170
115	INVERELL Macintyre Street - Aged Homes to Old Bundarra Culvert	$21,600
116	INVERELL Macintyre Street - Aged Homes to Raglan	$49,037
117	YETMAN Macintyre Street - River St to Simspon	$24,495
118	YETMAN Warialda Street - Simpson to Campbell	$31,182
119	YETMAN Warialda Street - River to Simspon	$25,959
120	INVERELL Sports Precinct - Under Bridge Path to Eucalypt drive	$36,221
121	INVERELL Eucalypt Drive - Entrance Gates to Canteen	$89,827
122	INVERELL Sports Precinct - Canteen to Mens Shed	$26,858
123	INVERELL Sports Precinct - Canteen to Netball	$130,126
124	DELUNGRA Wallangra Street - School to Macintyre	$11,484
125	DELUNGRA Wallangra Street - Macintyre to Dumboy	$17,027
126	DELUNGRA Dumboy Street - Wallangra to Burnett	$13,951
127	DELUNGRA Dumboy Street - Burnett to Highway	$14,080
128	DELUNGRA Macintyre Street - Highway to Railway	$16,972
129	ASHFORD Martyn Street - Albury to Bala	$13,778
130	YETMAN Campbell Street - Warialda to Macintyre	$13,631
131	GILGAI Park Street - Church to Wood	$13,077
132	INVERELL Sapphire Street - Brewery to Park	$18,778
133	INVERELL Macintyre Street - Raglan to Bundarra Widening	$67,650
134	INVERELL Ashford Road - Cemetery Link	$97,243
135	INVERELL Bundarra Road - Pioneer Village Link	$71,504
136	ASHFORD Frome Street - Duff to David	$46,171
137	YETMAN Macintyre Street - Campbell to Simspon	$29,857
138	GIGLAI Wood Street - Old Stannifer to Park	$24,698
139	GILGAI Park Street - Bundarra to Church	$14,203

Table 25 : Identified Forward Capital Works

Rationalising the Network and Retiring Old Assets

Rationalising assets and services can reduce costs, generate operational savings for reinvestment, and allow the delivery of more integrated, customer-focused services. It enables Council to improve our most important assets for the future, and help fund the work through reducing the cost to provide inefficient or unnecessary assets.

At present one of Council's long term goals is to increase the number of people walking and riding in the shire and its current assets along with a significant expansion plan are key to realising this. As such, no rationalisation of the network is anticipated in the foreseeable future.

Council will continue to assess how well its path network is serving the community by carrying out the regular inspection program and monitoring the level of service performance measures.

Managing the Risks

An assessment of risks associated with service delivery from infrastructure assets has identified critical risks to Council. 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 26

For more information on the assessment process refer to Council's Infrastructure Risk Management Plan.

Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan
Assets in floodplain	Greater intensity rainfall leads to more frequent and larger riverine flooding events	H	Assess flood prone areas for presence of critical assets and include in future planned upgrade programs
Constructed Paths	Pavement ages past its useful life	H	Provide adequate renewal funding budget
All path assets	Council fails to meet its target to increase number of people walking and cycling in the shire	H	Investigate funding sources for path network expansion and provide funding in LTFP
All path assets	Council fails to meet its obligations under disability legislation	H	Audit disability access as part of development of Disability Action Plan. Include identified problems in expansion and upgrade plan.
Constructed Paths	Trip, slip and fall hazards	H	Manage within existing controls. Continue regular inspections and maintenance response.

Table 26 : Critical Risks

Asset Management Practices

Finance & Database

Council uses Technology One Enterprise Suite as its primary database software. The selected modules form a robust financial and works management system.

Geographical Information Systems

MapInfo Professional is used to store location based asset data. Data is stored in the MapInfo TAB format in GDA94 datum and accessed through the Exponare platform or directly from Technology One via integration.

Council is updating its guidelines for the management of its spatial data. These guidelines will inform the policies, procedures and processes that Council uses to manage its spatial data (See Improvement Plan Action 1.8).

Information Inputs

The key information flows into this asset management plan are:

- The asset register data on size, age, value, remaining life of the path network;
- 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.

Information Outputs

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,

These will impact the Long Term Financial Plan, Delivery Plan, Annual Budget and Operational Plans.

Procedures for the flow of information are heavily dependent upon the needs of the above mentioned plans. Specific requirements for information from this asset management plan will be defined during the process of updating council's other long term planning documents and will be included in future revisions (See Action 1.5 of Improvement Plan).

Plan Improvement & Monitoring

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

- The degree to which the required cash flows identified in this plan are incorporated into council's long term financial plan;
- The degree to which 4 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by this plan;
- Progress toward achieving the outcomes listed in the Improvement Plan

Monitoring and Review

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

Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 27.

Action ID	Action	Outcome	Responsibility	Due Date
1.1	Develop and implement Community Satisfaction Survey	Monitor performance of plan and gain insight into desired levels of service	Asset Management Coordinator	End 2016
1.2	Consult the community on the current levels of service and determine desired levels of service for inclusion in AM plan where necessary	Ensure plan is providing for community expectations. Provide targets for AM plan	Integrated Planning and Reporting Manager	End 2016
1.3	Update AMP to reflect adoption of Disability Access Inclusion Plan	Better integration between adopted council plans	Asset Management Coordinator	End 2017
1.4	Continue improvement of asset data and confirm asset locations in GIS system.	Improved inventory and spatial data for use in forward planning	Asset Management Coordinator	End 2017
1.5	Develop formalised procedures for information flows into and out of the asset management plan	Ensure relevant information is shared.	Asset Management Coordinator	End 2017
1.7	Develop formal capital evaluation process for allocation of funding.	Provide better information about life cycle costs for future works	Finance Manager	End 2016
1.8	Develop spatial data guidelines	Ensure location based information is accurate, relevant and up to date	GIS Officer	End 2016

Table 27 : Improvement Plan

Works Cited

ABS. (2012). 2011 Census of Population and Housing: Working Population Profile - Inverell (A) (LGA14200). Canberra, ACT, Australia.

Austroads. (2015). *National Cycling Participation Survey 2015: New South Wales.* Sydney: Austroads.

Department for Transport Energy and Infrastructure SA. (2008). *Guidelines for Disability Access in the Pedestrian Environment.* Adelaide: Government of South Australia.

Garnaut, R. (2008). *The Garnaut Climate Change Report.* Port Melbourne: Cambridge University Press.

Institute of Public Works Engineering Australasia. (2011). *International Infrastructure Management Manual* (International Edition 2011 ed.). Thames, New Zealand: Association of Local Government Engineering NZ Inc.

NSW Department of Planning and the Environment. (2014). New South Wales State and Local Government Area Population, Household and Dwelling Projections: 2014 Final. Sydney, NSW, Australia.

NSW Division of Local Government. (2013). *Integrated Planning and Reporting Guidelines for local governmenr in NSW.* Sydney: NSW Department of Premier & Cabinet.

Pugliese, A., & Lyons, L. (2010, August 6). *Australians' Views Shift on Climate Change*. Retrieved September 2015, 17, from Gallup News: http://www.gallup.com/poll/141782/australians-views-shift-climate-change.aspx

SKM and PWC. (2011). *Benefits of inclusion of active transport in infrastructure projects.* Brisbane: QLD Government Department of Transport and Main Roads.

Slinger, D., & Tenison, K. (2007). *Salinity Glove Box Guide: NSW Murray & Murrumbidgee Catchments.* Wagga Wagga: NSW Department of Primary Industries.

Standards Australia. (2009). *Risk management—Principles and Guidelines (AS/NZS ISO 31000:2009).* Sydney: Author.

Appendix A

Asset Condition Inspection Manual

Appendix B

Project Proposal Templates