

Berrigan Shire Council



Footpaths

# ASSET MANAGEMENT PLAN



Version A

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The Institute of Public Works Engineering Australia.

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## **ABBREVIATIONS**

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

## GLOSSARY

### **Annual service cost (ASC)**

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 operating, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

### **Asset class**

Grouping of assets of a similar nature and use in an entity's operations (AASB 166.37).

### **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**

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.

### **Assets**

Future economic benefits controlled by the entity as a result of past transactions or other past events (AAS27.12).

Property, plant and equipment including infrastructure and other assets (such as furniture and fittings) with benefits expected to last more than 12 month.

### **Average annual asset consumption (AAAC)\***

The amount of a local government's asset base consumed during a year. This may be calculated by dividing the Depreciable Amount (DA) by the Useful Life and totalled for each and every asset OR by dividing the Fair Value (Depreciated Replacement Cost) by the Remaining Life and totalled for each and every asset in an asset category or class.

### **Brownfield asset values\*\***

Asset (re)valuation values based on the cost to replace the asset including demolition and restoration costs.

### **Capital expansion expenditure**

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

### **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 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

### **Capital new expenditure**

Expenditure which creates a new asset providing a new service to the community that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operating and maintenance expenditure.

### **Capital renewal expenditure**

Expenditure on an existing asset, which returns the service potential or the life 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 has no impact on revenue, but may reduce future operating and maintenance expenditure if completed at the optimum time, eg. 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. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

### **Capital upgrade expenditure**

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 operating and maintenance expenditure in the future because of the increase in the council's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility. Where capital projects involve a combination of renewal, expansion and/or upgrade

expenditures, the total project cost needs to be allocated accordingly.

#### **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 class definition

#### **Component**

An individual part of an asset which contributes to the composition of the whole and can be separated from or attached to an asset or a system.

#### **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, plus 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.

#### **Current replacement cost "As New" (CRC)**

The current cost of replacing the original service potential of an existing asset, with a similar modern equivalent asset, i.e. the total cost of replacing an existing asset with an as NEW or similar asset expressed in current dollar values.

#### **Cyclic 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.

#### **Depreciable amount**

The cost of an asset, or other amount substituted for its cost, less its residual value (AASB 116.6)

#### **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 arms length transaction.

#### **Greenfield asset values \*\***

Asset (re)valuation values based on the cost to initially acquire the asset.

#### **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 of the entity or of another entity that contribute to meeting the public's need for access to major economic and social facilities and services, eg. 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 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 (AASB 140.5)

#### **Level of service**

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

### **Life Cycle Cost \*\***

The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual 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 maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to Life Cycle Expenditure to give an initial indicator of life cycle sustainability.

### **Loans / borrowings**

Loans result in funds being received which are then repaid over a period of time with interest (an additional cost). Their primary benefit is in 'spreading the burden' of capital expenditure over time. Although loans enable works to be completed sooner, they are only ultimately cost effective where the capital works funded (generally renewals) result in operating and maintenance cost savings, which are greater than the cost of the loan (interest and charges).

### **Maintenance and renewal gap**

Difference between estimated budgets and projected expenditures for maintenance and renewal of assets, totalled over a defined time (eg 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 (eg 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**

An item is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial report. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances.

### **Modern equivalent asset.**

A structure similar to an existing structure and having the equivalent productive capacity, which could be built using modern materials, techniques and design. Replacement cost is the basis used to estimate the cost of constructing a modern equivalent asset.

### **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, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

### **Operating expenditure**

Recurrent expenditure, which is continuously required excluding maintenance and depreciation, eg power, fuel, staff, plant equipment, on-costs and overheads.

### **Pavement management system**

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

### **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.

### **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).

### **Reactive maintenance**

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

### **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 operating and maintenance expenditure.

**Recurrent funding**

Funding to pay for recurrent expenditure.

**Rehabilitation**

See capital renewal expenditure definition above.

**Remaining life**

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

**Renewal**

See capital renewal expenditure definition above.

**Residual value**

The net amount which an entity expects to obtain for an asset at the end of its useful life after deducting the expected costs of disposal.

**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, eg 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 capacity to provide goods and services in accordance with the entity's objectives, whether those objectives are the generation of net cash inflows or the provision of goods and services of a particular volume and quantity to the beneficiaries thereof.

**Service potential remaining\***

A measure of the remaining life of assets expressed as a percentage of economic life. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (DRC/DA).

**Strategic Management Plan (SA)\*\***

Documents Council objectives for a specified period (3-5 yrs), the principle activities to achieve the objectives, the means by which that will be carried out, estimated income and expenditure, measures to assess performance and how rating policy relates to the Council's objectives and activities.

**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. It is the same as the economic life.

**Value in Use**

The present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. 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 new cash flows, where if deprived of the asset its future economic benefits would be replaced.

Source: DVC 2006, Glossary

Note: Items shown \* modified to use DA instead of CRC  
Additional glossary items shown \*\*

# 1. EXECUTIVE SUMMARY

## What Council Provides

Council provides a footpath network including shared paths in partnership with Roads Traffic Authority of New South Wales to enable pedestrians, cyclist and persons with a disability free movement throughout the four townships of Berrigan shire: Barooga, Berrigan, Finley and Tocumwal

There are six different types of footpaths and shared paths included in this plan: Asphalt Footpath, Asphalted Concrete Footpath, Concrete Footpath, Patterned Concrete Footpath, Gravel Footpath and Paved footpath as well as a swing pedestrian bridge. This plan only covers footpaths and shared paths in road reserve areas and does not include paths in parks and gardens

## What does it Cost?

There are two key indicators of cost to provide the pedestrian service.

- The life cycle cost being the average cost over the life cycle of the asset, and
- The total maintenance and capital renewal expenditure required to deliver existing service levels in the next 10 years covered by Council's long term financial plan.

The life cycle cost to provide the pedestrian service is estimated at \$68,175.44 per annum. Council's planned life cycle expenditure for year 1 of the asset management plan is \$66,954.53 which gives a life cycle sustainability index of 0.98 .

The total maintenance and capital renewal expenditure required to provide the pedestrian service the in the next 10 years is estimated at \$153,920.00. This is an average of \$60,094.58 per annum.

Council's maintenance and capital renewal expenditure for year 1 of the asset management plan of \$22,000.00 giving a 10 year sustainability index of 0.37.

## Plans for the Future

Council plans to operate and maintain the footpath network to achieve the following strategic objectives.

1. Ensure the footpath and shared path network is maintained at a safe and functional standard as set out in this asset management plan.
2. Continue to improve the network to meet community requirements.

3. Maintain a balance between expanding the network and maintaining existing network to current service levels

## Measuring our Performance

### Quality

Footpath assets will be maintained in a reasonably usable condition. Defects found or reported that are outside our service standard will be repaired. See our maintenance response service levels for details of defect prioritisation and response time.

### Function

Our intent is that an appropriate footpath network is maintained in partnership with other levels of government and stakeholders to provide safe and functional pedestrian and cycling transport facilities for the Berrigan shire community and other users.

Footpath asset attributes will be maintained at a safe level and associated signage and equipment be provided as needed to ensure public safety. We need to ensure key functional objectives are met:

- Maintain the existing network in a safe and functional state
- Improve the network where possible to achieve adopted service levels
- Expand the network to increase pedestrian and cycling traffic throughout the four towns of Berrigan shire.

The main functional consequence of the footpath network is maintained at a safe and functional standard as set out in this asset management plan is the continued provision of adequate pedestrian service to the residents of the Berrigan Shire and other users as a level acceptable to the community and other stakeholders.

### Safety

We inspect all footpaths regularly and prioritise and repair defects in accordance with our inspection schedule to ensure they are safe.

## The Next Steps

This actions resulting from this asset management plan are:

- Complete the Improvement Plan as set out in Table 8.2.
- Make provisions for the completion of the Capital Works Program attached as Appendix C.
- Carry out community consultation.
- Update development standards

## 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 required to provide the required levels of service.

The asset management plan is to be read with the following associated planning documents:

- Berrigan Shire Council - Management Plan
- Berrigan Shire Council - Standard Operating Procedure for Maintenance and Repair of Constructed Footpaths (2006)
- Berrigan Shire Council - Asset Management Policy (Adopted October 2009)
- Berrigan Shire Council - Constructed Footpath Risk Management Policy (Adopted June 2001)
- Berrigan Shire Council - Barooga Pedestrian Access and Mobility Plan (February 2006)
- Berrigan Shire Council - Berrigan Pedestrian Access and Mobility Plan (February 2006)
- Berrigan Shire Council - Finley Pedestrian Access and Mobility Plan (February 2006)
- Berrigan Shire Council - Tocumwal Pedestrian Access and Mobility Plan (February 2006)
- Berrigan Shire Council - Social and Community Plan (2008)
- Berrigan Shire Council - State of Environment Report (2008)
- Berrigan Shire Council – Local Environmental Plan (1992)
- Berrigan Shire Council – Subdivision Code (Adopted 17-5-94)
- Berrigan Shire Council – Development Contributions Plan (Adopted 19-01-2005)

This asset management plan covers the following infrastructure assets:

Footpaths, Shared paths and Pedestrian bridges within the Berrigan Shire Area excluding all paths within parks and gardens.

**Table 2.1. Assets covered by this Plan**

Asset category	Dimension	Replacement Value (\$M)
Asphalt footpath	19524.31 m <sup>2</sup>	\$821.52
Asphalted Concrete Footpath	448.68 m <sup>2</sup>	\$44.87
Concrete Footpath	20291.41 m <sup>2</sup>	\$1,623.65
Patterned Concrete Footpath	4674.92 m <sup>2</sup>	\$467.49
Gravel Footpath	4328.72 m <sup>2</sup>	\$34.63
Paved Footpath	443.18 m <sup>2</sup>	\$44.32
Swing Bridge	63.00 m <sup>2</sup>	\$47.25
<b>TOTAL</b>	<b>49774.21 m<sup>2</sup></b>	<b>\$3,036.48</b>

Key stakeholders in the preparation and implementation of this asset management plan are:

State Local Member	Represents community interests
Road & Traffic Authority of NSW	Provides funding to Berrigan Shire Council to expand the footpath and shared path network and increase access to pedestrian services
Berrigan Shire Council	Meet expectations of the customers with respect to level of service
The General Public	Path network that provides reliable and safe pedestrian and cyclist traffic.
Local businesses	Pedestrian and cyclist network adequate for customers to access businesses

## 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.<sup>1</sup>

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

Council's vision is:

**The vision of the Berrigan Shire Council is to create a sustainable, healthy and vibrant community that takes advantage of economic opportunities, promotes innovation and diversification, realises the potential of existing businesses and welcomes compatible strategic investment into the Shire.**

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<sup>1</sup> IIMM 2006 Sec 1.1.3, p 1.3

In expanding the council vision to the 30 year planning horizon for the provision of footpaths and shared paths, the following expectations have been identified

- Government policy provides regional and local leadership.
- Council will shape Government policy to better serve the community.
- A sense of belonging and pride will come from a partnership between Council and the community.
- Quality of life means a clean, safe environment with high social and community values
- Infrastructure will be properly planned and maintained.
- Economic development.
- Quality and value for money demonstrated by market testing and benchmarking

### 2.3 Plan Framework

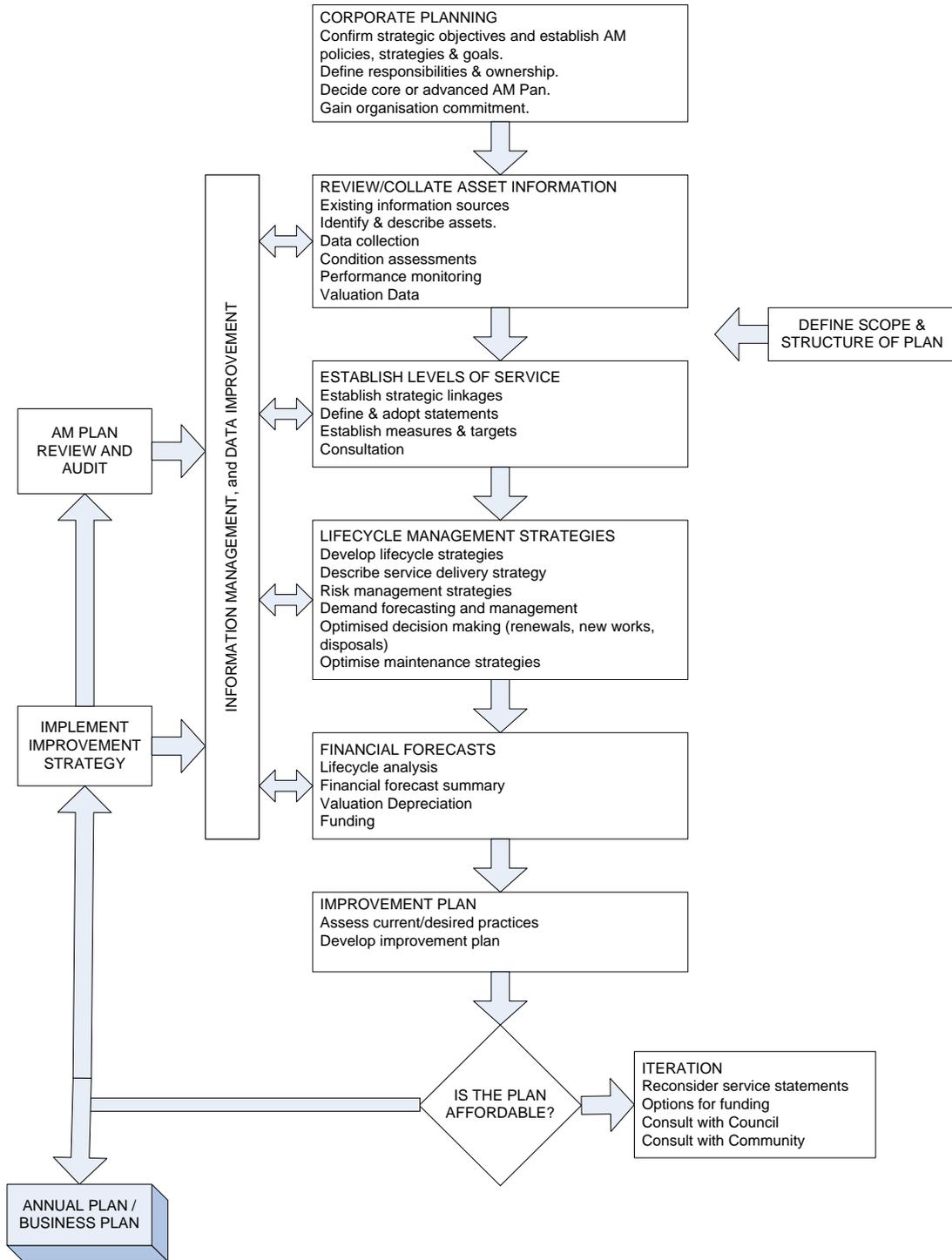
Key elements of the plan are

- 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 Council 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 Council's objectives.
- Asset management improvement plan

A road map for preparing an asset management plan is shown below.

**Road Map for preparing an Asset Management Plan**

Source: IIMM Fig 1.5.1, p 1.11



## 2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan in accordance with the International Infrastructure Management Manual. 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.

Future revisions of this asset management plan will move towards 'advanced' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.

## 3. LEVELS OF SERVICE

### 3.1 Customer Research and Expectations

Council has not carried out any research on customer expectations. Levels of service for previous plans have been determined from consultation with internal stakeholders ie. Council Staff. A formal system of complaints/requests is maintained with proforma sheets being distributed to all property owners with their annual rates notices. This system has not identified any obvious short falls in the current levels of service. A more formal research program to determine customer expectations will be investigated for future updates of the asset management plan

### 3.2 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. These include:

**Table 3.2. Legislative Requirements**

Legislation	Requirement
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.
Environmental Planning and Assessment Act 1979 & Environmental Planning and Assessment Amendment Act 2008	<ul style="list-style-type: none"> <li>• Requirement for Local Environmental Plans and Development Control Plans.</li> <li>• Provides for Council control of development of towns and approval of infrastructure expansion.</li> </ul>
Catchment Management Authorities Act 2003	<ul style="list-style-type: none"> <li>• Requirement for ongoing management plan.</li> <li>• Promotes the coordination of activities within catchment areas.</li> <li>• Under the provision of this Act, Local Catchment Management Authorities oversee this process in the region.</li> </ul>
Soil Conservation Act 1938	<ul style="list-style-type: none"> <li>• Preservation of water course environment.</li> </ul>
Occupational health and Safety Act 2000	<ul style="list-style-type: none"> <li>• Impacts all operations in relation to safety of workers and the public.</li> </ul>

	<ul style="list-style-type: none"> <li>• Council's responsibility to ensure health, safety and welfare of employees and others at places of work.</li> </ul>
Roads Act 1993	<ul style="list-style-type: none"> <li>• Provides authority to Council for administration and development of roads and streets</li> </ul>
Road Transport Act 2005	<ul style="list-style-type: none"> <li>• Sets requirements for vehicles and operators using roads.</li> </ul>
Transport Administration Act 1988	<ul style="list-style-type: none"> <li>• Provides authority to Roads and Traffic Authority for management of roads.</li> </ul>
Australian Road Rules	<ul style="list-style-type: none"> <li>• Sets requirements for vehicles and operators using roads.</li> </ul>
Disability Discrimination Act 1992	<ul style="list-style-type: none"> <li>• Set requirements for access for persons with disabilities</li> </ul>

### 3.3 Current Levels of Service

Council has defined service levels in two terms.

Community Levels of Service relate to how the community receives the service in terms of safety, quality, quantity, reliability, responsiveness, cost/efficiency and legislative compliance.

Supporting the community service levels are operational or technical measures of performance developed to ensure that the minimum community levels of service are met. These technical measures relate to service criteria such as:

**Service Criteria**

- Quality
- Quantity
- Availability
- Safety

**Technical measures may relate to**

- Smoothness of roads
- Area of parks per resident
- Distance from a dwelling to a sealed road
- Number of injury accidents

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

**Table 3.3. Current Service Levels**

Key Performance Measure	Level of Service	Performance Measure Process	Performance Target	Current Performance
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Surface (Uneven, Slippery or Trip Hazard) Lighting	Customer Requests	<10	9
Function	Meet user requirements for <ul style="list-style-type: none"> <li>• Accessibility</li> <li>• Location</li> </ul>	Customer Requests	<2	2
Safety	Safe accessible network	Customer Requests	<2	0
<b>TECHNICAL LEVELS OF SERVICE</b>				
Safety	Trip Hazard	No. Trip hazards >20mm	<2	1
	Uneven surface	No. Extreme Uneven surface	<2	1
	Slippery surface	No. Extreme Slipper surface	<2	0

### 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.

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	8317 (2006)	10104 (2031)	Increase in pedestrian and cyclist traffic. Increase in footpath and shared path network due to increase demand.
Demographics	Average age of population greater than state average	Will become even greater	An aging population will increase use of network by people using mobility aides and others with disabilities.

### 4.2 Changes in Technology

Technology changes are forecast to affect the delivery of services covered by this plan in the following areas.

**Table 4.2. Changes in Technology and Forecast effect on Service Delivery**

Technology Change	Effect on Service Delivery
Changes in construction techniques, available materials and improvements to plant and equipment will evolve	These changes will be assessed on merit and applied where efficiencies can be achieved in construction and maintenance practices.
Changes in mobility aides	These changes will increase demands on path network.

### 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. Each township in Berrigan Shire has a Pedestrian and Access Mobility Plan which identifies pedestrian routes needed as population increases and land use develops and changes. These documents are the main instrument used to determine new works

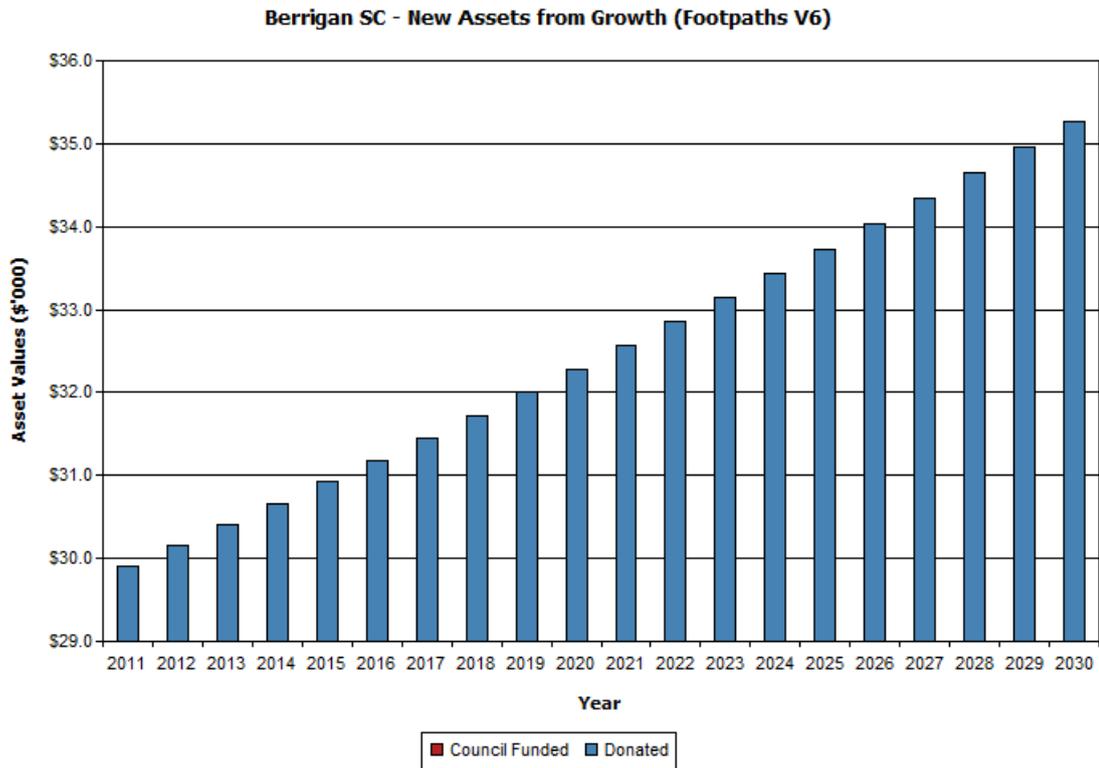
**Table 4.3. Demand Management Plan Summary**

Service Activity	Demand Management Plan
Footpath maintenance	Routine inspection and repairs carried out in accordance with Standard Operating Procedure for Maintenance and repairs of constructed Footpaths
Capital works	Schedule long term capital works plan in conjunction with each towns Pedestrian and mobility plan

**4.4 New Assets from Growth**

The new assets required to meet growth will be acquired from land developments and constructed by Council. The new asset values are summarised in Fig 1.

**Fig 1. New Assets from Growth**



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 operating and maintenance costs. The asset management plan has included development contributions for footpaths in new developments. With an aging population causing an increase in use of scooters and mobility aids, there will be an increased demand for footpaths particularly in residential areas. Fig 1 assumes there will be a cost to developers to either fund or construct new footpaths with the new development. The assumption is 1.2m wide footpath on one side of street for each new development.

## 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

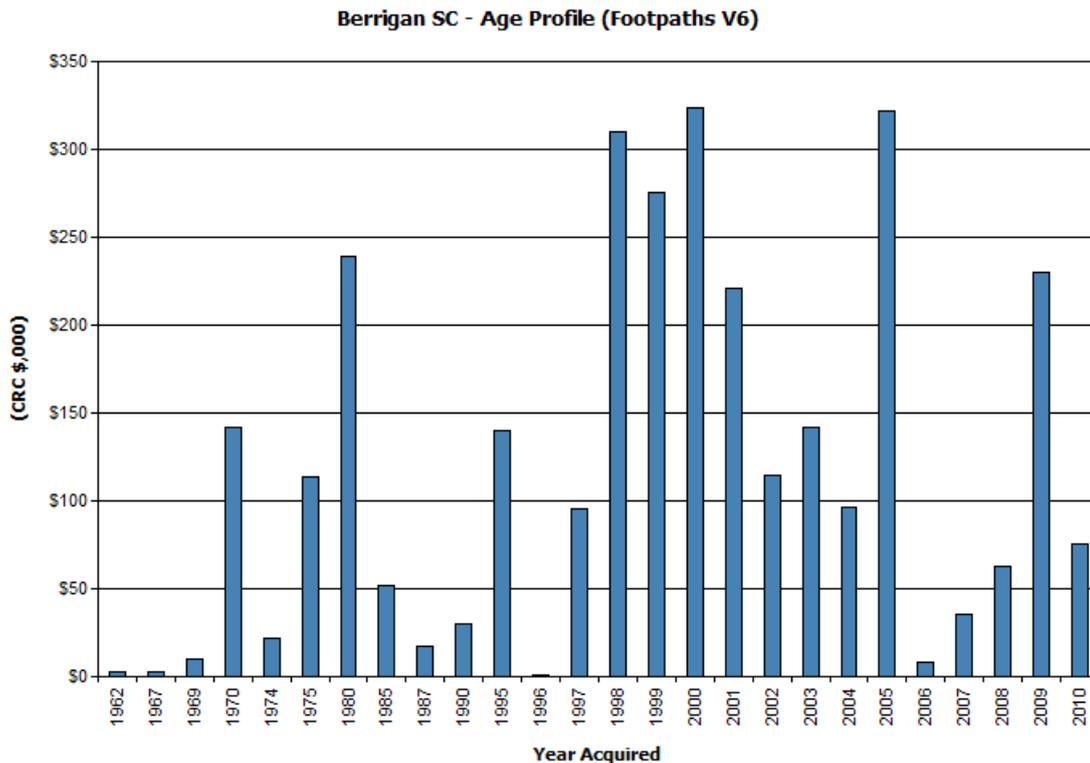
#### 5.1.1 Physical parameters

The assets covered by this asset management plan are shown below.

Asphalt footpath	19524.31 m <sup>2</sup>
Asphalted Concrete Footpath	448.68 m <sup>2</sup>
Concrete Footpath	20291.41 m <sup>2</sup>
Patterned Concrete Footpath	4674.92 m <sup>2</sup>
Gravel Footpath	4328.72 m <sup>2</sup>
Paved Footpath	443.18 m <sup>2</sup>
Swing Bridge	63.00 m <sup>2</sup>

The age profile of Council's assets is shown below.

**Fig 2. Asset Age Profile**



The age profile includes assumed construction date of older assets and the actual construction date for new assets that Council know when an asset was constructed.

Plans of the Footpath network are show in Appendix A

#### 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.

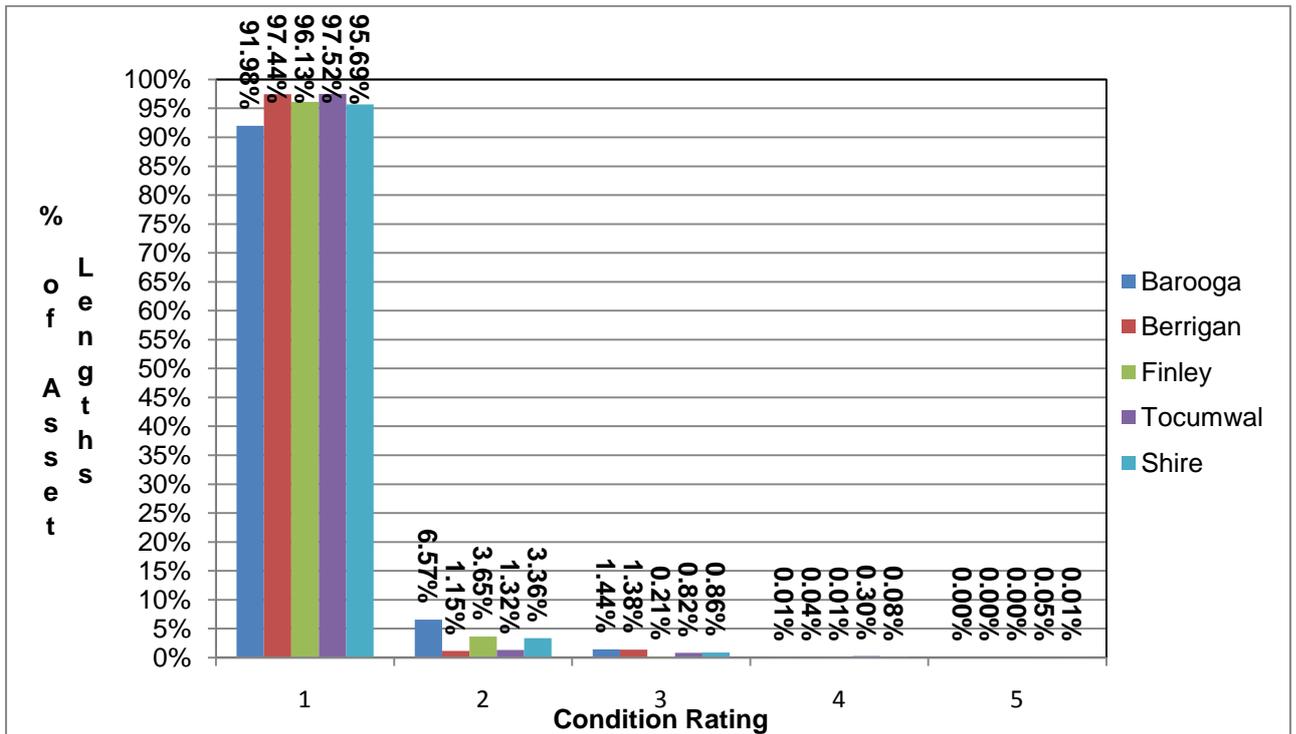
**Table 5.1.2. Known Service Performance Deficiencies**

Location	Service Deficiency
Ramps, paths	Councils footpaths while horizontally and vertically comply with Disability Discrimination Act standards, there are few tactile ground surface indicators installed.

5.1.3 Asset condition

The condition profile of Council’s assets is shown below.

**Fig 3. Asset Condition Profile**



Condition is measured using a 1 – 5 rating system.<sup>2</sup>

Rating	Description of Condition
1	Excellent condition: Only planned maintenance required.
2	Very good: Minor maintenance required plus planned maintenance.
3	Good: Significant maintenance required.
4	Average: Significant renewal/upgrade required.
5	Poor: Unserviceable.

The condition rating for each asset was done by visual inspection by the council staff in November and December of 2010. The percentage is a percentage of length for each township. A more accurate measure would be area but the method used gives a good indication of the quality of footpath assets. With 85% of footpath assets constructed since 1980 and having a long base life, the condition of footpath assets should be and is very good.

<sup>2</sup> IIMM 2006, Appendix B, p B:1-3 ('cyclic' modified to 'planned')

#### 5.1.4 Asset valuations

The value of assets as at 30<sup>th</sup> of June 2010 covered by this asset management plan is summarised below. Assets were last revalued at 30<sup>th</sup> of June 2010. Assets are valued at greenfield rates.

Current Replacement Cost	\$3,083,731.92
Depreciable Amount	\$3,083,731.92
Depreciated Replacement Cost	\$2,394,239.98
Annual Depreciation Expense	\$52,943.53

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

Asset Consumption	1.72%
Asset renewal	0.32%
Annual Upgrade/expansion	3.48%

#### 5.2 Risk Management Plan

An assessment of risks<sup>3</sup> 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 5.2.

**Table 5.2. Critical Risks and Treatment Plans**

Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan
Path	Trip / Fall	H	Increase inspections and update procedures

#### 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 cyclic 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.

Cyclic 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.

<sup>3</sup> Berrigan Shire Council 'Core' Infrastructure Risk Management Plan – Footpaths & Shared Paths

Maintenance expenditure trends are shown in Table 5.3.1

**Table 5.3.1. Maintenance Expenditure Trends**

Year	Maintenance Expenditure		
	Reactive	Planned	Cyclic
2007/08	\$21,532.92	\$2,691.61	\$2,691.61
2008/09	\$17,304.41	\$2,163.05	\$2,163.05
2009/10	\$14,369.07	\$1,796.13	\$1,796.13

Planned maintenance work is 10% of total maintenance expenditure.

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

Reactive maintenance is carried out in accordance with response levels of service detailed in Appendix B.

5.3.2 Standards and specifications

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

Australian Standard AS/NZ 4360:1995

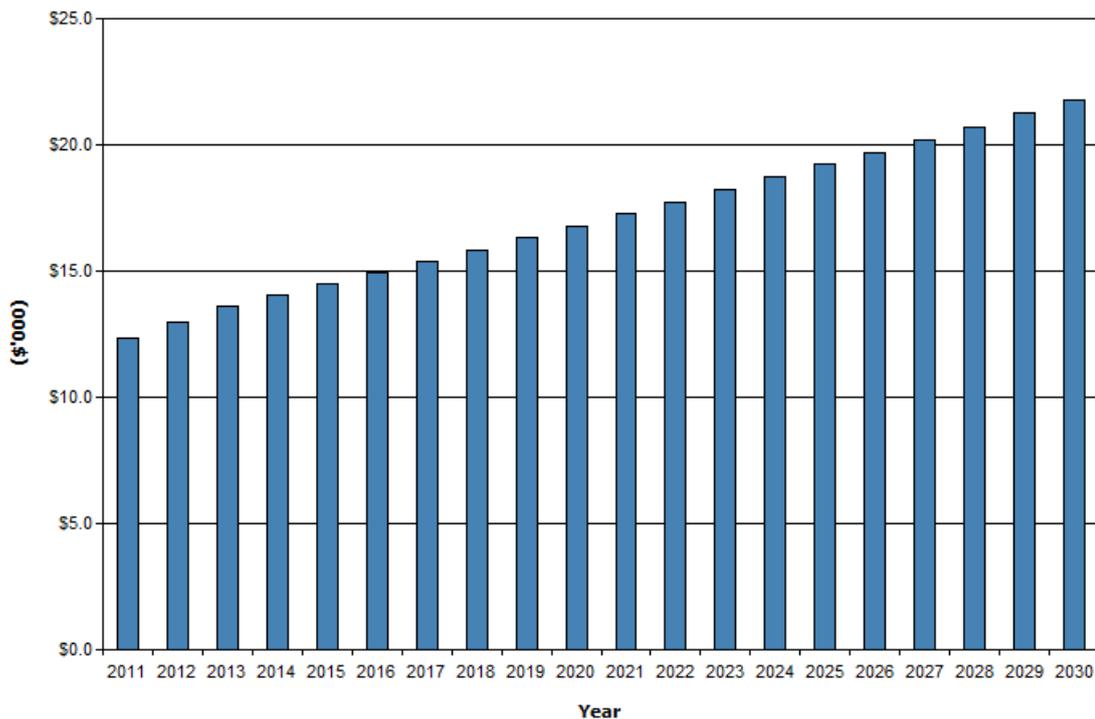
NAASRA Guide to engineering Traffic Practice, Part 3

5.3.3 Summary of future maintenance expenditures

Future maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Fig 4. Note that all costs are shown in current 2010 Financial year dollar values.

**Fig 4. Planned Maintenance Expenditure**

**Berrigan SC - Planned Maintenance Expenditure (Footpaths V6)**



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

Maintenance is funded from Council's 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 estimates of remaining life obtained from the asset register worksheets on the 'Planned Expenditure template'. Candidate proposals are inspected to verify accuracy of remaining life estimate and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

**Table 5.4.1 Renewal Priority Ranking Criteria**

Criteria	Weighting
Safety	30%
Condition Rating	25%
Hierarchy	25%
Other Technical	20%
Total	100%

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 rubberised cement patching.

##### 5.4.2 Renewal standards

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

Australian Standard AS/NZ 4360.1995

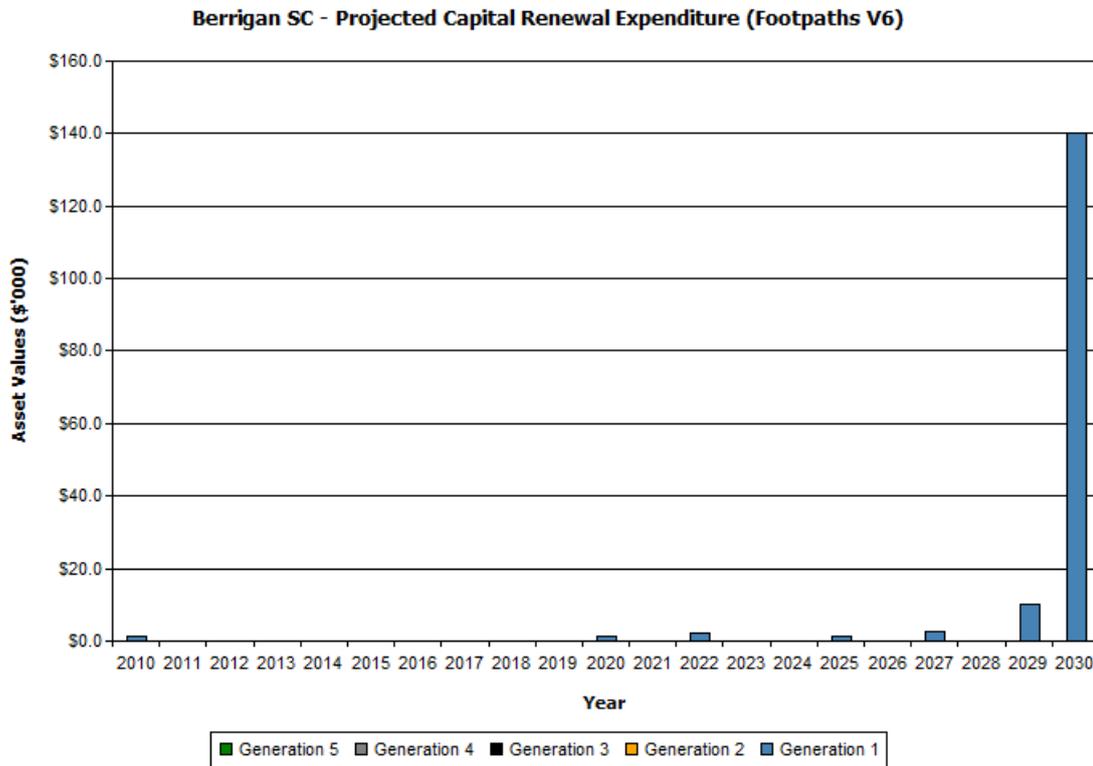
NAASRA Guides to Traffic engineering Practice PT 3

##### 5.4.3 Summary of future renewal expenditure

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Fig 5. Note that all costs are shown in current 2010 year dollar values.

The projected capital renewal program is shown in Appendix B.

**Fig 5. Projected Capital Renewal Expenditure**



With assets older than 1996, an assumed construction date has been used. Assets have been included in 5 year blocks causing the renewal graph to be skewed. Using asset condition to refine useful and remaining life will smooth Fig 5. This will need to be done when the asset management plan is reviewed.

Deferred renewal, ie 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 Council's capital works program 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 renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed below.

**Table 5.5.1 New Assets Priority Ranking Criteria**

Criteria	Weighting
Works creating better connections between key generators and attractors	8%
Route Priority level	32%
Improvement of safety of crossing points	15%
Improvements able to deliver multiple benefits	15%
Visual inspection of patterns of use	15%
Improvement delivering benefits to seniors and juniors	15%

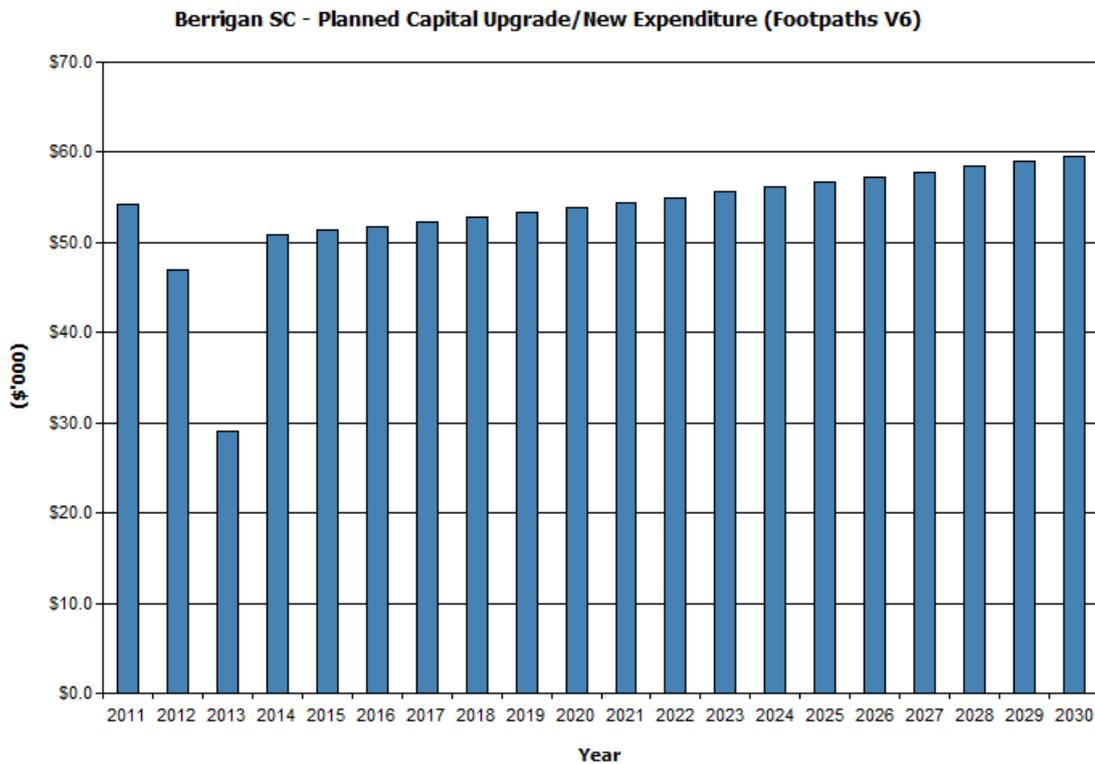
5.5.2 Standards and specifications

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 future upgrade/new assets expenditure

Planned upgrade/new asset expenditures are summarised in Fig 6. The planned upgrade/new capital works program is shown in Appendix C. All costs are shown in current 2010 year dollar values.

**Fig 6. Planned Capital Upgrade/New Asset Expenditure**



New assets and services are to be funded from Council's 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. There have been no assets identified for possible decommissioning or disposal at this time.

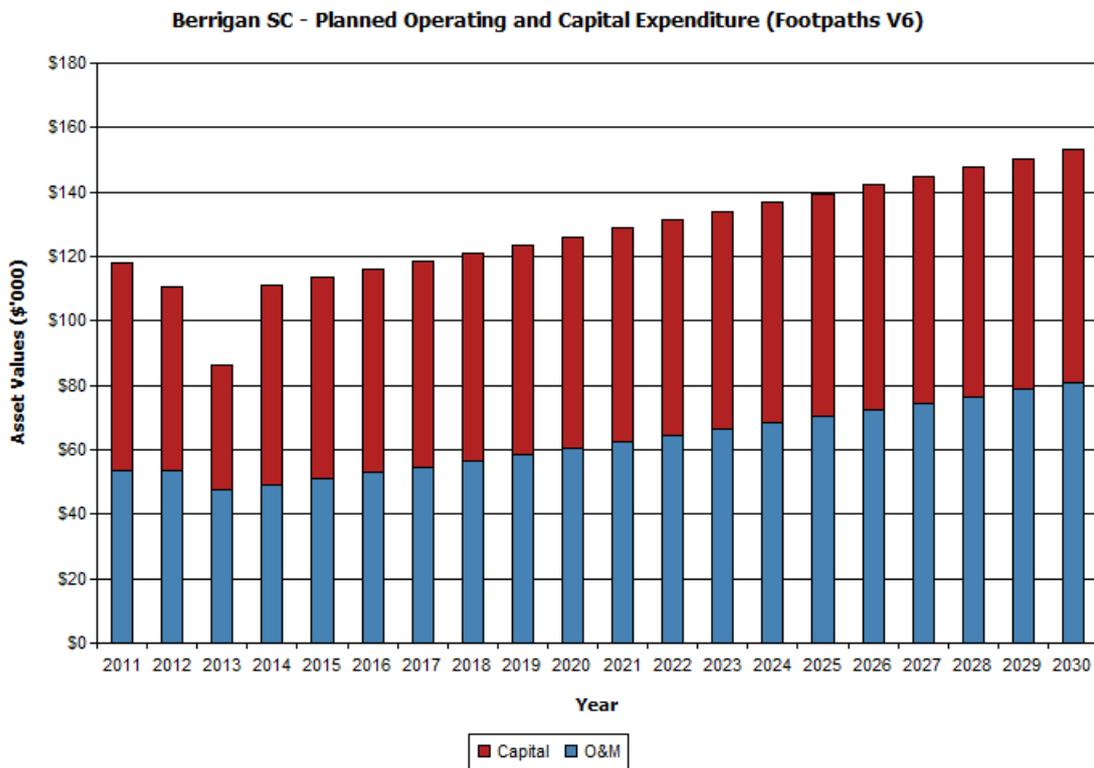
## 6. FINANCIAL SUMMARY

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 Fig 7 for planned operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets).

**Fig 7. Planned Operating and Capital Expenditure**



Note that all costs are shown in current 2010 year dollar values.

#### 6.1.1 Sustainability of service delivery

There are two 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 and medium term costs over the 10 year financial planning period.

##### 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 maintenance and asset consumption (depreciation expense). The annual average life cycle cost for the services covered in this asset management plan is \$68,175.44.

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure at the start of the plan is \$22,000.00.

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets they are consuming each year. The purpose of this footpaths asset management plan is to identify levels of service that the community needs and can afford and develop the necessary long term financial plans to provide the service in a sustainable manner.

The life cycle gap for services covered by this asset management plan is **-\$38,916.00** per annum. The life cycle sustainability index is 0.98

Medium term – 10 year financial planning period

This asset management plan identifies the estimated maintenance and capital expenditures required to provide an agreed level of service to the community over a 20 year period for input into a 10 year financial plan and funding plan to provide the service in a sustainable manner.

This may be compared to existing or planned expenditures in the 20 year period to identify any gap. In a core asset management plan, a gap is generally due to increasing asset renewals.

Fig 8 shows the projected asset renewals in the 20 year planning period from the asset register. The projected asset renewals are compared to planned renewal expenditure in the capital works program and capital renewal expenditure in year 1 of the planning period as shown in Fig 8. Table 6.1.1 shows the annual and cumulative funding gap between projected and planned renewals.

**Fig 8. Projected and Planned Renewals and Current Renewal Expenditure**

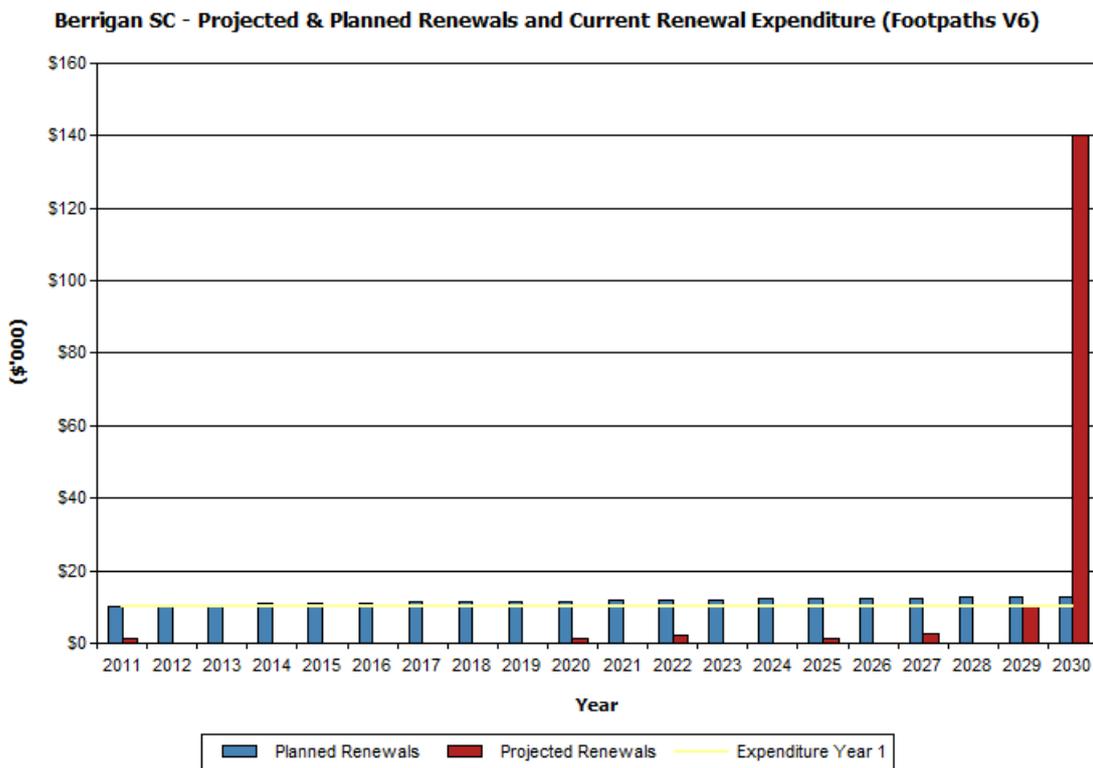


Table 6.1.1 shows the gap between projected and planned renewals.

**Table 6.1.1 Projected and Planned Renewals and Expenditure Gap**

Year	Projected Renewals	Planned Renewals	Renewal Funding Gap	Cumulative Gap
2011	\$1.30	\$10.00	-\$8.70	-\$8.70
2012	\$0.00	\$10.00	-\$10.00	-\$18.70
2013	\$0.00	\$10.00	-\$10.00	-\$28.70
2014	\$0.00	\$11.00	-\$11.00	-\$39.70
2015	\$0.00	\$11.11	-\$11.11	-\$50.81
2016	\$0.00	\$11.22	-\$11.22	-\$62.03
2017	\$0.00	\$11.33	-\$11.33	-\$73.37
2018	\$0.00	\$11.45	-\$11.45	-\$84.81
2019	\$0.00	\$11.56	-\$11.56	-\$96.37
2020	\$1.32	\$11.68	-\$10.36	-\$106.73
2021	\$0.00	\$11.79	-\$11.79	-\$118.53
2022	\$2.31	\$11.91	-\$9.60	-\$128.13
2023	\$0.00	\$12.03	-\$12.03	-\$140.16
2024	\$0.00	\$12.15	-\$12.15	-\$152.31
2025	\$1.40	\$12.27	-\$10.87	-\$163.18
2026	\$0.00	\$12.40	-\$12.40	-\$175.57
2027	\$2.52	\$12.52	-\$10.00	-\$185.57
2028	\$0.00	\$12.64	-\$12.64	-\$198.21
2029	\$10.17	\$12.77	-\$2.60	-\$200.81
2030	\$140.32	\$12.90	\$127.43	-\$73.39

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.

Council will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services. The strategy will have the effect of smoothing the peaks of resources required for renewal of footpath and shared path assets.

Council's long term financial plan covers the first 10 years of the 20 year planning period. The total maintenance and capital renewal expenditure required over the 10 years is \$153,920.00.

This is an average expenditure of \$15,392.00. Estimated maintenance and capital renewal expenditure in year 1 is \$22,000.00. The 10 year sustainability index is 1.43

## 6.2 Funding Strategy

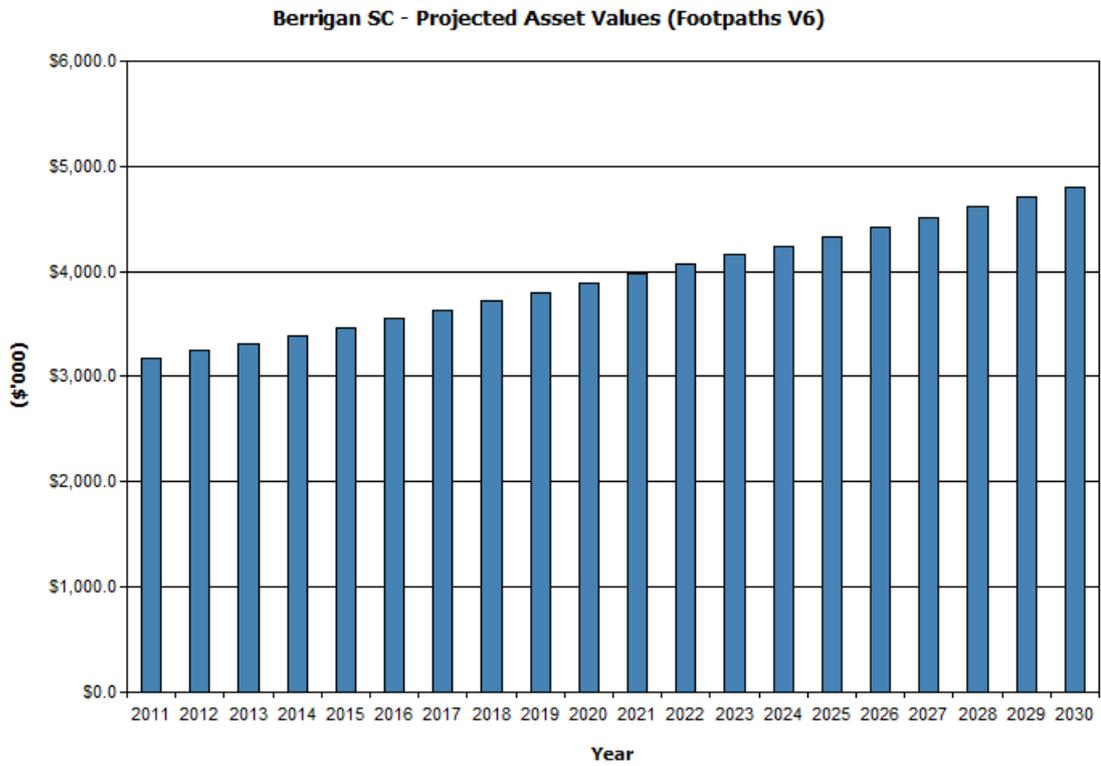
Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets. The funding strategy is detailed in the Council's 10 year long term financial plan.

Achieving the financial strategy will require the continuation of funding sources through the Roads and Traffic authority Pamps program and half cost schemes as well as requiring developments to either build footpaths in new subdivisions or contribute to the cost of footpath construction

## 6.3 Valuation Forecasts

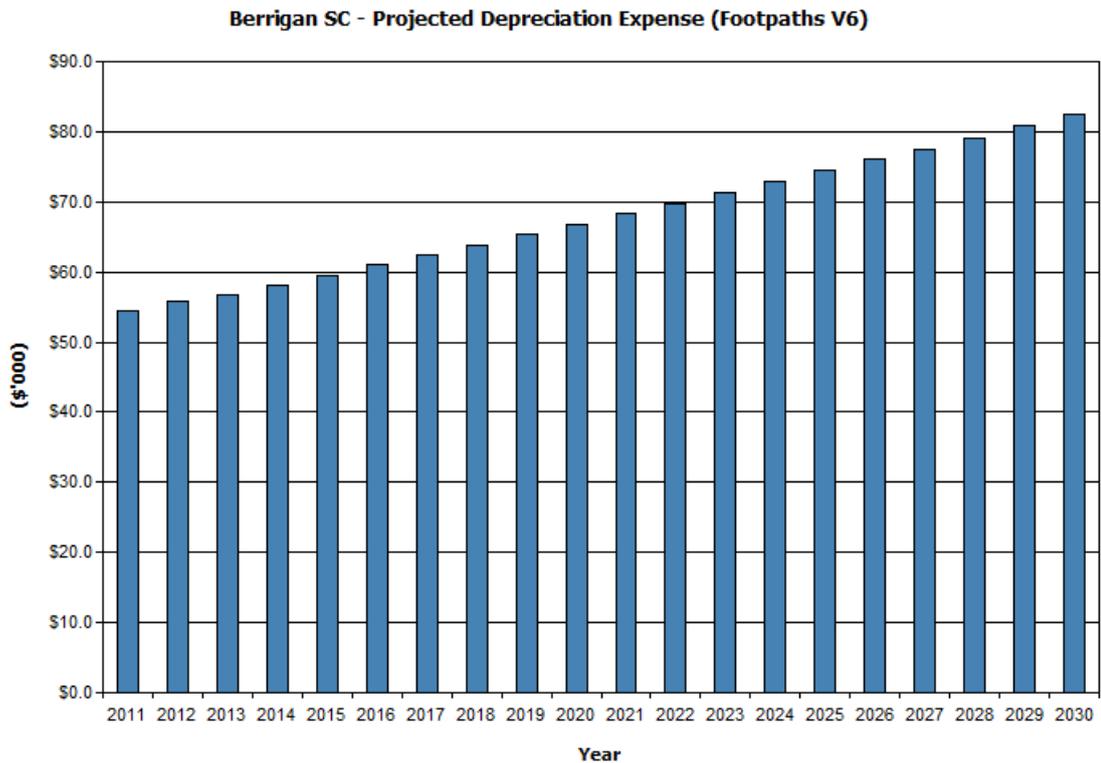
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Fig 9 shows the projected replacement cost asset values over the planning period in current 2010 year dollar values.

**Fig 9. Projected Asset Values**



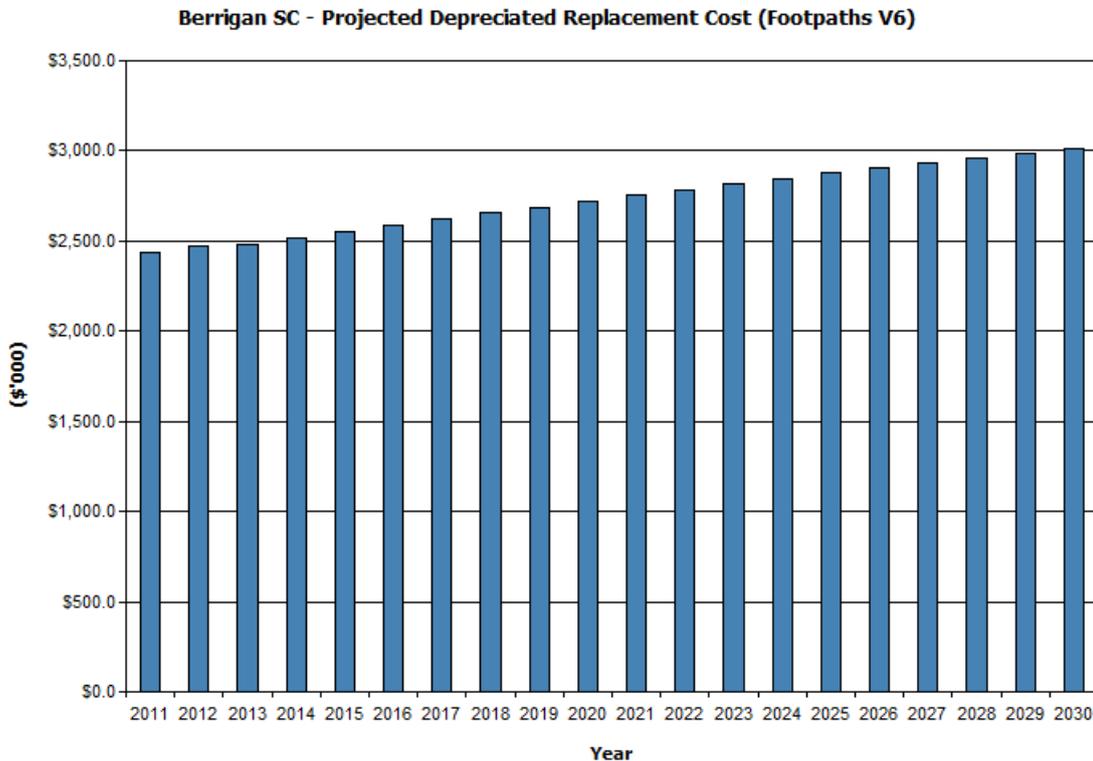
Depreciation expense values are forecast in line with asset values as shown in Fig 10.

**Fig 10. 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 Fig 11.

**Fig 11. 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:

- The useful life of footpath and shared path assets has been taken from the asset management model.
- Gravel footpaths have a useful life of 30 years and a cost of \$8.00 per m<sup>2</sup>.
- Paved footpaths have a useful life of 50 years and a cost of \$100.00 per m<sup>2</sup>.
- Pattern concrete footpaths have a useful life of 60 years and a cost of \$100.00 per m<sup>2</sup>.
- Concrete footpaths have a useful life of 60 years and a cost of \$80.00 per m<sup>2</sup>.
- Asphalted Concrete have a useful life of 60 years and a cost of \$100.00 per m<sup>2</sup>.
- Asphalt footpaths have a useful life of 50 years and a cost of \$22.00 per m<sup>2</sup>.

Accuracy of future financial forecasts may be improved in future revisions of this asset management plan by the following actions.

- Use condition of paths to revise useful life.
- Pedestrian counts need to be conducted to reflect actual usage of assets.
- Construction costs need to be monitored to ensure the replacement costs being used in the plan are realistic

## 7. ASSET MANAGEMENT PRACTICES

### 7.1 Accounting/Financial Systems

The accounting/financial system used by Berrigan Shire is Civica PCS and the costing accounts for footpaths are basically broken into maintenance and capital. It would be desirable for the chart of accounts to be further developed to enable the clear separation of operation costs and maintenance costs and to split the maintenance costs into reactive, planned and cyclic. It would also be desirable to clearly separate capital expenditure into renewal, new and upgrade works.

The financial system is controlled by the Finance Manager with assistance from the Finance Officer. The Finance Manager is accountable for configuration and maintenance of the system. Area managers are responsible for the timely provision of data to be input into the system and various officers subordinate to the Finance Manager are responsible for the accurate and timely input of data to the system.

The following accounting standards/regulations/guidelines shall be complied with:

Applicable Australian equivalents to International Financial Reporting Standards (AIFRSs)<sup>1</sup>

Other authoritative pronouncements for the Australian Accounting Standards Board,

Urgent Issues Group Interpretations,

The Local Government Act (1993) and Regulations and

The Local Government Code of Accounting Practice and Financial Reporting.

Where work is carried out on an asset that will increase its useful life and is greater than \$5,000 in value it will be considered a capital improvement.

The chart of accounts will be further developed to enable the clear separation of operation costs and maintenance costs and to split the maintenance costs into reactive, planned and cyclic. It will also be developed to clearly separate capital expenditure into renewal, new and upgrade works.

### 7.2 Asset Management Systems

Footpath and shared path assets are managed using the BizeAsset system. This system is map based using MapInfo/Microsoft Access for inventory and special records. The footpath and shared path asset inventory is complete at the global level, however, it could be improved by separating assets such as gravel path and concrete edging. The BizeAsset system also provides modelling tools for asset replacement, however, these have not been used to this point as the emphasis has been on inputting inventory data.

Currently this system is not directly linked to the Civica PCS accounting/financial system, however, such a link would be desirable to provide accuracy and consistency of information between the systems. Depreciation calculations are completed using BizeAsset and the results then transferred to Civica PCS.

The asset management system is controlled by the Director Technical Services with assistance from the Executive Engineer. Data input and validation of data is carried out by the Technical Officer – Assets with security of the system being the responsibility of the IT Officer.

It is not envisaged that the asset management system will change in the period to the next review of this plan. It would be desirable for the asset management systems to be integrated with the accounting/financial system and this is a possibility with the development of Civica products. The estimated cost of such an integration puts it out of reach within the short term.

### 7.3 Information Flow Requirements and Processes

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

- The asset register data on size, age, value, remaining life of the network;
- The unit rates for categories of work/material;
- The adopted service levels;
- Projections of various factors affecting future demand for services;
- Correlations between maintenance and renewal, including decay models;
- Data on new assets acquired by council.

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

- The assumed Works Program and trends;
- The resulting budget, valuation and depreciation projections;
- The useful life analysis.

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

The financial reports generated by BizeAsset including valuations, depreciation calculations etc. are provided to the Finance Manager for input into Civica PCS financial system. Actual construction costs for capital works are provided by financial services staff to the Technical Officer – Assets for input into BizeAsset.

New assets constructed by Council are captured by the Technical Officer – Assets from the adopted works program with confirmation of construction from the Executive Engineer or Works Engineer. Actual construction costs for capital works are provided by financial services staff to the Technical Officer – Assets for input into BizeAsset.

New assets gifted to Council by developers are captured by the Technical Officer – Assets from 'As Constructed' drawings and cost estimates submitted by developers. These plans and estimates are checked and signed off by the Executive Engineer as correct.

### 7.4 Standards and Guidelines

AAS27, Financial Reporting by Local Governments, Australian Accounting Standards, June 1996.

AASB1031, Materiality, Australian Accounting Standards Board, July 2004.

AASB116, Property, Plant and Equipment, Australian Accounting Standards Board, July 2007.

2009/2010 Management Plan, Berrigan Shire Council

International Infrastructure Management Manual, Institute of Public Works Engineering Australia, 2006

Local Government Asset Accounting Manual, Department of Local Government, New South Wales, Update No. 4, 1999

## 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 cashflows identified in this asset management plan are incorporated into council's long term financial plan and Strategic Management Plan;
- 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.	Update Standard Operating Procedure for maintenance & Repair of constructed footpaths	EXE	Staff	June 11
2.	Review of remaining life of assets using condition rating as guide	EXE	Staff	June 13
3.	Document methodology and procedures for asset useful lives, asset unit costs, condition rating and depreciation calculations	DTS, DCS	Staff	June 13
4.	Develop chart of accounts to allow separation of operation costs and maintenance costs and to split the maintenance costs into reactive, planned and cyclic and to separate capital expenditure into renewal, new and upgrade works.	FM	Staff	June 11
5.	Investigate options for integration of the Asset Management System with the Accounting/Financial System	FM, EXE	Staff	March 12
6.	Carry out community consultation to allow the development of Desired Levels of Service when this plan is reviewed in 2013	DCS	Staff/External	March 13
7.	Update and review Barooga Pedestrian Access and Mobility Plan	EXE	Staff	Dec 11
8.	Update and review Berrigan Pedestrian Access and Mobility Plan	EXE	Staff	Dec 11
9.	Update and review Finley Pedestrian Access and Mobility Plan	EXE	Staff	Dec 11
10.	Update and review Tocumwal Pedestrian Access and Mobility Plan	EXE	Staff	Dec 11
11.	Update Berrigan Shire Council Subdivision Code	EXE, DM, TP	Staff	June 12
12.	Update Berrigan shire Council Development contribution Plan	EXE, DM, TP	Staff	June 12

### 8.3 Monitoring and Review Procedures

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.

The Plan has a life of 4 years and is due for revision and updating within 2 years of each Council election.

## REFERENCES

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AASB1031, Materiality, Australian Accounting Standards Board, July 2004.

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Local Government Asset Accounting Manual, Department of Local Government, New South Wales, Update No. 4, 1999

IPWEA NAMS.PLUS, Asset Management, A Guided Pathway to Asset Management Planning.

Berrigan Shire Council – State of Environment Report, 2008

Berrigan Shire Council – Local Environmental Plan, 1992

Berrigan Shire Council – Strategic Business Plan Road Assets 2004 including 2006 revision.

Berrigan Shire Council – Stormwater Management Plan 2008

Berrigan Shire Council – Stormwater Strategic Business Plan 2008

## **APPENDICES**

Appendix A Plans of Footpath Network

The plans show all footpaths networks in each township including paths in parks and gardens that are excluded from this asset management plan. Paths in parks and gardens are included in the Parks and Gardens Asset Management Plan

Appendix B Maintenance Response Levels of Service

Appendix C Projected 20 year Capital Renewal Works Program

Appendix D Planned Upgrade/Exp/New 4 year Capital Works Program

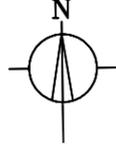
Appendix E 10 Year Long Financial Plan

Appendix F “Core” Infrastructure Risk Management Plan – Footpaths and Shared Paths

KENNEDYS RD

# BAROOGA

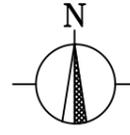
EXISTING FOOTPATH



RESERVE

MURRAY RIVER

# BERRIGAN



EXISTING FOOTPATH

TO JERILDERIE  
(MR 564)

TO OAKLANDS

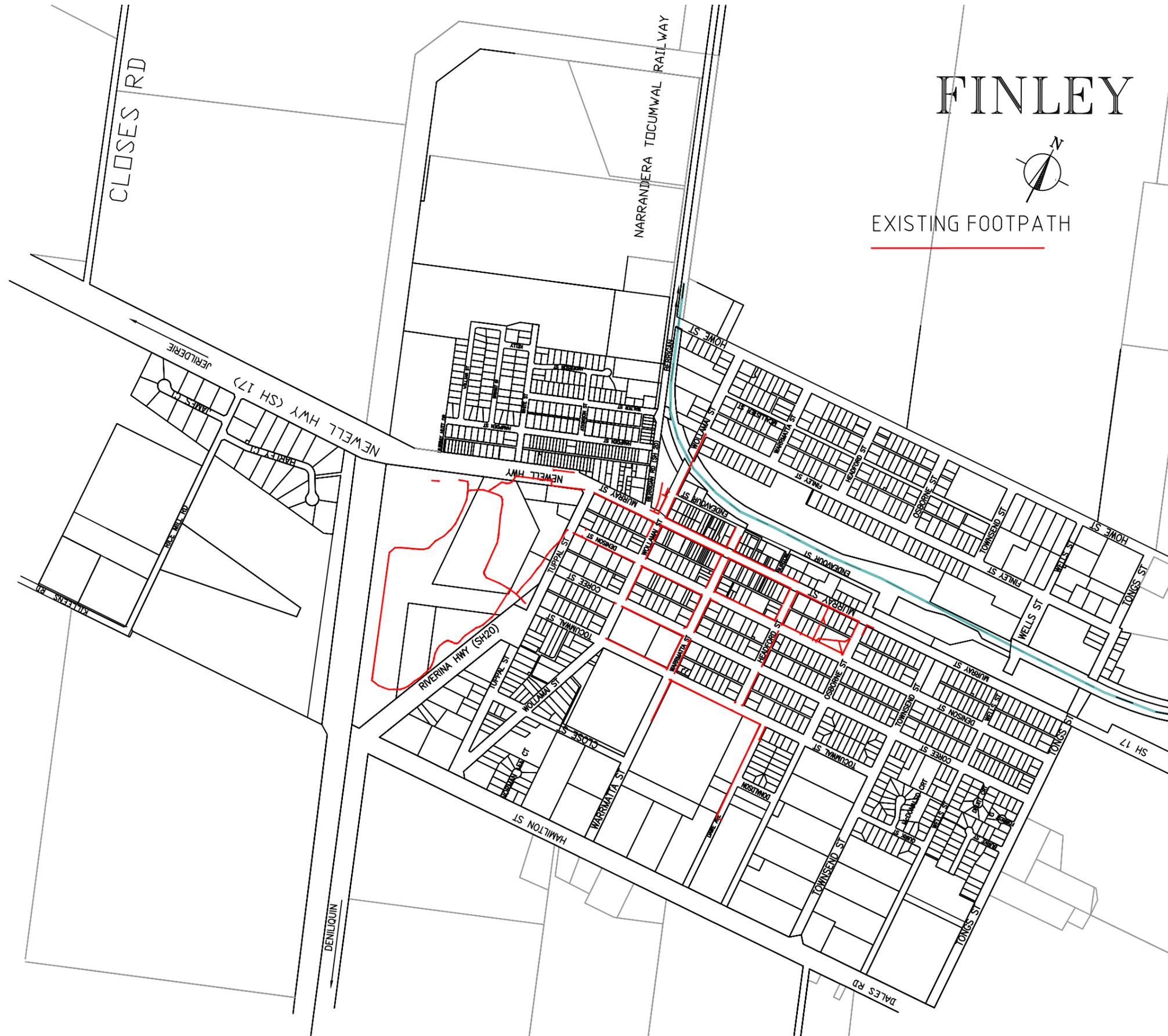
TO FINLEY (SH 20)

TO ALBURY  
(SH 20)

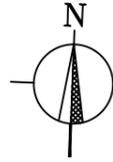
# FINLEY



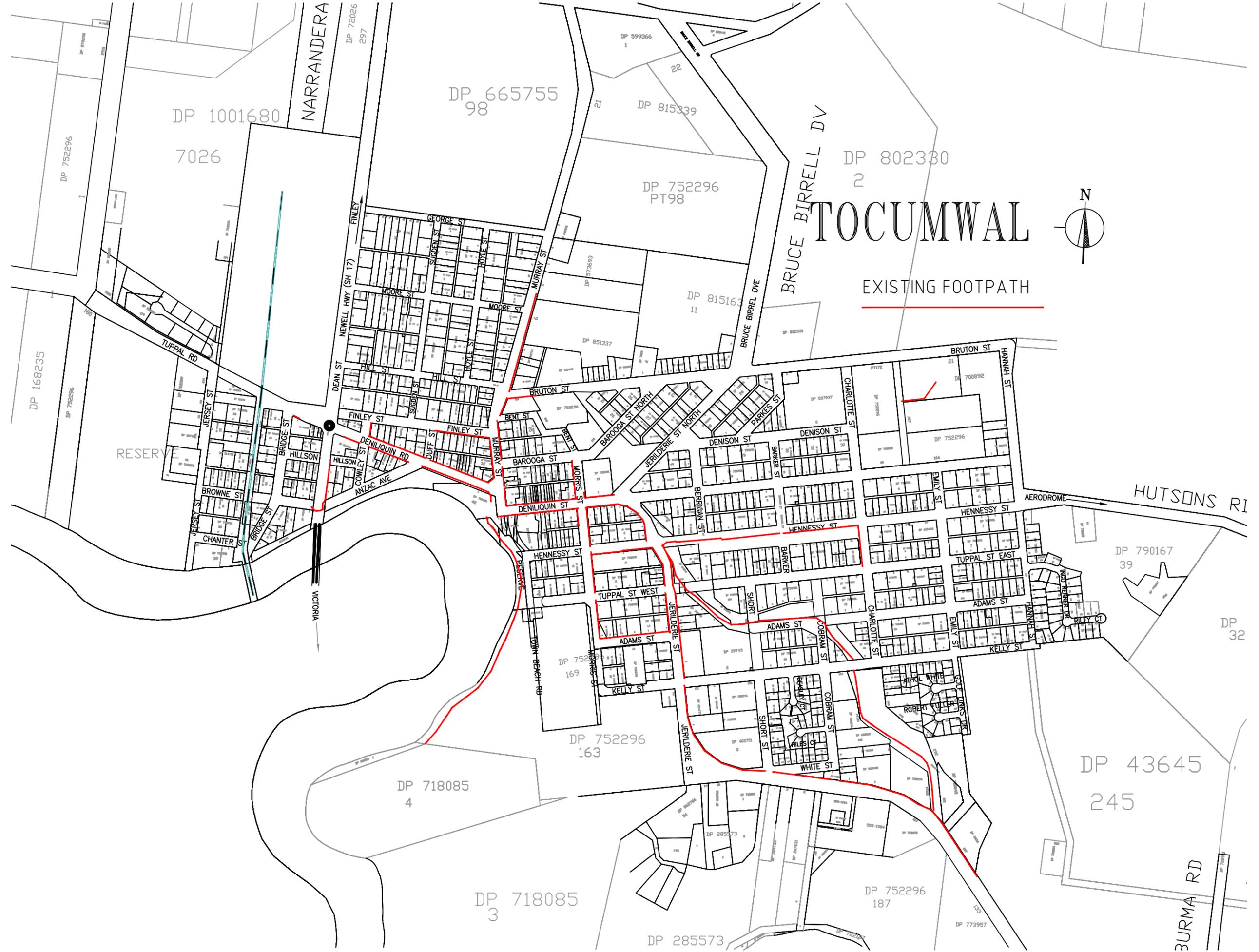
EXISTING FOOTPATH



# TOCUMWAL



EXISTING FOOTPATH



DP 1001680

DP 665755  
98

DP 752296  
PT98

DP 802330  
2

7026

RESERV

HUTSONS RI

DP 790167  
39

DP 32

DP 43645

245

DP 718085  
4

DP 718085  
3

DP 752296  
163

DP 752296  
187

DP 285573

BURMA RD

NARRANDERA

BRUCE BIRRELL DV

VICTORIA

AERODROME

DP 752296

DP 168235

DP 599366  
1

DP 815339

DP 815163  
11

DP 851337

DP 88230

DP 700892

DP 752296

DP 752296  
169

DP 29743

DP 285573

DP 40372

DP 773957

DP 752296

DP 168235

DP 599366  
1

DP 815339

DP 815163  
11

DP 851337

DP 88230

DP 700892

DP 752296

DP 752296  
169

DP 29743

DP 285573

DP 40372

DP 773957

**APPENDIX B MAINTENANCE RESPONSE LEVELS OF SERVICE**

Rating	Low	Medium	High	Extreme
<b>Trip Hazard</b>	<5mm	5 to 10mm	10 to 20mm	>20mm
<b>Uneven Surface</b>	Slight	Uneven	Very	Extreme
<b>Slippery Surface</b>	Slight	Uneven	Very	Extreme
<b>Insufficient Lighting</b>	No		Yes	
<b>Shadows on footpath</b>	No		Yes	

**Footpath Risk Action Response**

If the answer is Low, consideration should be given as to whether action needs to be taken	If the answer is Medium, programme into maintenance works, with response time within 30 days	If the answer is High, make safer if you can within 24 hours and effect either temporary or permanent repairs within 7 days	If the answer is Extreme, make safer if possible within 4 hours and effect immediate repairs within 3 days
--	--	---	--

Appendix C

Berrigan SC >> Renewal Program (Footpaths V6)

UID	Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
15295136	2.01E+13	FP Gravel	Gravel	Berrigan	MITCHEL ST	0	2011	\$1,297.42	30
								<b>Subtotal</b>	<b>\$1,297.42</b>
15295341	2.01E+13	FP Asphalt	Asphalt	Tocumwal	TUPPAL RD	9	2020	\$1,318.37	50
								<b>Subtotal</b>	<b>\$1,318.37</b>
15295232	2.01E+13	FP Concrete	Concrete	Finley	MURRAY ST	11	2022	\$2,310.77	60
								<b>Subtotal</b>	<b>\$2,310.77</b>
15295286	2.01E+13	FP Gravel	Gravel	Barooga	MR226	14	2025	\$1,404.32	30
								<b>Subtotal</b>	<b>\$1,404.32</b>
15295149	2.01E+13	FP Concrete	Concrete	Berrigan	JERILDERIE ST	16	2027	\$1,939.66	60
15295148	2.01E+13	FP Concrete	Concrete	Berrigan	MEMORIAL PLACE	16	2027	\$584.49	60
								<b>Subtotal</b>	<b>\$2,524.15</b>
15295305	2.01E+13	FP Concrete	Concrete	Tocumwal	MORRIS ST	18	2029	\$5,292.48	60
15295306	2.01E+13	FP Concrete	Concrete	Tocumwal	MORRIS ST	18	2029	\$4,875.73	60
								<b>Subtotal</b>	<b>\$10,168.21</b>
15295157	2.01E+13	FP Concrete	Concrete	Berrigan	JERILDERIE ST	19	2030	\$4,625.81	60
15295184	2.01E+13	FP Concrete	Concrete	Berrigan	MOMALONG ST POOL ENTRANCE	19	2030	\$3,068.09	60
15295202	2.01E+13	FP Concrete	Concrete	Finley	DENISON ST	19	2030	\$8,223.82	60
15295205	2.01E+13	FP Concrete	Concrete	Finley	HAMPDEN ST	19	2030	\$1,963.78	60
15295193	2.01E+13	FP Concrete	Concrete	Finley	MURRAY ST	19	2030	\$29,473.57	60
15295195	2.01E+13	FP Concrete	Concrete	Finley	MURRAY ST	19	2030	\$9,178.10	60
15295225	2.01E+13	FP Concrete	Concrete	Finley	TOCUMWAL ST	19	2030	\$4,287.25	60
15295209	2.01E+13	FP Concrete	Concrete	Finley	WARRMATT A ST	19	2030	\$9,320.51	60

Appendix C

Berrigan SC >> Renewal Program (Footpaths V6)

UID	Asset ID	Sub Category	Asset Name	From	To	Rem Life (Years)	Planned Renewal Year	Renewal Cost (\$)	Useful Life (Years)
15295214	2.01E+13	FP Concrete	Concrete	Finley	WARRMATT A ST	19	2030	\$9,124.97	60
15295302	2.01E+13	FP Concrete	Concrete	Tocumwal	BRUTON ST	19	2030	\$8,321.18	60
15295293	2.01E+13	FP Concrete	Concrete	Tocumwal	HENNESSEY ST	19	2030	\$8,428.96	60
15295299	2.01E+13	FP Concrete	Concrete	Tocumwal	MORRIS ST	19	2030	\$11,033.17	60
15295300	2.01E+13	FP Concrete	Concrete	Tocumwal	MORRIS ST	19	2030	\$4,952.22	60
15295329	2.01E+13	FP Concrete	Concrete	Tocumwal	MORRIS ST	19	2030	\$11,563.20	60
15295322	2.01E+13	FP Concrete	Concrete	Tocumwal	MURRAY ST	19	2030	\$16,760.45	60
<b>Subtotal</b>								<b>\$140,325.07</b>	
<b>Program Total</b>								<b>\$159,348.31</b>	

**APPENDIX D PLANNED CAPITAL WORKS PROGRAM 2010-2014**

<b>Street</b>	<b>Section</b>	<b>Width (m)</b>	<b>Distance (m)</b>	<b>2010-2011</b>	<b>2011-2012</b>	<b>2012-2013</b>	<b>2013-2014</b>
<b>Barooga</b>							
Hughes Street	Hay Street to Buchanans Road	1.2	130	\$14,000.00			
Banker Street	Vermont Street to Amaroo Street	1.2	220		\$17,000.00		
Lawson Drive	Amaroo street to Hay Street	1.2	115		\$9,000.00		
Vermont street	Banker Street to Hughes Street	1.2	170			\$13,000.00	
<b>Total</b>			<b>635</b>	<b>\$14,000.00</b>	<b>\$26,000.00</b>	<b>\$13,000.00</b>	<b>\$0.00</b>
<b>Berrigan</b>							
Drummond Street	Chanter Street to Stewart Street	1.2	220		\$17,000.00		
<b>Total</b>			<b>220</b>	<b>\$0.00</b>	<b>\$17,000.00</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>Finley</b>							
Wollamai Street	Coree Street to tocumwal Street	1.2	110	\$8,600.00			
Wollamai Street	East of Murray Street	1.2	70	\$5,500.00			
Tuppal Street	Murray Street to Lake Track	1.2	110	\$10,000.00			
<b>Total</b>			<b>290</b>	<b>\$24,100.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>Tocumwal</b>							
Cowley Street	Deniliquin Street to Finley Street	1.2	40	\$3,200.00			
Finley Street	Duff Street to Cowley Street	1.2	150	\$13,000.00			
<b>Total</b>			<b>190</b>	<b>\$16,200.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>
<b>Grand Total</b>			<b>1335</b>	<b>\$54,300.00</b>	<b>\$43,000.00</b>	<b>\$13,000.00</b>	<b>\$0.00</b>

Appendix E

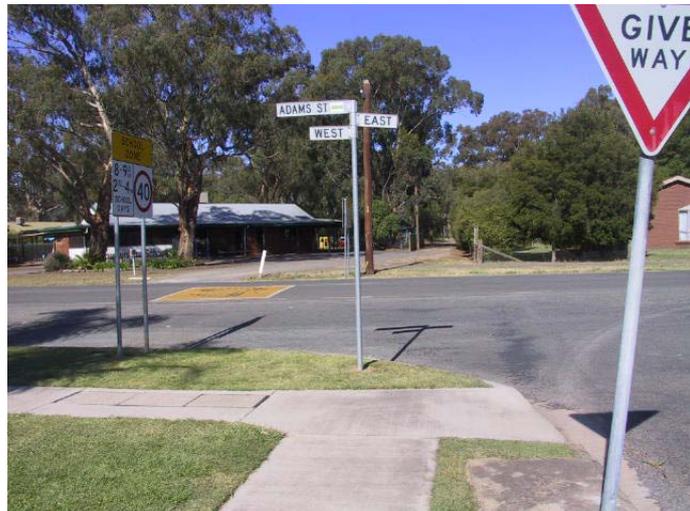
**10 YEAR LONG TERM FINANCIAL PLAN**

Cashflow	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18	Jun-19	Jun-20	Totals
Inflation Factor	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
<b>Receipts:</b>											
Pamps	\$20,000.00	\$22,500.00	\$22,500.00	\$22,500.00	\$22,725.00	\$22,952.30	\$23,181.80	\$23,413.60	\$23,647.70	\$23,884.20	\$227,304.60
Half Cost Schmes	\$13,600.00	\$17,150.00	\$11,900.00	\$24,900.00	\$25,149.00	\$25,400.50	\$25,654.50	\$25,911.00	\$26,170.10	\$26,431.80	\$222,266.90
Council from untied	\$146,265.48	\$125,682.17	\$113,811.90	\$122,852.00	\$124,080.50	\$125,321.30	\$126,574.60	\$127,840.40	\$129,118.90	\$130,410.10	\$1,271,957.35
<b>Total Receipts</b>	<b>\$179,865.48</b>	<b>\$165,332.17</b>	<b>\$148,211.90</b>	<b>\$170,252.00</b>	<b>\$171,954.50</b>	<b>\$173,674.10</b>	<b>\$175,410.90</b>	<b>\$177,165.00</b>	<b>\$178,936.70</b>	<b>\$180,726.10</b>	<b>\$1,721,528.85</b>
<b>Payments:</b>											
Management	\$38,565.48	\$30,972.17	\$31,281.90	\$31,594.70	\$31,910.60	\$32,229.70	\$32,552.00	\$32,877.50	\$33,206.30	\$33,538.40	\$328,728.75
Maintenance	\$12,000.00	\$12,360.00	\$12,730.00	\$12,857.30	\$12,985.90	\$13,115.80	\$13,247.00	\$13,379.50	\$13,513.30	\$13,648.40	\$129,837.20
Capital Works	\$129,300.00	\$122,000.00	\$104,200.00	\$125,800.00	\$127,058.00	\$128,328.60	\$129,611.90	\$130,908.00	\$132,217.10	\$133,539.30	\$1,262,962.90
<b>Total Payments</b>	<b>\$179,865.48</b>	<b>\$165,332.17</b>	<b>\$148,211.90</b>	<b>\$170,252.00</b>	<b>\$171,954.50</b>	<b>\$173,674.10</b>	<b>\$175,410.90</b>	<b>\$177,165.00</b>	<b>\$178,936.70</b>	<b>\$180,726.10</b>	<b>\$1,721,528.85</b>

Berrigan Shire Council

# 'Core' Infrastructure Risk Management Plan

Footpaths & Shared Paths



Version 1

Adopted by Council 18<sup>th</sup> May, 2011

**Document Control**



Document ID: 59\_07\_070909 nams.plus core irmp template v6

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	20-12-2010	1 <sup>st</sup> Edition	JS	TD	FE

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The Institute of Public Works Engineering Australia.

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## 1. INTRODUCTION

### 1.1 Aim

The purpose of this core infrastructure risk management plan is document the results and recommendations resulting from periodic identification, assessment and treatment of risks associated with providing services to the community from infrastructure, using the fundamentals of Australian Standard for Risk Management, AS/NZS 4360; 2004.

Risk Management is defined in AS/NZS 4360; 2004 as: “the culture, processes and structures that are directed towards realising potential opportunities whilst managing adverse effects”<sup>1</sup>.

### 1.2 Objectives

The objectives of the plan are:

- to identify risks to the footpath and shared path network that may impact of the delivery of services from infrastructure
- to select credible risks for detailed analysis,
- to analyse and evaluate risks in accordance with AS/NZS 4360:2004,
- to prioritise risks,
- to identify risks requiring treatment by management action,
- to develop risk treatment plans identifying the tasks required to manage the risks, the person responsible for each task, the resources required and the due completion date.

### 1.3 Core and Advanced Risk Management

This core risk management plan has been designed to be read as a supporting document to the infrastructure and asset management plan. It has been prepared using the fundamentals of Australian Standard for Risk Management, AS/NZS 4360:2004.

Future revisions of this risk management plan will move toward more comprehensive documentation in accordance with Australian Standard for Risk Management, AS/NZS 4360:2004.

### 1.4 Scope

This plan considers risks associated with delivery of services from infrastructure.

### 1.5 The Risk Management Context

Council has implemented many management practices and procedures to identify and manage risks associated with providing services from infrastructure assets. These include:

- operating a reactive maintenance service for all assets and services;
- operating a planned maintenance system for key assets;
- monitoring condition and remaining service life of assets nearing the end of their service life;
- renewing and upgrading assets to maintain service delivery;
- closing and disposing of assets not providing the required service level; and
- acquiring or constructing new assets to provide new and improved services.

Council has assigned responsibilities for managing risks associated with assets and service delivery to the Technical Services Department.

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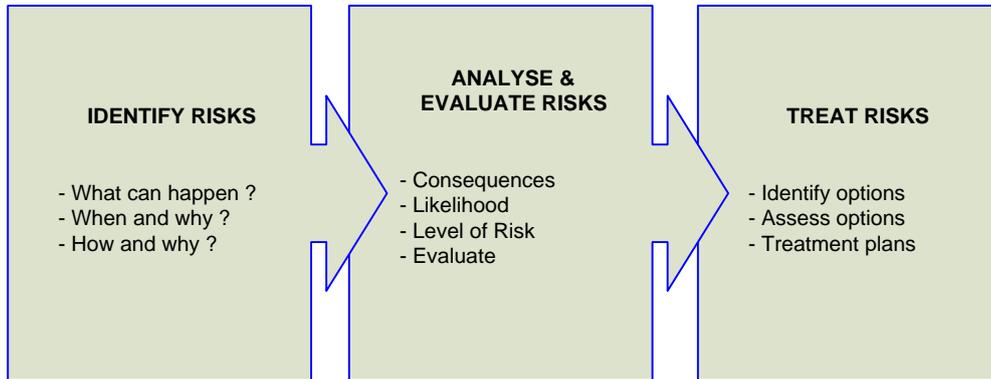
<sup>1</sup> p4

## 1.6 Risk Management Model

The risk management process used in this project is shown in Fig 1.6 below.

It is an analysis and problem solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of Australian Standard AS/NZS 4360:2004, Risk Management.



**Fig 1.6. Risk Management Process – Abridged**  
Source: Adapted from AS/NZS 4360:2004, Fig 3.1 p 13

## 2. COMMUNICATION AND CONSULTATION

Risk communication is 'the interactive process of exchange of information and opinion involving multiple messages about the nature of risk and risk management'.<sup>2</sup>

'Appropriate communication and consultation seeks to:

- Improve people's understanding of risks and the risk management processes;
- Ensure that the varied views of stakeholders are considered; and
- Ensure that all participants are aware of their roles and responsibilities.'

The development of this infrastructure risk management plan was undertaken using a consultative team approach to:-

- Identify stakeholders and specialist advisors who need to be involved in the risk management process;
- Discuss and take into account the views of stakeholder and specialist advisors; and
- Communicate the results of the risk management process to ensure that all stakeholders are aware of and understand their and roles and responsibilities in risk treatment plans.

Members of the team responsible for preparation of this risk management plan are:

- James Sorraghan – Executive Engineer
- Tony Davis – Technical Officer Asset
- Michelle Koopman – Enterprise Risk Manager
- Darren Freund - Maintenance Overseer
- Arlena Pyle – Finance Manager
- Andy Reeves – Surveillance Officer

## 3. RISK IDENTIFICATION

### 3.1 General

Potential risks associated with providing services from infrastructure were identified at meetings of the council's infrastructure risk management team.

Team members were asked to identify "What can happen, where and when" to the various council services and then to identify possible "Why and how can it happen" as causes for each potential event.

Each risk was then tested for credibility to ensure that available resources were applied to those risks that the team considered were necessary to proceed with detailed risk analysis

The assets at risk, what can happen, when, possible cause(s), existing controls and credibility are shown in Appendix A – Risk Register.

Credible risks are subjected to risk analysis in Section 4.4.5. Risks assessed as non-credible were not considered further and will be managed by routine procedures.

---

<sup>2</sup> HB 436:2004, Sec 3.1, p 20

## 4. RISK ANALYSIS

### 4.1 General

Credible risks which have been identified during the risk identification stage were analysed. This process takes into account the **'likelihood'** and the **'consequences'** of the event. The objective of the analysis is to separate the minor acceptable risks from the major risks and to provide data to assist in the assessment and management of risks.

The risk analysis process is applied to all credible risks to determine levels of risk. The process acts as a filter by applying a reasoned and consistent process. Minor risks can be eliminated from further consideration and dealt with within standard operating procedures.

The remaining risks will therefore be of such significance as to consider the development of risk treatment options and plans.

### 4.2 Likelihood

Likelihood is a qualitative description of probability of an event occurring. The process of determining likelihood involves combining information about estimated or calculated probability, history or experience. Where possible it is based on past records, relevant experience, industry practice and experience, published literature or expert judgement.

### 4.3 Consequences

Consequences are a qualitative description of the effect of the event. The process of determining consequences involved combining information about estimated or calculated effects, history and experience.

### 4.4 Method

The risk analysis method uses the risk rating chart shown in Section 4.4.3. This process uses a qualitative assessment of likelihood/probability and history/experience compared against a qualitative assessment of severity of consequences to derive a risk rating.

The qualitative descriptors for each assessment are shown below.

#### 4.4.1 Likelihood

Likelihood	Descriptor	Probability of occurrence
Rare	May occur only in exceptional circumstances	More than 20 years
Unlikely	Could occur at some time	Within 10-20 years
Possible	Might occur at some time	Within 3-5 years
Likely	Will probably occur in most circumstances	Within 2 years
Almost certain	Expected to occur in most circumstances	Within 1 year

#### 4.4.2 Consequences

Consequences	Description
Insignificant	No injuries, low financial loss (less than \$10,000)
Minor	First aid treatment, on-site release immediately contained, medium financial loss (\$10,000 - \$50,000)
Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss (\$50,000 - \$200,000)
Major	Extensive injuries, loss of production capacity, off-site release with no detrimental effects, major financial loss (\$200,000 - \$1,000,000)
Catastrophic	Deaths, toxic release off-site with detrimental effect, huge financial loss (more than \$1M)

#### 4.4.3 Risk Assessment

The risk assessment process compares the likelihood of a risk event occurring against the consequences of the event occurring. In the risk rating table below, a risk event with a likelihood of 'Possible' and a consequence of 'Major' has a risk rating of 'High'. This rating is used to develop a typical risk treatment in Section 5.3.

Risk Rating					
Likelihood	Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Rare	L	L	M	M	H
Unlikely	L	L	M	M	H
Possible	L	M	H	H	H
Likely	M	M	H	H	VH
Almost Certain	M	H	H	VH	VH

Ref: HB 436:2004, Risk Management Guidelines, Table. 6.6 p 55.

#### 4.4.4 Indicator of Risk Treatment

The risk rating is used to determine risk treatments. Risk treatments can range from immediate corrective action (such as stop work or prevent use of the asset) for 'Very High' risks to manage by routine procedures for 'Low' risks.

An event with a 'High Risk' rating will require 'Prioritised action'. This may include actions such as reducing the likelihood of the event occurring by physical methods (limiting usage to within the asset's capacity, increasing monitoring and maintenance practices, etc), reducing consequences (limiting speed of use, preparing response plans, etc) and/or sharing the risk with others (insuring the organisation against the risk).

Risk Rating	Action Required
VH	Very High Risk Immediate corrective action
H	High Risk Prioritised action required
M	Medium Risk Planned action required
L	Low Risk Manage by routine procedures

#### 4.4.5 Analysis of Risk

The team conducted an analysis of credible risks identified in section 3.1 using the method described above to determine a risk rating for each credible risk.

The credible risks and risk ratings are shown in Appendix A – Risk Register

#### 4.5 Risk Evaluation

The risk management team evaluated the need for risk treatment plans using an overall assessment of the following evaluation criteria to answer the question “is the risk acceptable?”

Criterion	Risk Evaluation Notes
Operational	Risks that have the potential to reduce services for a period of time unacceptable to the community and/or adversely affect the council's public image.
Technical	Risks that cannot be treated by council's existing and/or readily available technical resources.
Financial	Risks that cannot be treated within council's normal maintenance budgets or by reallocation of an annual capital works program.
Legal	Risks that have the potential to generate unacceptable exposure to litigation.
Social	Risks that have the potential to: - cause personal injury or death and/or - cause significant social/political disruption in the community.
Environmental	Risks that have the potential to cause environmental harm.

The evaluation criteria are to provide guidance to evaluate whether the risks are acceptable to the council and its stakeholders in providing services to the community. Risks that do not meet the evaluation criteria above are deemed to be unacceptable and risk treatment plans are required to be developed and documented in this Infrastructure Risk Management Plan.

## **5. RISK TREATMENT PLANS**

### **5.1 General**

The treatment of risk involves identifying the range of options for treating risk, evaluating those options, preparing risk treatment plans and implementing those plans. This includes reviewing existing guides for treating that particular risk, such as Australian and State legislation and regulations, Australian Standards and Best Practice Guides.

Developing risk treatment options starts with understanding how risks arise, understanding the immediate causes and the underlying factors that influence whether the proposed treatment will be effective.

One treatment option is to remove the risk completely by discontinuing the provision of the service.

Other options include risk reduction by reducing the likelihood and/or the consequences of the risk.

### **5.2 Risk Treatment Process**

The risk treatment process comprises 5 steps.

#### **Step 1. Review causes and controls**

The risk identification process documented in Section 3 included identifying possible causes and documenting existing controls.

#### **Step 2. Develop treatment options**

Treatment options include those that eliminate risk, reduce the likelihood or the risk event occurring, reducing the consequences should the risk event occur, sharing of the risk with others and accepting the risk.

#### **Step 3. Assess risk treatment options against costs and residual risk**

The method of assessment of risk treatment options can range from an assessment by a local group of stakeholders and practitioners experienced in operation and management of the assets/service to detailed risk cost and risk reduction cost/benefit analysis.

#### **Step 4. Select optimum risk treatment**

#### **Step 5. Develop risk treatment plans**

### **5.3 Risk Treatments**

The risk treatments identified for non-acceptable risks are detailed in Appendix A – Risk Register.

### **5.4 Risk Treatment Plans**

From each of the risk treatments identified in Appendix A – Risk Register, risk treatment plans were developed.

The risk treatment plans identify for each non-acceptable risk:-

1. Proposed action
2. Responsibility
3. Resource requirement/budget
4. Timing
5. Reporting and monitoring required

The risk treatment plan is shown in Appendix A – Risk Register.

## 6. MONITORING AND REVIEW

The plan will be monitored and reviewed as follows.

Activity	Review Process
Review of new risks and changes to existing risks	Annual review by team with stakeholders and report to council
Review of Risk Management Plan	3 yearly review and re-write by team and report to council
Performance review of Risk Treatment Plan	Action plan tasks incorporated in council staff performance criteria with 6 monthly performance review.  Action plan tasks for other organisations reviewed at annual team review meeting

## 7. REFERENCES

AS/NZS 4360:2004, Australian/New Zealand Standard, Risk Management, Standards Australia, Sydney.

HB 436:2004, Risk Management Guidelines, Companion to AS/NZS 4360:2004, Standards Australia, Sydney.

International Infrastructure Management Manual, 2006, Institute of Public Works Engineering Australia, Sydney, 2006 [www.ipwea.org.au](http://www.ipwea.org.au)

INSERT OTHER APPLICABLE REFERENCES IN ALPHABETICAL ORDER

## **APPENDICES**

Appendix A Risk Register

**Berrigan SC**

**Footpath & Shared Path Network Infrastructure Risk Register**

RISK IDENTIFICATION							RISK ANALYSIS					RISK TREATMENT			RISK TREATMENT PLAN				
Risk No.	Asset at Risk	What can happen?	When can it occur?	Possible cause	Existing controls	Is risk credible?	Likelihood	Consequences	Risk rating	Action required	Is risk acceptable?	Treatment option(s)	Residual risk	Risk treatment plan	Actions	Responsibility	Resources	Budget	Date due
1	Path	Trip / Fall	Anytime now	Tree Roots, Holes, Lifting or Moving Concrete, Service Pits etc, Signage or Street Furniture	Inspections, Customer Request / Suggestion Form and Maintenance	Yes	Possible	Moderate	High	Prioritised action required	No	Increase inspections and update procedure	Risk remains where hazards develop between inspections and until repaired	Implement updated procedures	Report to Council on risk management plan and funding needs. Implement program when funded	Executive Engineer	Staff time,	\$0	Feb-11
2	Path	Hitting Head	Anytime now	Tree or Street Furniture	Inspections, Customer Request / Suggestion Form and Maintenance	Yes	Possible	Minor	Medium	Planned action required	Yes	N/A							
3	Swing Bridge	Bridge Collapse	Within 20 years	Age, Structural Failure, Increased Corrosion from Environmental Factors, or Strong winds	Customer Request / Suggestion Form and Maintenance	Yes	Rare	Major	Medium	Planned action required	Yes	N/A							
4	Pedestrian Crossing	Pedestrian colliding with Vehicle	Anytime now	Limited Visibility, Missing or Damaged Signage, Faded Linemarking	Inspections, Customer Request / Suggestion Form and Maintenance	Yes	Rare	Major	Medium	Planned action required	Yes	N/A							
5	Path	Pedestrian colliding with Mobility Aide or Cyclist	Anytime now	Age of person, limited visibility, narrow path	Inspections, Customer Request / Suggestion Form and Maintenance	Yes	Rare	Moderate	Medium	Planned action required	Yes	N/A							
6	Path	Water laying on path causing fall or limited usage	Anytime now	Rain or Flooding	Inspections, Customer Request / Suggestion Form and Maintenance	Yes	Possible	Minor	Medium	Planned action required	Yes	N/A							