



Leeton Shire Council Footpaths & Cycleways

Asset Management Plan

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Resolution 15/267

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Introduction

Leeton Shire Council maintains approximately 39.2km of footpaths across the Shire including 17.3km of shared cycleway network.

Background, Goals & Objectives of Asset Management

Leeton Shire Council controls and maintains 39.2km of footpath and shared cycleway across the Shire. This Asset Management Plan aims to highlight the various activities and costs associated with managing these assets. Leeton Shire Council has four (4) principal objectives listed in its Asset Management Strategy. These are:

1. Manage Council's risks arising from the control of our Assets. This extends to managing our Assets in a manner that is both responsible and in accord with legislative requirements, standards and codes.
2. Through performance measurement, provide a means to assess that the suitability, functionality, service levels and scale of Council Assets compliment Community expectations and to recognise the full potential of the asset.
3. Through lifecycle costing, to ensure, where possible, funds are available for the planning, purchase, installation, operation, maintenance and renewal of Council's Assets.
4. Elevate and promote awareness throughout the organisation of the individual, departmental and broad responsibilities pertaining to Assets and their management.

Plan Framework

This Asset Management Plan considers the following matters pertaining to the maintenance and upkeep of our footpath and shared cycleway network:

1. The current **level of service** provided through the road network, as well as the particular legislative requirements that govern some of these standards.
2. Details on the whole of **lifecycle management** of the road network including risk management, condition, maintenance schedule options, renewal planning, and acquisition/disposal indicators.
3. An assessment of the potential demand factors that could affect footpath network into the future is considered in the **improvement plan**. This extends to considering capital works programs that respond to these factors.

Assets Covered by this Plan

This Detailed Asset Management Plan covers all lengths of footpath and shared cycleway within the Leeton Shire Council area and includes assets and components such as:

Footpaths
Perambulators

Formed Network Links
Shared Cycleway

Facilities not considered within this Asset Management Plan include unformed network links and the like (areas where pedestrian traffic is not clear or obvious and where no assets are provided by Council).

This plan may, in some circumstances, be annexed or even superseded by subsequent Asset Management Plans – i.e. for the buildings asset class, a ROXY Theatre Asset Management Plan would reflect the unique nature of this facility, and therefore contain more stringent inspection and maintenance requirements. Upon the completion of such documents, this plan will be updated to reflect any external references.

AMP Summary Dashboard

The following figures are a “dashboard” representation of various asset management factors as they pertain to the footpath network. Figures are shown in 2015/16 dollars.

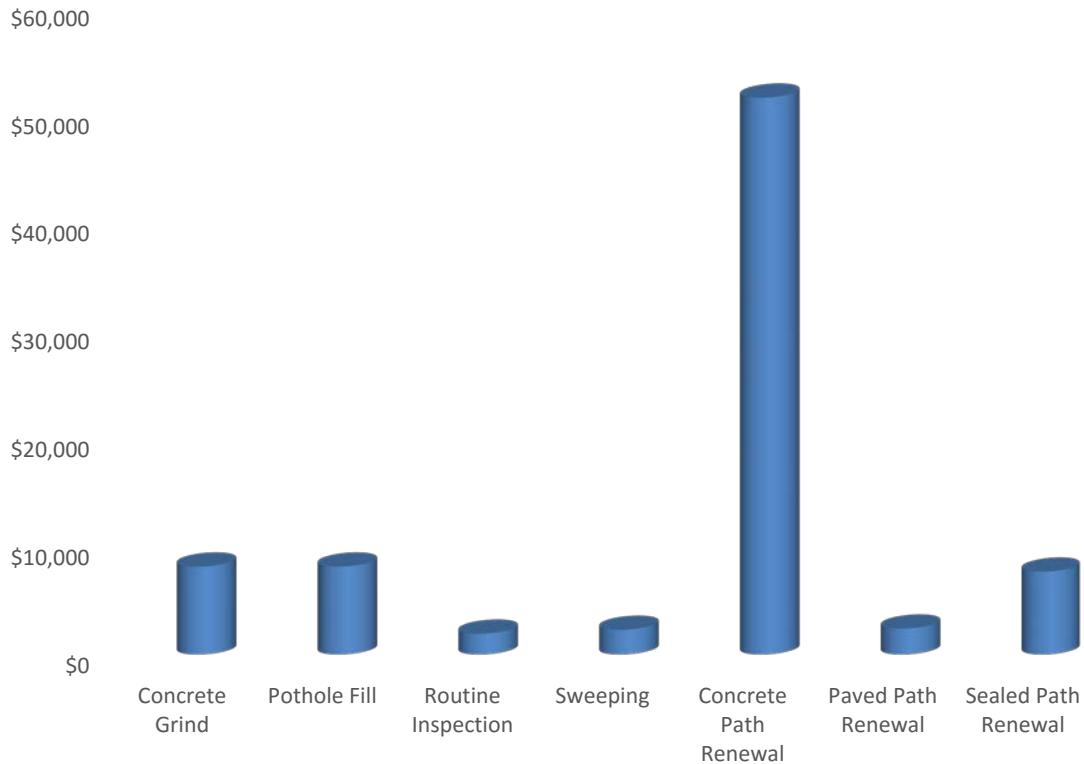


Figure 1 - Costs Associated with Levels of Service

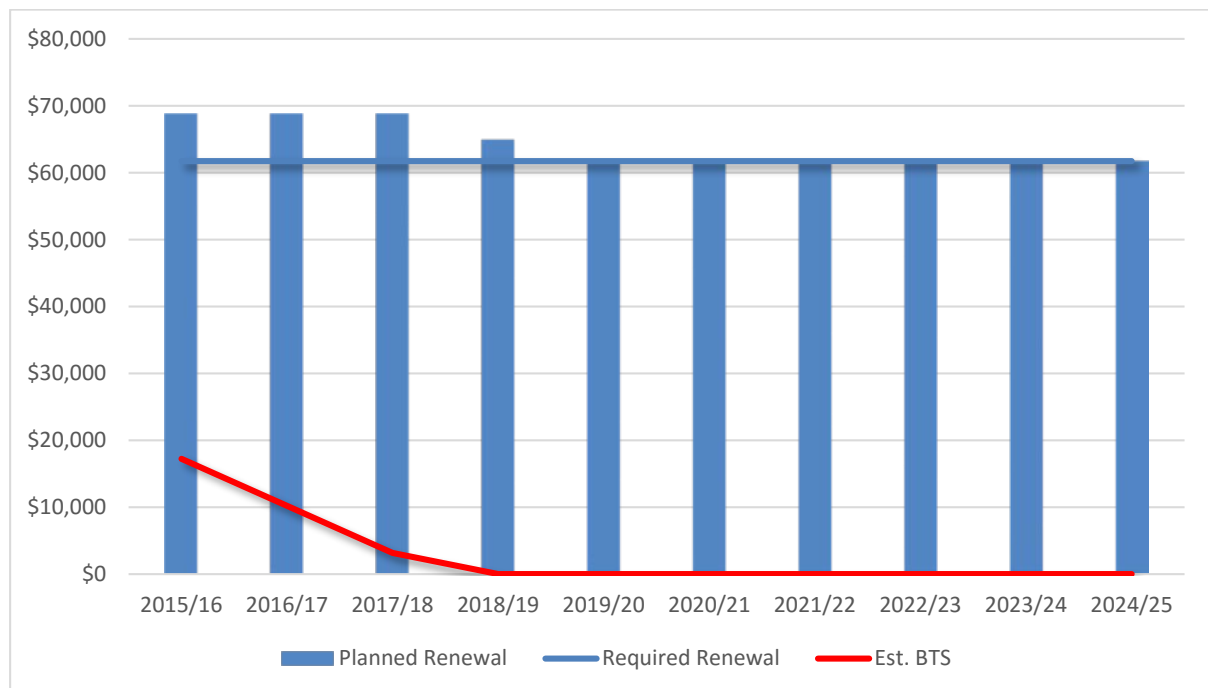


Figure 2 - Ideal Long Term Network Forecast

AMP Improvement Items

Detailed within this AMP are a number of identified areas in which Council wishes to further improve its Asset Management practices. They include:

- Consideration of various levels of service models
- Perambulator assessment & upgrade
- Increase in Planned Maintenance
- Design and Construction Standards
- Pre-Emptive Defect Capture
- Measureable Condition Assessments

Details on each of these items are found within this plan.



Service Levels

This section considers the current level of service provided through the footpath network as well as the particular legislative requirements that govern some of these standards. Essentially, this outlines our plan and intervention flags for the network.

Legislative Requirements

Below are listed the main pieces of legislation and policy that relate to the operation and maintenance of Council's footpath network. This is not an exhaustive list and the network may, from time to time, be impacted by additional legislation. Typically, these instruments affect the initial construction of a footpath (clearances, grades, widths, etc.)

- Local Government Act
- NSW Roads Act 1993
- Australian Road Rules
- Australian Standards
- AustRoads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths
- WHS Legislation
- Asset Management Plan and the Community Strategic Plan

Throughout the development of Leeton Shire Council's Community Strategic Plan, Asset Management was highlighted as an important facet of Council's operations. Among other matters, the Community indicated that Council's priority efforts should be to:

"Plan effectively for new infrastructure needs, remove duplication, as well as ensure appropriate and efficient maintenance and management practices of public infrastructure so as to ensure use to effective full potential"

"Provide and maintain infrastructure options that encourage physical activity and support/enhance community life in a variety of ways that are well maintained and applicable to our needs"

The purpose of this Asset Management Plan is to enable the satisfaction of these Community priorities in an efficient and cost effective manner.

Community Desired Levels of Service

Certain aspects of the current levels of service detailed in the following section can be reduced or increased as desired by the Community. For this iteration of the Footpath and Cycleways Asset Management plan, no modifications to levels of service have been considered. Note; this is where assumptions such as 100 year replacement cycles for concrete footpaths or increased inspection frequencies can be tested. This is included in the improvement plan for future iterations.

Current Levels of Service

Leeton Shire Council carries out a number of inspection, maintenance and renewal activities to preserve its footpath network in a satisfactory conditions (where possible). Table 1 outlines these activities and their respective frequencies that Council aims to achieve under the current budgetary, workforce, and environmental limitations.

It should be highlighted that the interventions and response times shown below are reflective of what is **affordable** under the **current pool of funds available** (capital plus operational). Furthermore, they represent the planned/budgeted expectations from the network and not necessarily the work that will be conducted each year. Thorough inspection and investigation precede any actual works programming (i.e. maintenance and renewal) across the network.

Service Type / Activity	Class***	Intervention/Service Level	Required Budget
Maintenance Activities			\$28,755 per year
Concrete Grind	All	60* events per year (avg)	\$8,226 per year
Pothole Fill	All	60* events per year (avg)	\$8,226 per year
Sweeping	All	20* events per year (avg)	\$2,303 per year
P&E Contingency	All	Purchase & Maint of Small Plant	\$10,000 per year
Cleaning/Degreasing	All	Activity currently un-measured	\$0 per year
Renewal Costs			\$61,818** per Year
Concrete Surface Renewal	All	Rebuilt once per 100 Year(s)	\$51,573 per year
Sealed Surface Renewal	All	Resealed once per 25 Year(s) Rebuilt once per 4 seals	\$7,756 per year
Paved Surface Renewal	All	Rebuilt once per 40 Year(s)	\$2,418 per year
Risk Management			\$1,959 per Year
Routine Inspection	1	1 Inspection per Year	\$985 per year
Routine Inspection	2	1 Inspection per 2 Years	\$640 per year
Routine Inspection	3	1 Inspection per 2 Years	\$321 per year
			\$92,449 per year
			\$15.93 per rateable assessment

Table 1 – Current Levels of Service

* Refer to Table 2 below for response times pertaining to maintenance activities.

** The required annual renewal spend is different to annual depreciation as it is based on varying intervention activities over the entire life cycle of the asset.

*** See the following sections for a description on the calculation of an asset's class.

The above figures yield a total cost of the footpath network of **\$2,361 per km per year**. This value includes all operational, maintenance and renewal activities including corporate overheads and on costs. It should also be noted that this table forms that basis through which the footpath network is managed both day to day and year to year. From this, we garner statements such as:

“Council endeavours to replace its concrete footpaths every 100 years” and

“On average, Council inspects its Class 1 footpaths 2 times per year and repairs (on average) 60 trip hazards throughout the network in the same period.”

In addition to the above service levels, Council also needs to respond to defects arising throughout the network in a timely manner. Table 2 outlines the intervention times currently set for various defects/maintenance activities mentioned above.

Some defect types, it can be noted, have been assigned no response time – this means that the defect is logged for information but are still used in the development of asset renewal/replacement programs. For certain defects, it was deemed that response time reductions should occur for Class 1 areas – reflecting the increased usage associated with these assets.

Defect Type	Defect Description	Response Activity	Default Response Time*	Class 1 Response Time*
Trip Hazard (raised areas)	10-15mm	Renewal Indicator	-	-
	>15mm	Concrete Grinding	180 days	90 days
	Inhibiting Asset Function	Concrete Grinding	3 days	3 days
Trip Hazard (Potholes and/or Filling Required)	10-30mm	Renewal Indicator	-	-
	>30mm	Jetpatcher or Cold Mix	180 days	90 days
	Inhibiting Asset Function	Jetpatcher or Cold Mix	3 days	3 days
Loose Materials	Up to 4m ²	Manual Sweep	60 days	30 days
	Over 4m ²	Mechanical Sweep	180 days	90 days
	Inhibiting Asset Function	Manual Sweep	3 days	3 days
Uneven Surface	On pathway	Renewal Indicator	-	-
	Adjacent pathway	Engineering Investigation & Repair	365 days	365 days
Slippery Surface	Notably Slippery or generating complaint	Cleaning / Degreasing	180 days	90 days
Retained Water	>30mm deep	Engineering Investigation & Repair	30 days	30 days
Non-Conforming Pram Ramps	Raised lip at invert	Concrete Grinding	180 days	90 days
	Combination of defects	Renewal Indicator	-	-

Table 2 - Defect Types & Current Intervention Levels

* Response days refer to calendar days (including weekends and holidays).

Footpath Classifications

The Leeton Shire Council footpath network is subject to a variety of maintenance and renewal programs aimed at maintaining a certain level of service. Each segment of pathway is classified by a hierarchy score which delineates them into categories of footpath Classifications.

Hierarchy

The classification system for the hierarchy is based on the 'Land Use' considerations of the RMS Pedestrian Access & Mobility Plan Guidelines 2002, Weighted Criteria Scoring System. The classifications of this hierarchy are summarised in Table 3. This hierarchy is subject to change as the Community evolves and end users modify habits over time.

Land Use Criteria	Performance Conditions	Score
Number of Attractors/Generators adjacent (<i>within 10m of</i>) the path	More than 5 Locations	10
	3-5 Locations	8
	1-2 Locations	5
	0 Locations	0
Land Use Type (<i>expanded from Guidelines to accommodate additional local uses</i>)	School / Library / Child Care Centres	10
	Playground (<i>equipment</i>)	10
	Health Facility or Medical Centre	10
	Church or Place of Worship	8
	Park (<i>passive</i>) or Reserve	8

	Licensed Premises (<i>i.e. Clubs, Pubs, Licensed Restaurants</i>)	8
	Sporting Complex (<i>i.e. Pools, sporting ovals, etc.</i>)	7
	Carpark	7
	Supermarket	6
	Accommodation / Caravan Parks	6
	Attraction (<i>i.e. Theatres, Police Stations, Tourism</i>)	5
	Banks / Post Offices / Retail Outlets / Office Buildings	5
	Industrial Concerns / Wholesale Outlets	4
	Petrol Stations / Carwash	3
Proximity to Attractors/Generators	Less than 250m	10
	>250-500m	8
	>500-1000m	5
	>1000m	0

Table 3- Asset Hierarchy Scoring System

The resulting scores of Table 3 are calculated using a GIS script that performs a variety of functions. The total scores for each path segment are then grouped into hierarchical score ranges according to Table 4. The classification for each hierarchy score range is used in determining defect priorities and the like.

Classification	Hierarchy Score Range
1	> 35 points
2	30 – 35 points
3	<30 points

Table 4 - Asset Hierarchy

The final step is for the computer generated results to be ‘truthed’ by Council Asset officers for final accepting into Council’s GIS. Figure 3 below highlights the extent of Council’s footpath network by classification. A breakdown (per kilometre) by classification and component is shown also in Table 5. As evident in this table, Council’s network predominantly consists of Class 2 and 3 segments. Class 1 segments are restricted to highly busy areas.

Please note that the footpath network map in Figure 3 is subject to change as infrastructure is constructed, upgraded, renewed, or disposed of. Please contact Council’s GIS department for a current version of the map.



**LEETON
SHIRE
COUNCIL**

**Footpath Classification
Breakdown**

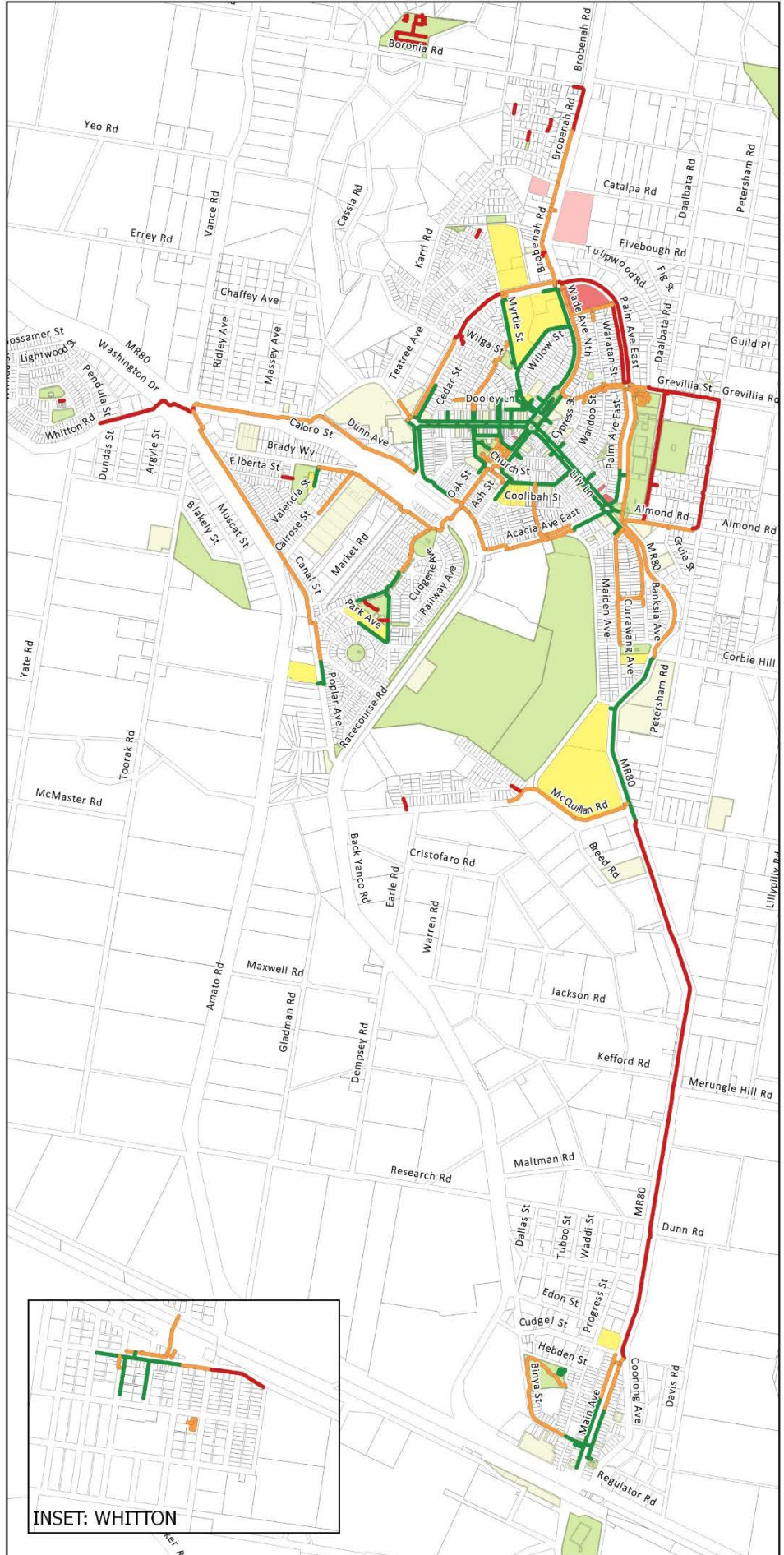
Legend

Footpath Classifications

- Class 1
- Class 2
- Class 3

Health/Schools

- Aged Care
- Health
- School
- Attractions



INSET: WHITTON

Figure 3 - Footpath Network Classifications



Lifecycle Management

Details on the whole of lifecycle management of the footpath network including risk management, condition, maintenance schedule options, renewal planning, and acquisition/disposal indicators.

This section “implements” the Service Levels discussed in the previous section.

Lifecycle Management Generally

The lifecycle of an asset is considered to span from the time of its initial acquisition, through its maintenance and operational life, across renewal/replacement periods, any risks associated with an assets condition during its life, and also to encompass its final disposal. Considering assets in this manner can assist in removing the potential for “cost shocks” during the foreseeable life of the asset.

With this in mind, this section of the Asset Management Plan considers:

- The scope of assets associated with the network,
- The hazard based risk management practices implemented,
- The condition assessment processes that takes place,
- The maintenance planning indicators,
- The renewal planning indicators, and
- Lastly, the considerations for acquisition and disposal of buildings and structures.

Asset Schedule

The Leeton Shire Council footpath network is an extensive asset base. The below table indicates the breakdown of facilities across the portfolio.

	Length (m)	Area (m ²)	Average Condition	Average Construction Date
Class 1				
Footpath	10575 m	22924 m	1.77	1994
Shared Cycleway	2145 m	5362 m	1.29	2011
Class 2				
Footpath	9397 m	13705 m	1.75	1993
Shared Cycleway	8549 m	20829 m	1.38	2011
Class 3				
Footpath	1918 m	2727 m	2.18	1992
Shared Cycleway	6571 m	16455 m	1.32	2010
Total Network Summary	39155 m	82001 m	1.69	

Table 5 - Asset Schedule

Risk Management Planning

Damage caused to footpaths tends to occur over a long timeframe due to low amounts of deformation occurring from pedestrian activity, the action of tree roots, and movements in the soil. From observation, most footpath hazards are caused by the aforementioned tree roots, vehicle movement at driveways and repairs to footpaths following trenching for the provision of services.

One of the primary responsibilities of Local Government is to provide an acceptable level of service for public assets to its Community within budgetary constraints. This responsibility extends to managing the hazards associated with those assets. This Risk (Hazard Based) Management Plan outlines the process of determining the hazards that may be generated on the footpath and shared cycleway network by identifying the use, priority and timeframes to be considered when addressing these hazards. This process is also summarised in a flowchart in the Appendix to this document.

The principle objectives of this Hazard Based Risk Management Plan include:

- To provide safe footpaths and shared Cycleways for the public,
- To enable a system of proactive maintenance (where possible),
- To identify areas that require maintenance through a systematic and prioritised inspection system,
- To facilitate scheduling and resource allocation where required, and
- To establish a priority system for carrying out maintenance works.

Asset Defect Inspections

Inspections are a formalised and sometimes independent assessment of sections of the footpath and shared cycleway network looking for hazards that may require repair and maintenance. It is carried out with regard to current standards and safety principles, by qualified personnel.

There are four (4) types of inspections that Council carries out with respect to hazard identification. Details on these can be found in the appendices to this document. Routine Inspections are the primary type of inspection carried out by Council and represent a proactive method of asset deterioration detection.

Council's routine inspection program is set as per the levels of service determined in Table 1. Frequencies are set based upon segment classification. These frequencies equates to routinely inspecting 28.45km of footpath and shared cycleway per annum. This is equivalent to **inspecting approximately 593m per week** (over a 48 week year).

Defect Risk Control during Inspections

Control of "risk exposure" requires control measures to be implemented. Some of the control measures that Council will be able to use to lessen our exposure to risk are as follows:

- Use of warning signs, warning paint, and lights to alert pedestrians of potential hazard that exists ahead or erection of temporary barriers or barricades and lights around the area until it can be repaired,
- Effecting repair of the damaged area, or
- Planning and allocating resources for the long term replacement of the footpath.

Council officers seek to install these warnings, regarding identified hazards located throughout the network, where such risks may not be clearly apparent. The following figure outlines the typical procedure involved in the inspection, capture, and repair of asset defects.

Defects & Intervention Levels

All defects types and descriptions have been assigned a typical response time. These response times were devised through review sessions of the previous risk management matrix involving key Council Engineering staff. Considered, were factors including risk of injury, risk of asset deterioration, availability of response resources, and the like. Defect & intervention levels are listed in Table 2 under the Service Levels section of this document.

Condition Assessment Framework

Condition is used within Leeton Shire Council as an indicator for renewal works (among other things such as reporting to Government Agencies). An assets condition is measured and considered when identifying assets that require renewal, replacement, or disposal. As such, the assessment methodology adopted is general in nature and considers assets at high (broad generic) levels. Detailed information pertaining to an assets current status is considered to be garnered through the Risk Management inspections and the like.

Leeton Shire Council has adopted a 1-5 rating system (in line with the IIMM) for the condition assessments of its infrastructure. The current condition profile based on inspections carried out in November 2014 is shown in Figure 4.

Current Condition Profile by Classification

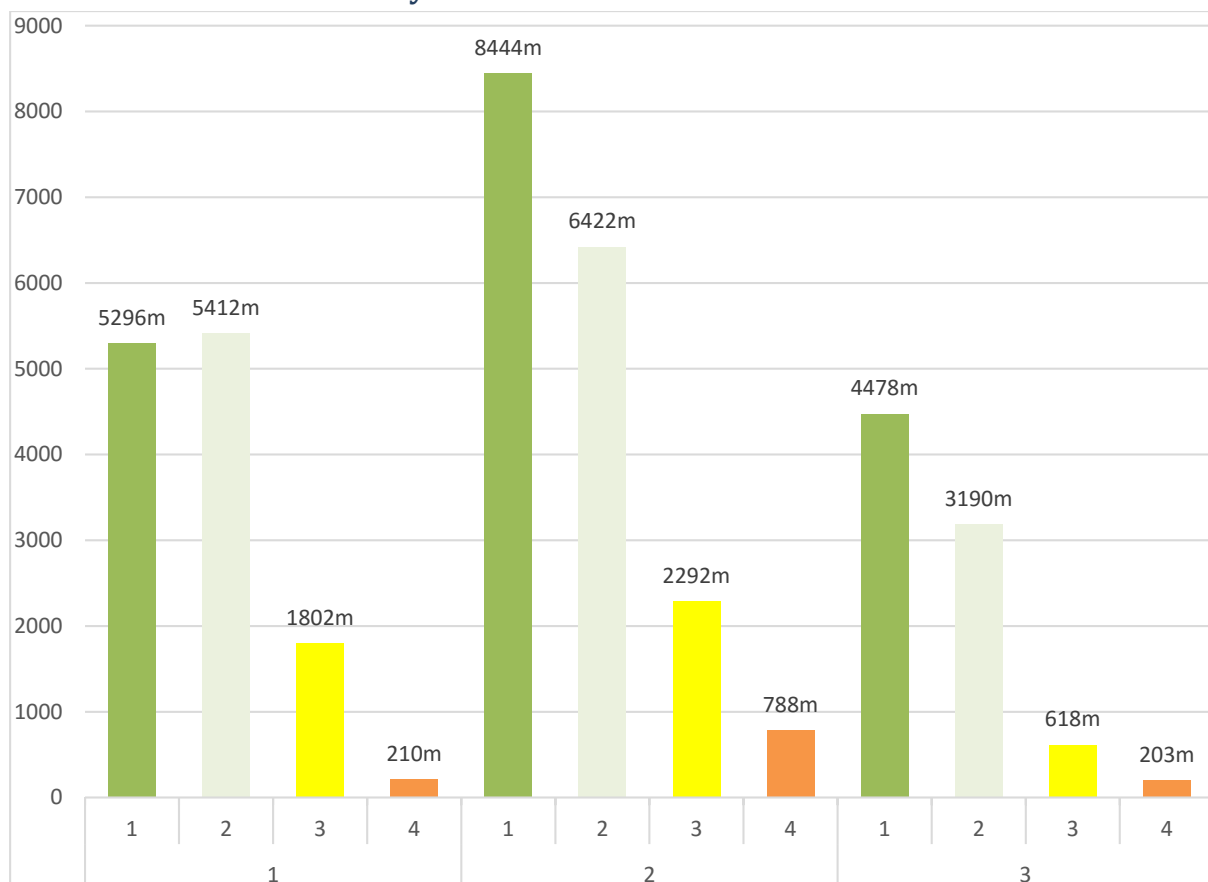


Figure 4- Footpath Condition Profile (Total Area per Condition Rating per Classification)

The results of the above condition profile suggest that the network is in relatively good condition with zero condition 5 segments. It should be noted however, that it is showed that 998m of condition 4 segments are within and surrounding class 1 and 2 zones and are therefore tainting overall perception of the footpath network by their conspicuousness.

Condition Assessment Guide

The next page contains the condition assessment guide currently utilised by asset condition assessment officers. Both pictorial comparison and notation assessment are completed when conducting such inspections. Once again, the goal of condition assessment is to gather information about the “broad” state of the segment or area.

Condition 1 – Excellent

- New condition
- No signs of wear and tear
- Cracking - Nil
- Misalignment - Nil
- Water/Dirt Ponding – Nil
- 0% Defects by Area



Condition 2 – Good

- Still fairly new appearance
- Some signs of wear and tear
- Cracking –Minor
- Misalignment –Minor
- Water/Dirt Ponding –Minor
- 10-20% Defects by Area

Condition 3 – Average (Satisfactory)

- Has reasonable appearance
- Small amount of wear can be seen
- Cracking – Apparent
- Misalignment – Apparent
- Water/Dirt Ponding – Apparent
- 20-30% Defects by Area



Condition 4 – Poor

- Surface showing major wear
- High wear areas (<50% by area)
- Cracking – Noticeable
- Misalignment – Noticeable
- Water/Dirt Ponding – Noticeable
- 30-50% Defects by Area

Condition 5 – Very Poor

- Major structural damage
- Significant wear (> 50% by area)
- Cracking – Regular
- Misalignment – Regular
- Water/Dirt Ponding – Regular
- More than 50% Defects by Area



Figure 5 - Condition Assessment Guide

Maintenance Planning

Maintenance work is categorised in three different ways within Leeton Shire Council; planned maintenance, unplanned maintenance, and cyclic maintenance. The differentiations assist in establishing goals for how an asset is managed.

It is ideal in many circumstances for unplanned maintenance to remain very low. Achieving such a milestone can indicate that a group of assets are being well managed and that current operations should not be altered too much. Conversely, a low proportion of planned maintenance (as compared to unplanned) often suggests that there is an unknown element pertaining to a group of assets and this is causing increased – and potentially unwarranted – workloads. Lastly, cyclic maintenance refers to tasks that are simply “run of the mill” and required for the operational and legislative capacity of the asset.

Planned Maintenance Activities

At present, no works are classified as “planned” for the footpath network. These would normally include works that are completed regardless of defects or identification of need. However, it has been internally acknowledged that potential efficiencies could be gained through planning/scheduling certain maintenance activities. More on this can be found within the improvement plan section of this document.

Unplanned Maintenance Activities

For the extent of the footpath network, the following activities constitute unplanned maintenance:

- Manual Sweeping
- Urgent repairs flagged by incapacitation of the network that may include concrete grinding, jet-patching, cold mix, or sweeping.

The process for these activities involves the issuing of periodical (typically weekly) work request sheets to maintenance supervisors who will program in the works for completion prior to the response time deadline. These work request sheets can be generated automatically from the reflect database and Council GIS to give information such as spatial location, photographs, estimated quantity, and the like.

Following completion of the works, the supervisors will note down information on the request form such as time taken, crew numbers used, and the like. This information is logged into reflect to keep abreast of the costs associated with various activities.

Cyclic Maintenance Activities

For cyclic maintenance activities, defects and/or requests are “built up” per period (typically per quarter) and a list of works is then executed at the one time. This increases service delivery efficiency and in doing so, saves maintenance costs – allowing for more work to be achieved. For the extent of the footpath network, the following activities constitute cyclic maintenance works:

- Concrete Grinding – completed quarterly when works required
- Mechanical Sweeping – completed quarterly when works required
- Jetpatching or Cold Mix repairs – completed quarterly when works required

- Cleaning / Degreasing of footpaths – completed quarterly when works required

The process for these activities is similar to that of unplanned maintenance except that the schedules of work are generated over longer periods.

Renewal Planning

Renewal Planning within Leeton Shire Council is based upon the principles set out in Council's Asset Management Strategy. That is, Renewal Planning is to be carried out utilising a predefined set of indicators as well as the technical expertise of staff. These indicators, when placed into a weighted matrix, will produce prioritised lists of assets requiring renewal works. Such lists are then assessed by technical staff for accuracy and validity. Following Council approval, such renewal programs are then rolled into annual and 4 year works programs.

Following development of the 4 year works program (delivery plan), Council Officers will begin selecting and working on the planning and development of the various renewal works as separate projects to be completed within the year / operational plan. See below for the breakdown of tasks:

1. Council's GIS generates a 4 year works program with budget as the limitation on a year's work.
2. Council staff review this list (as a desktop exercise) for validation.
3. The 4 year program is included in the Asset Management Plan.
4. Council staff review the first year of the program with a view to:
 - a. Assess for overlaps with upcoming upgrades or expansion (within or outside of the current asset class)
 - b. Promote or demote works from/to the year 1 program based on spatial economies (works close to each other), overlaps identified in step 4a, and/or obvious errors within the matrix computation method.
5. Each segment (or group of segments where appropriate) of works within the finalised year 1 program are costed and assessed for any major obstacles and then sent as a package to the engineering construction staff. No renewal works are to take place without the costing and assessment from this step.

Renewal Indicators

The following table outlines the indicators used in determining a footpath segments renewal score. The score is calculated by equalising the results to the same number range and then summing the weighted results of each category as detailed below. An example calculation is shown in Appendix 4: Renewal Indicator Calculations.

Indicator	Detail	Weight
Asset Condition	1 to 5 as per this document	62%
Classification	The inverse of the segment's classification (i.e. 1=3, 2=2, and 3=1)	9%
Asset Age	The age as recorded in the asset register.	8%
Outstanding Defects	The number of incomplete defects per segment	21%

Table 6 - Renewal Indicators

Acquisition/Disposal Planning

Indicators for the necessity of asset acquisition and disposal are found throughout this section of this Detailed Asset Management Plan. Decisions pertaining to the acquisition or disposal of an asset should be carried out with full lifecycle costing of the subject asset in mind. To this end, the following criteria MUST be addressed when submitting a budget proposal, or similar, for capital expansion or upgrade of the Council footpath network.

- Capital cost of the asset,
- Total borrowing costs associated with acquisition of the asset (if any),
- Total capital outlay required for the asset (sum of the above),
- Expected annualised maintenance & operational costs associated with the asset,
- Expected reduction in any existing annualised maintenance & operational costs via efficiency gains or asset rationalisations,
- Expected annualised renewal costs associated with the asset,
- Total annualised lifecycle cost (sum of the above annualised costs),
- Total lifecycle cost (total annualised cost times useful life),
- Forecasted net position after acquisition, and consequences of not acquiring the asset.



Improvement Plan

An assessment of the potential demand factors that could affect the network into the future. This extends to considering capital works programs that respond to these factors.

Demand Forecast & Indicators (Heat, storms, flood, traffic types)

As with any asset, there exist a number of factors both internal and external that can alter the operational capacity or even viability of the asset (or part thereof). These indicators can affect the demand for such assets and are considered in this section. It should be noted that the elements discussed below are done so independent of each other. That is, population impacts are considered in a state that assumes other indicators are stable.

Population & Demographics

Leeton Shire population has remained fairly static for over 20 years at around 12,000, despite the stresses of drought and associated water shortages, periods of flooding and recovery afterwards, and the impacts of global currency pressures.

Being primarily an irrigated agricultural production centre, the economy is heavily affected by these global commodity prices, which fluctuate due to influences not necessarily connected with the environment of the production.

There have been some major industry closures in recent decades, but there have been matching industry establishments, which have meant the employment levels were not overly affected. The closure of the cannery and the subsequent opening of the feedlot and abattoir is an example.

The population structure is fairly unique in that it is artificially increased in the secondary school ages, by the two large boarding schools, then suffers a major fall in the post-secondary school age group due to the bulk of these leaving after Years 11 & 12, and the natural loss of local students of a similar age, going on to tertiary education elsewhere in other centres.

The population is now tending to also increase artificially in the retired age bracket due to the establishment of, and the enlarging of another, aged care facility.

This unique “hour glass” structure means increased demand for assets, both sporting and social, to satisfy these groups, such as sporting fields and facilities, and footpaths for those needing assistance.

Liability & WHS Implications

Every person conducting a business or undertaking (PCBU) has to ensure the ongoing management of work health & safety matters is done effectively. This involves:

- Management commitment,
- Consultation,
- Management of risk,
- Training & Instruction (for employees and volunteers),
- Reporting safety,
- Return to work, and
- Workers Compensation.

The overall increase in compliance with relevant WH&S principles is expected to add to the overall cost of managing Council’s road infrastructure over time.

Other Council Policies

Other Council policies also place demands upon the footpath network. The following policies related to the footpath and shared cycleway network include:

- Leeton Shire Council Pedestrian Access and Mobility Plan (relevant recommendations shown below)
 - **Increased inclusive mobility**
 - Council provide access on foot for as many places as possible, particularly to public buildings and health services.
 - Ensure that as far as practical the construction and maintenance of paths provide acceptable cross fall, grades and other design standards to suit disability requirements.
 - **Well designed and managed spaces and places for people**
 - Ensure vegetation on road verges is managed so as not to inhibit the safe and accessible use of these areas by pedestrians
 - **Increased safety for pedestrians**
 - Ensure pedestrian safety is prioritised in high pedestrian areas and in areas of vulnerable road users (e.g. schools, aged care, CBD)
 - Review lighting along paths and trial new technologies to improve delineation
- Leeton Shire Council Capitalisation Policy (currently in preparation)

Responses to Demand Indicators

The above demand indicators cannot be ignored – they are real impacts on Council’s infrastructure network. For this reason, Council considers various responses to such indicators in the categories of operational and capital. Operational responses include modification to work practices to address demand implications. Capital responses consider rationalisation, upgrades, or expansion to address such demand implications. Some demand indicators require to be considered in both categories.

Operational Response: Risk Inspection Review

As a part of developing this document, a review of the hazard based risk management practices have been undertaken. This review, it is believe, has also addressed one of the above demand indicators – specifically, the Liability portion. The following were outcomes of this review:

- A review of the classification system saw an extension to the class 1 network to include areas adjacent schools and medical centres. This means that these areas will be more frequently scrutinised by inspectors.
- Defect categories were simplified and rationalised. This has decreased the number of potential hazards that may be picked up during an inspection for repair without removing identification of active risks. This should improve the quality of the footpath network.

Operational Response: A Move to Increased Renewal Spends

Within this document, it is apparent that the current maintenance/renewal split in the budget is not suited to the required mix of the network. As a result of this realisation, this plan (once adopted) will see Council focusing more on footpath replacement than maintenance and upgrade. This will

improve the overall condition profile of the network in all areas and make it safer for all demographics.

Planned (future) Response to Demand Indicators

Improvement Response: Consideration of Various Service Level Scenarios

Council will strive to enable to consideration of various intervention levels within its GIS. This will involve the building of various computations and mapping features to support this analysis. Future iterations of this plan will then be populated with these varying scenarios to inform residents as to why current scenarios are utilised.

Improvement Response: Perambulator Assessment and Upgrade

As a part of the risk inspection review, a number of defect categories for non-conforming perambulator ramps were removed. The basis of this decision was that Council will undergo a thorough review of its perambulator network with a view to upgrade and replace existing installations so that they can comply. This was seen as a more suitable “direct action” approach to this problem.

Improvement Response: Increase in Planned Maintenance

An assessment of the viability of various maintenance activities being rolled over the planned maintenance tasks will be undertaken by Council’s GIS and Assets Department. The goal of this would be to reduce reliance on defect inspections by proactively servicing areas of footpath and shared cycleway periodically. One particular example that can be used is concrete grinding. The process through which planned maintenance would function for concrete grinding is as follows:

- Footpaths are broken down by classification and location into various work groups or routes.
- Each work group / route is assigned a frequency and scheduled for completion.
- Staff/Contractors are issued work instructions to grind any trip hazards over a predetermined threshold of height along the selected route.
- Asset inspectors assess the route AFTER the planned works have been completed to ensure all defects have been appropriately targeted.

Essentially this would move the inspector’s role from a ‘beforehand’ role to an ‘after the fact’ role.

Improvement Response: Review of Design & Construction Standards

In any construction activity, there is always room for investigating areas for improved efficiencies and design. As a part of the improvement process under this Asset Management Plan, the following areas will be researched:

- The feasibility of the use of ‘fibre mesh’ in lieu of slab mesh.
- The benefits of running conduits beneath footpath installations to cater for potential future service demands.

Improvement Response: Pre-Emptive Defect Capture

A part of this Asset Management Plan was to include the cause of defect in the documentation when inspecting footpaths. The purpose of this is to enable the assessment of potential prevention of asset defects. For example, targeting the removal of tree roots if they are the primary cause of trip hazards in a concrete path.

Improvement Response: Measurable Condition Assessments

Currently, the assessment methodology for condition capture is a merit based one. That is, the inspector uses discretion to determine which category a particular segment may fit into. Moving to a measurable method would involve the quantification of the various factors that cause a footpath to worsen in condition.



Financial Impacts

An assessment of the financial factors that could affect the network into the future.

Capitalisation

The Footpath network is an extensive network with a considerable replacement cost. Table 7 below outlines the current replacement cost as well as the carrying value for the footpath network as of today. **These values reflect the current intervention stages that each asset is at.**

	CRC	Annual Dep.	Accumulated Dep.	Carrying Value
Class 1				
Footpath	\$2,343,335	\$24,803	\$547,368	\$1,795,967
Shared Cycleway	\$243,760	\$2,845	\$13,651	\$230,109
Class 2				
Footpath	\$1,380,901	\$13,907	\$306,512	\$1,074,389
Shared Cycleway	\$824,807	\$10,017	\$34,758	\$790,049
Class 3				
Footpath	\$279,105	\$2,791	\$69,586	\$209,519
Shared Cycleway	\$570,752	\$7,289	\$29,007	\$541,745
Total Network Summary	\$5,642,659	\$61,653	\$1,000,882	\$4,641,777

Table 7 - Asset Valuation Schedule as at 1 July 2015

Long Term Forecast

Investigating Table 8 and Table 9, we can forecast the expected results for future years based on the current expenditure trends and network deterioration. Firstly, it should be noted that Table 8 highlights an over expenditure on footpath maintenance. With this in mind, (2) two scenarios are presented below. The second of these tables (Table 9 - the ideal scenario), is shown in Figure 6.

Year	Planned Maint	Required Maint.	Planned Renewal	Required Renewal	Est. BTS	Total Cost
2015/16	\$51,000	\$28,755	\$46,530	\$61,748	\$17,228.04	\$97,530
2016/17	\$51,000	\$28,755	\$46,530	\$61,748	\$32,446.01	\$97,530
2017/18	\$51,000	\$28,755	\$46,530	\$61,748	\$47,663.98	\$97,530
2018/19	\$51,000	\$28,755	\$46,530	\$61,748	\$62,881.95	\$97,530
2019/20	\$51,000	\$28,755	\$46,530	\$61,748	\$78,099.92	\$97,530
2020/21	\$51,000	\$28,755	\$46,530	\$61,748	\$93,317.89	\$97,530
2021/22	\$51,000	\$28,755	\$46,530	\$61,748	\$108,535.86	\$97,530
2022/23	\$51,000	\$28,755	\$46,530	\$61,748	\$123,753.83	\$97,530
2023/24	\$51,000	\$28,755	\$46,530	\$61,748	\$138,971.80	\$97,530
2024/25	\$51,000	\$28,755	\$46,530	\$61,748	\$154,189.77	\$97,530

Table 8 – Current Trending Long Term Asset Forecast

Year	Planned Maint.	Required Maint.	Planned Renewal	Required Renewal	Est. BTS	Total Cost
2015/16	\$28,755	\$28,755	\$68,775	\$61,748	\$17,228.04	\$97,530
2016/17	\$28,755	\$28,755	\$68,775	\$61,748	\$10,200.81	\$97,530
2017/18	\$28,755	\$28,755	\$68,775	\$61,748	\$3,173.58	\$97,530
2018/19	\$28,755	\$28,755	\$64,922	\$61,748	\$0.00	\$93,676
2019/20	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503
2020/21	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503
2021/22	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503
2022/23	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503
2023/24	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503
2024/25	\$28,755	\$28,755	\$61,748	\$61,748	\$0.00	\$90,503

Table 9 – Ideally Weighted Long Term Asset Forecast

Recovery Plan

The following figure brings together much of the information pertained within this Asset Management Plan to develop a 'recovery plan' for the Asset Network. **This is a graphical representation of what is shown in Table 9 above.**

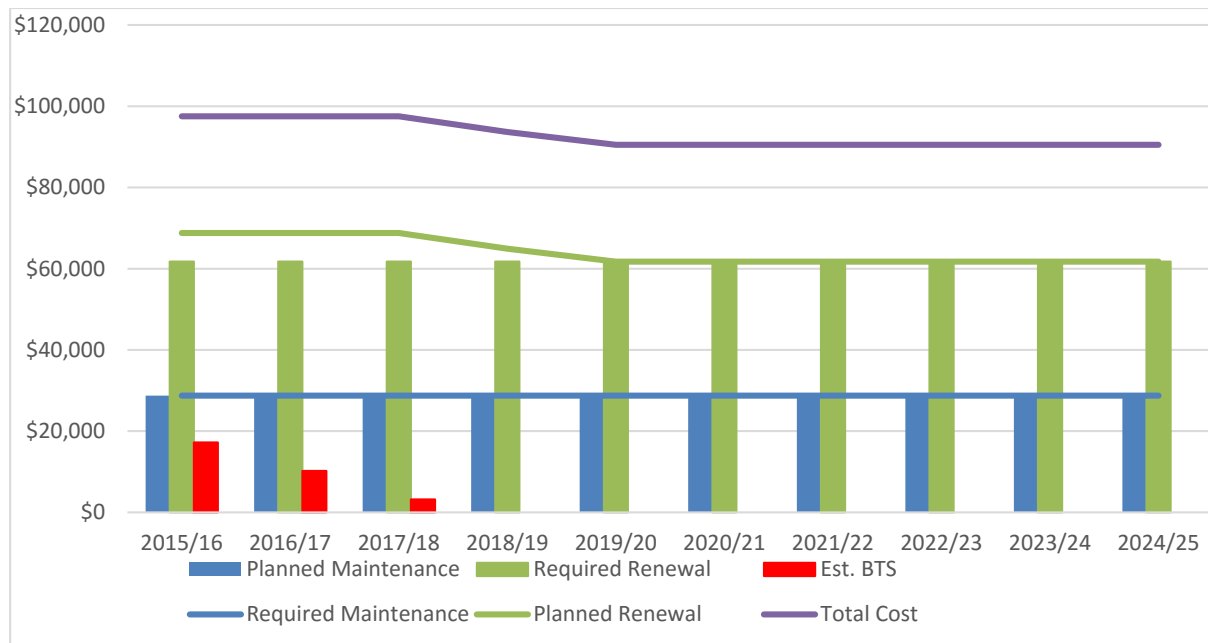


Figure 6 - Ideally Weighted Long Term Forecast

As evident, an adjustment in the allocation of funds from maintenance to renewal over the **next 3 years** will see a total reduction in the cost of the footpath network to Council of 10%. Further to this, it can also be assumed (although not modelled above) that maintenance expenditure will reduce from the 4th year onward.

Special Schedule 7

Each Local Council is required to report details pertaining to its asset base in an annual special schedule called SS7. This schedule covers the estimated cost to bring the network to a satisfactory condition, the value of assets in particular condition bands as a percentage of written down value, as well as the current and required maintenance levels.

Historically, the lack of clear guidance on how the “Bring to Satisfactory Figure” is to be calculated has caused a lack of confidence in the figures generated. Council has taken an approach whereby the rules imposed by the Office of Local Government are followed with a rational/defendable calculation methodology. That is, the Office of Local Government stipulate that for Council’s who have not sought to qualify the level that is deemed satisfactory by their community (through consultation) then satisfactory shall be set at “second condition rating of Good” which is further defined as “Only minor maintenance work required”. Against the condition profiles used by Council shown in Figure 4, this aligns best with Condition 3 assets within the Leeton Shire Council Footpath Network. For this reason, **Council sets Condition Level 3 as the Satisfactory Measure for BTS.**

Once the satisfactory condition level is established, Council must determine what constitutes the cost of works to return assets below said level, to the satisfactory condition. The following graphic

(developed by Morrison Low during Council’s Fit for the Future engagement) outlines the methodology used in determining the “value” of works required.

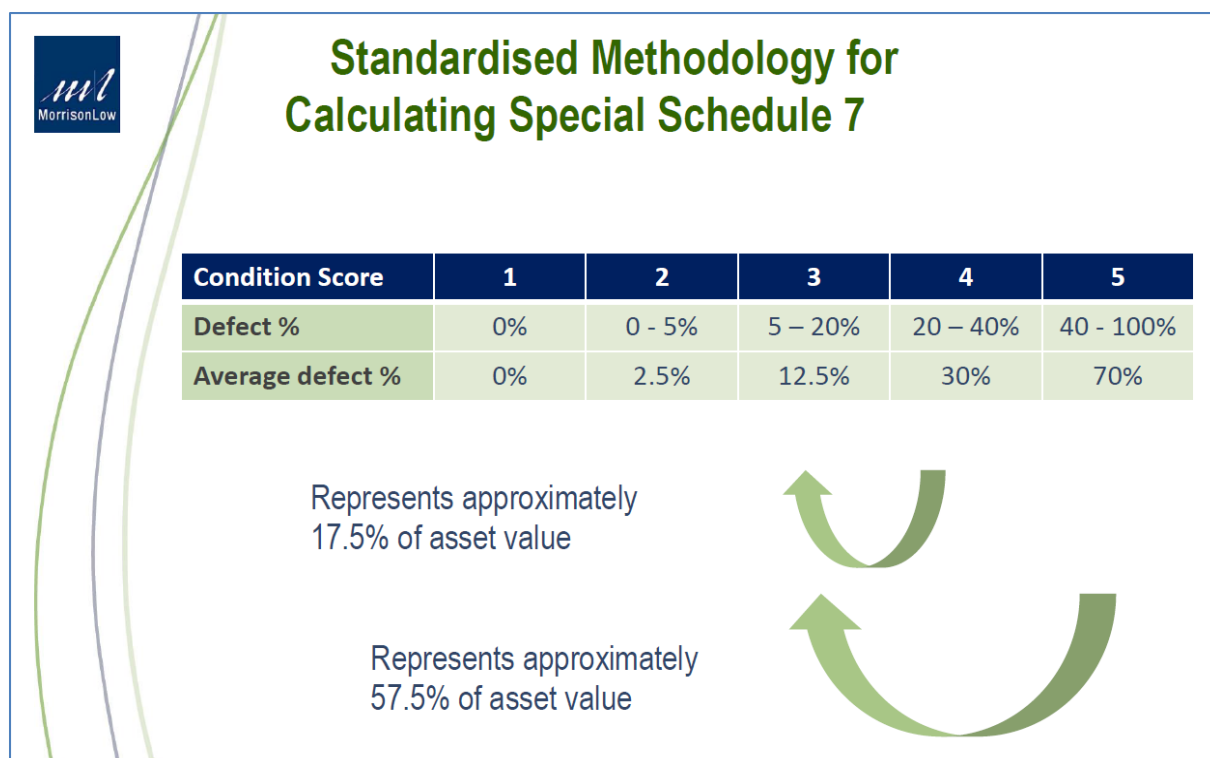


Figure 7 - Cost to BTS (Morrison Low)

As shown in the above figure, the cost to return to a satisfactory level is deemed to be the difference in respective defect %’s. That is, for Council’s footpath network, a Condition 3 asset is expected to have 20-30% defect coverage whilst a condition 4 asset is assumed to have in the range of 30-50%. The difference between the averages of these two represent the percentage of Current Replacement Cost that would have to be spent to return the asset to a ‘Satisfactory’ Condition. In the case of **Condition 4 assets it is 15%** (40% to 25%). In the case of **Condition 5 footpath assets, it is 50%** (75% to 25%).

Required Annual Maintenance is simply measured by the total cost of Maintenance Activities shown in Table 1. That is, Required Maintenance is equal to the Total Annual Maintenance as per the planned current levels of service.

Asset Condition	Assets in Condition as % of WDV	Assets in Condition as % of CRC	Est. Cost to BTS (\$,000)
1	53.62%	49.18%	-
2	32.72%	35.44%	-
3	11.99%	13.35%	-
4	1.67%	2.03%	\$17.23
5	0.00%	0.00%	\$0.00
Total Estimated Cost to BTS			\$17.23
Written Down Value (\$,000)			\$4,649.21
Required Annual Maintenance (\$,000)			\$28.75
Actual Annual Maintenance (\$,000)			\$51.00

Required Annual Renewal - Annual Depreciation (\$,000)	\$61.75
Actual Annual Renewal in 2015 (\$,000)	\$46.53

Table 10 - Special Schedule 7


* See Table 9 for details of long term renewal forecasts

Current Renewal Program

The current delivery plan renewal program is shown below (in Table 11 and Figure 8). It should be stated that the 4 year plan is a guide only – based on the above algorithm - and may not reflect actual works to be completed in the future.

Footpath ID	Length	Est. Cost	Renewal Score	Year
LFP.115.020.FOT001 (Complete)	56.3	\$10,373	3.539	2015/16
LFP.144.070.FOT002	120.3	\$43,084	3.468	2015/16
LFP.129.010.FOT001	52.8	\$1,434	3.180	2015/16
LFP.106.010.FOT001	39.8	\$24,456	3.140	2015/16
LFP.102.050.FOT001	19.7	\$7,052	3.054	2016/17
LFP.102.050.FOT002	59.5	\$21,300	3.054	2016/17
LFP.105.050.FOT002	34.4	\$10,554	3.042	2016/17
LFP.127.030.SHD004	87.2	\$2,819	2.970	2016/17
LFP.108.010.FOT001	51.6	\$26,384	2.943	2016/17
LFP.104.010.FOT001	32.3	\$8,255	2.943	2017/18
LFP.141.010.SHD002	277.1	\$8,961	2.940	2017/18
LFP.141.020.SHD001	349.1	\$11,290	2.940	2017/18
LFP.141.020.SHD002	109.2	\$3,533	2.940	2017/18
LFP.139.010.FOT001	55.1	\$5,637	2.850	2017/18
LFP.146.060.FOT002	60.8	\$7,472	2.742	2017/18
LFP.101.010.FOT001	23.1	\$9,455	2.710	2017/18
LFP.126.020.FOT001	448.6	\$55,107	2.698	2018/19





Table 11- Footpath Renewal Program

 **LEETON SHIRE COUNCIL**

Footpath Replacement Delivery Program

Legend

Delivery Program

-  2015/16
-  2016/17
-  2017/18
-  2018/19

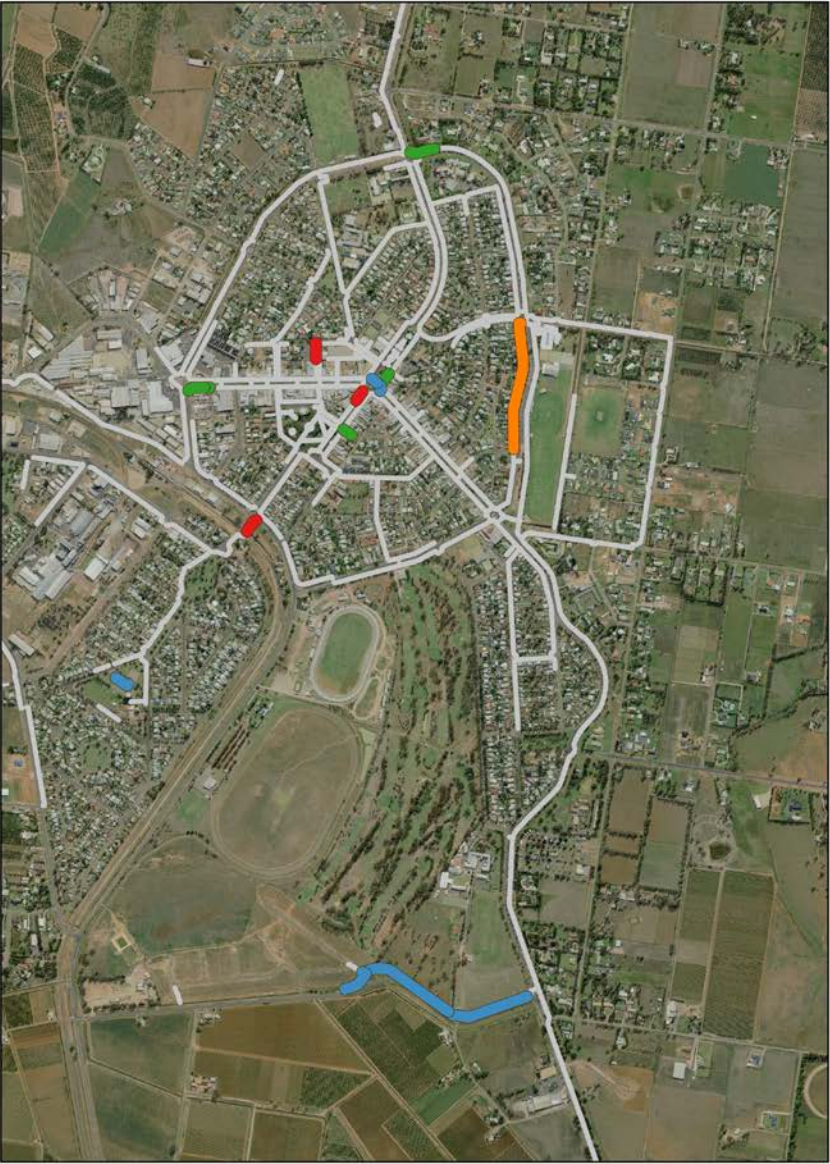


Figure 8 - 4 Year Delivery Program

Appendix 1: Classification of Footpaths & Cycleways

Methodology

The following outlines the method used in applying classifications to the footpath network:

1. Calculates the number of intersects between Attractors/Generators and a buffer of the footpath centreline to the prescribed distance satisfying 'adjacent'.
2. Breaks out the Attractors/Generators into the various sub-groups and calculates those footpath segments that are 'adjacent' such Attractors/Generators.
3. Performs spherical buffers on the footpath network, and counts the number of intersects with any Attractors/Generators to determine footpath segment proximities to said Attractors/Generators.
4. Concatenates the results of each of the above processes and sums the total score for each footpath segment.
5. Divides the results into three (3) hierarchical groups based on the score ranges shown in Table 4.
6. A manual process of 'hierarchy smoothing' is then conducted whereby higher rated footpath classifications are extended radially outwards from a CBD area. That is, no class 1 footpaths may exist in isolation, but rather, are linked to the CBD via other class 1 footpaths. Furthermore, classifications shall reduce in classification singularly. That is, a class 1 footpath cannot be adjacent a class 3. In upscaling any classifications, the 'highest class' route to the CBD is taken. Appendix 1 shows the original calculated classifications, prior to the smoothing operation.

Appendix 2: Risk Management Inspections

Types of Inspections

Routine Inspections

The purpose of these inspections is to identify:

- Those assets that have defects,
- The location of the defect, and
- The severity of the defects.

The above sources of information allow council to gauge and monitor the general condition of the footpath and shared cycleway network. Without this information, it is impossible to have a true and accurate picture of the condition of the network over time and therefore to assess and control the level of risk that council is exposed to.

The inspections are recorded using Computer Software with GPS capabilities (i.e. Reflect). Defects identified during the inspections are to be treated in accordance with this Plan.

Supplementary Inspection

The supplementary inspections are performed in addition to Routine Inspections. These inspections may be performed for the following reasons:

- Following a storm event, flood, bushfire or the like that may increase the degradation of an asset.
- Review / audit of previously completed Routine Inspections
- Inspection seeking a specific defect type
- An inspection completed while driving to or from a routine inspection on a different asset.
- Conduct an additional inspection on suspect third party repairs
- Inspection of a specific condition high maintenance area

External Inspection Request

Requests from the public are a valuable source of knowledge about the state of the footpath and shared cycleway network between routine inspections. Each inspection request is registered by Council's Customer Request Management (CRM) system and forwarded accordingly to the appropriate officer. This inspection request will record the following:

1. Unique Request Number (*Auto-Generated*)
2. Date Received
3. Client Name
4. Client Contact Details
5. General Location
6. Defect Type
7. Defect Description
8. Cause of the Defect (***New***)
9. Receiving Officer
10. Responsible Council Officer
11. Investigation Result
12. Prevention measures possible (*if any*)

13. Action recommended
14. Completion date
15. Responsible Officers signature and date

Each request is assigned to a responsible officer who will investigate the request by making a physical inspection of the site, recording the details of the inspection on the inspection request sheet. Any defects found during the inspection are recorded in the “Reflect” system to be programmed for appropriate repairs.

Externally requested inspections will be completed within 10 working days after receiving the inspection request. In the event of an emergency, notification of the request will be made to the responsible officer by phone.

Internal Inspection Request

Councillors, Council staff & other Council representatives regularly travel to various locations throughout the shire. During their travel, council staff are encouraged to report any defects encountered. Once an inspection request is logged, it is handled in the same manner as an External Inspection Request.

Responsibilities

The following details the associated responsibilities and processes associated with various inspection types.

Routine Inspections

Inspections are programmed in accordance with Table 1. Inspections shall be carried out by appropriately qualified staff experienced in footpath and shared cycleway inspections using “Reflect” on a suitable mobile device. Risk control mechanisms will be implemented where possible. “Reflect” will compile a priority list of defects with a due date assigned to each defect in accordance with Table 2.

The inspection officer shall then pass the prioritised list on to the relevant works supervisor who is responsible for programming the works to ensure that the response times are met. When this work is complete, the works supervisors shall complete daily running sheets and return these to the inspection officer.

After receiving the daily running sheets, the inspection officer shall record the accomplishment in “Reflect”, thus closing off the defect. It should be noted, that in circumstances where supervisors have access to “Reflect” accomplishments in the field (on a mobile device) then that supervisor shall directly sign off the accomplishment at time of completion in lieu of passing daily running sheets to the inspection officer.

External & Internal Request Inspections

Council’s Customer Request Management System (Civica’s Authority CRM) will forward appropriate requests to the inspection officer. The inspection officer, at this time, shall perform an inspection and schedule any required works as per the above ‘Routine Inspection’ methodology. Following the accomplishment sign off in “Reflect”, the CRM shall also be signed off as complete and appropriate notifications (to the public) shall be made.

Appendix 3: Risk Management Flowchart

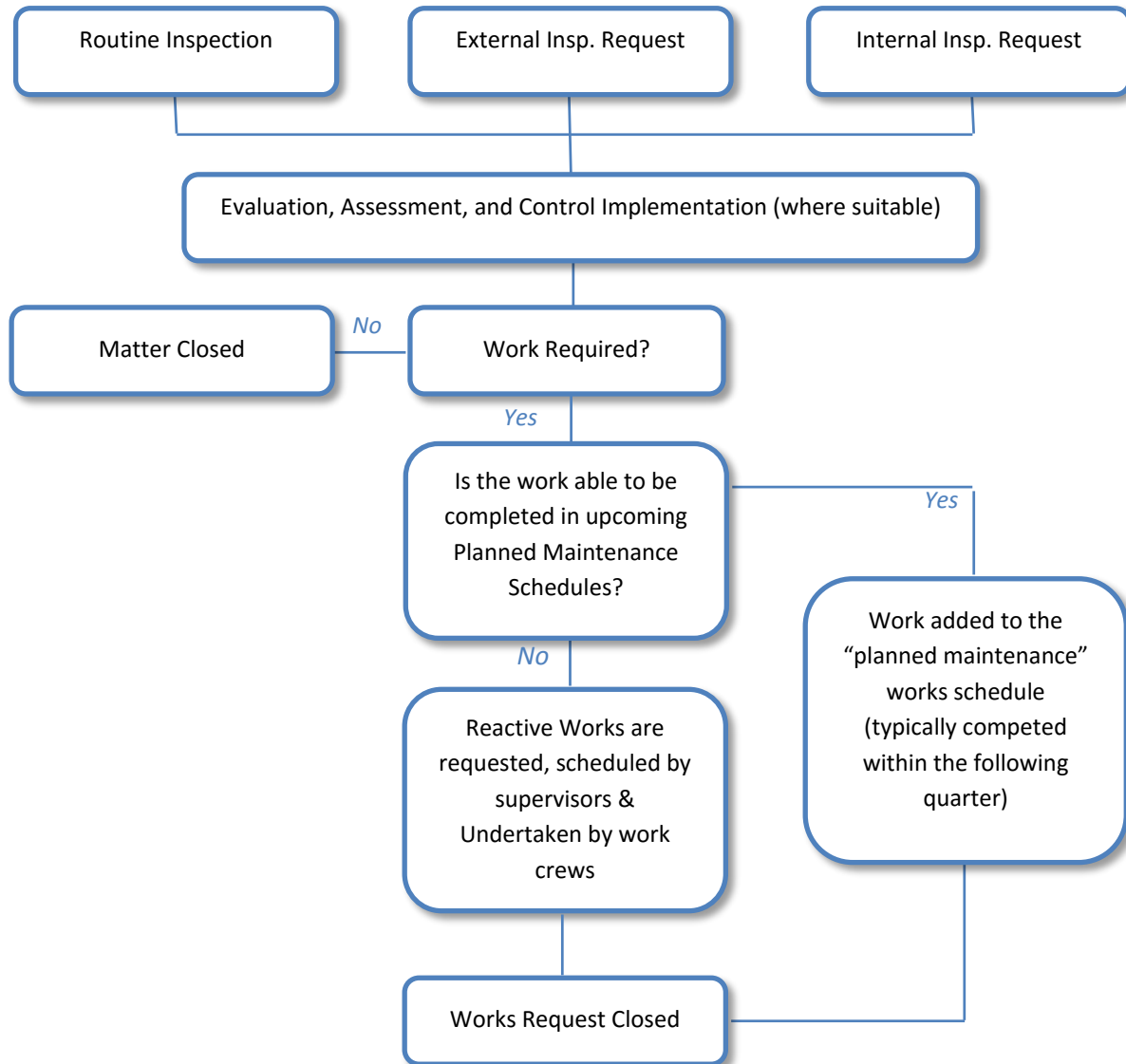


Figure 9 – Inspection to Maintenance Flowchart

Appendix 4: Renewal Indicator Calculations

Each of the renewal indicators are first converted to a 1-5 rating against the indicator's min and max range. That is, condition ranges from 1-5, therefore the indicator rating can simply be the condition score. Classifications however, range from 1-3; therefore the inverse classifications (indicators) must each be divided by 3/5^{ths} to yield results out of 5.

To highlight how renewal factors function, the following example is given. Consider a class 1 footpath of very poor condition (condition 5), and is 65 years old. The segment has zero outstanding defects. This 50m segment of footpath would yield a renewal score as follows:

$$\begin{aligned}\text{Renewal Score} &= (5 \times 62\%) + \{(3 \div (3/5) \times 9\%\} + \{(65 \div (100/5) \times 8\%\} + \{(0 \div (100/5) \times 21\%\} \\ &= 3.1 + 0.45 + 0.26 + 0 \\ &= 3.81 \text{ out of a possible 5 points.}\end{aligned}$$

The above algorithms are automatically calculated by Council's GIS.