Barcaldine Regional Council
71 Ash Street BARCALDINE QLD 4725

FOOTPATH MAINTENACE LEVEL OF SERVICE MANUAL

Adopted by Council on
Reference No:.....

Contents

1 INTRODUCTION

This document defines the Barcaldine Regional Councils Maintenance Levels of Service for its footpaths, Bridleways and cycle ways. It is based upon the best practice methods iterated in the International Infrastructure Management Manual 2006.

1.1 Definitions

Public Footpath:
A footpath is a type of thoroughfare that is intended primary for use by pedestrians, but not other forms of traffic such as motorized vehicles.

Public Bridleway:
A way over which the public have rights of way on foot, bicycle and on horseback, or when leading horses.

Public Cycle way:
A path or road for bicycles and not motor vehicles

For the purpose of this document all the above shall all be referred to as “footpaths”

1.2 Footpath Service Hierarchy

Footpaths are classified according to a specific service hierarchy which is based on its purpose, characteristics and utilisation. An explanation of the Service Level Hierarchy, function and agreed service level is defined in the table 1 below.

Service Hierarchy forms the basis of the Barcaldine Regional Councils approach to providing appropriate maintenance regime for the footpaths within the Councils boundaries.

1.3 Level of Service

The Level of service (LoS) is a measure used in the management of infrastructure to measure its 'fit for purpose’, and defines the quality of a particular asset. The Service requirements are detailed below in Table 1

Table 1: BRC Footpath Hierarchy & Service Levels

Pathways Hierarchy	Service Function Description	Agreed Service Requirements	Typical Image
High	▶Predominantly for high pedestrian /cyclist in high use areas ▶Pathways located in the CBD or in the vicinity of Schools (Primary and secondary, Retail outlets	▶Pavers, minimum 3.0m wide without nature strip, or ▶Concrete, minimum 2.0m wide with or without nature strip, or Sealed, Cycle way incorporated as part of a sealed road	
Medium	▶Predominantly for high pedestrian / cyclist volumes in medium use areas ▶Reserves, Open Spaces and Parks. ▶Can be used by horse and rider	▶ Concrete Pathways, 2.0m wide with or without nature strip. ▶ Natural material nature strip	
Low	▶Provides predominantly for low pedestrian /cyclist/ volumes in local streets ▶Pathways located in the industrial, residential and rural residential areas. ▶Can be used by horse and rider	▶ Natural material nature strip	

2.0 CONDITION ASSESSMENTS

Condition assessments are carried out for the following reasons:

- To determine where sections of the network may need renewal/replacement.
- To assist strategic asset management planning and long term financial planning for the orderly maintenance/renewal of existing footpaths and to assess future demand for new assets.
- To maintain asset inventories and determine the value of the asset portfolio.

Undertaking footpath network condition assessments allows monitoring of the whole footpath portfolio over time, to then assess the rate of deterioration in terms of averaging across the whole portfolio. Thorough consideration of appropriate levels of service targets, long term action plans, including the allocation of necessary funding, can then be determined to enable the achievement of those targets.

There are three footpath surface types used in BRC; concrete, brick pavers and various types of gravel. Concrete paths can also be constructed as reinforced or unreinforced and also at various thicknesses which impact on the life of the path. The construction of the path has an impact on the service life of the path, maintenance costs, renewal costs and resurfacing costs.

As well the type of repair of a damaged path varies in nature and method depending on the surface type. The life expectancy of each surface type is shown in Table 2. These figures were derived using the Australian Accounting Standards Board (AASB) documents, AASB 116 Property, Plant and Equipment and AASB Impairment of Assets. Table 2 also has details of the length and constructed area of each surface type.

The life of the asset is based on the predominant average years based on the network model. At the end of life the footpath treatment is expected to be full renewal. However, the model allows for maintenance or partial rehabilitation which at times may include grinding of joints between bays or replacement of small sections or bays of the path.

Table 2 – Life Expectancy of Footpath Types

Footpath Surface	Type Life Expectancy (years)	Length (m)
Concrete (includes CBD standard sawn concrete)	60	TBA
Segmental (Brick) Pavers	30	TBA
Gravel	20	TBA
Nature ways (unformed)	100	TBA
Total		TBA

***** Derived using AASB 116 Property, Plant and Equipment & AASB 136 Impairment of Assets

Condition Assessments are recorded during routine inspections conducted the defects on single units along the footpath and at the end of each segment a condition rating of the entire segment is determined based on the following criteria:

Table 3: Condition Rating

Condition	Description
1	Excellent condition - Brand new footpath in perfect condition Level surface (Deviations < 5 mm), no cracks or unevenness.
2	Good condition - a number of defects are visible, but is still quite serviceable Deviations of 5 to 9 mm between slab, grinding or strip patching will extend life considerably.
3	Average condition - quite a few obvious defects are visible Deviation of between 10 and 24 mm between slabs. Could be replaced if grinding is not an option. Some cracks and unevenness in the surface
4	Poor Condition - should be referred to capital works program for reconstruction or removed Deviation s of 25 to 50mm between slabs. Dangerous surface, replacement required. Large cracks, uneven, worn & slippery surface
5	Unrated condition – immediate action required for replacement or removal Deviations of greater than 50mm, severely cracked or broken surface
6	**Overhanging Trees:** Overhanging trees to be pruned when below approximately 2.1m vertical clearance over paths. Property owners to be notified where private trees are the problem **Obstruction:** Obstructions to be cleared if the protrusion onto or over the footpath is within 100mm of the edge of the footpath.

See appendix A for condition service targets

In practice, the great majority of footpath defects are to fixed one or two panels at a time under maintenance, and the overall condition scores for footpath segments rarely if ever drop below three.

3.0 INSPECTION PROCESS – PROACTIVE MAINTENANCE

3.1 Footpath Proactive Inspection Regime

It is not practical nor economically feasible to react to all matters with equal priority; therefore, proactive and remediation work responses and resolution times are derived using risk assessment of the roads within the Councils boundaries in terms of purpose, utilisation, likelihood & consequence of negative events.

The proactive footpath inspection regime is based on two (2) tiers of inspection, these being:

- Tier 1 – Detailed inspections carried out by foot during normal weather conditions, supplemented by vehicle inspections after specific rain events and augmented by Customer Service Requests (see section 4.0); and
- Tier 2 – Detailed inspections based on the findings from any of the Tier 1 inspection outcomes.

Table 4: Tier 1 Inspection Hierarchy and frequency

Hierarchy	**Normal conditions.** **Foot based**	**Specific Rain event** **Vehicle based**
High	6 Month	Priority when Accessibly Safe
Medium	12 Monthly	Priority when Accessibly Safe
Low	24 Monthly	When Accessibly Safe

Foot based inspections involve walking the footpath and looking for signs of condition failure in the surface of the footpath, drop off along the shoulders, the entrance to and exit to / from streets, and any other visible deformities within the designated footpath area.

Vehicle based inspections involve driving adjacent to the footpath and looking for signs of storm water damage in the surface of the footpath, drop off along the shoulders, the entrance to and exit to / from streets, and any other visible deformities within the designated footpath area.

Vehicle based inspections or customer request initiated inspections **do not** automatically replace the need to undertake the normal tier 1 inspection.

Tier 1 inspections will be supplemented with Tier 2 spot checks as determined by the Engineering Department and staff availability.

Adverse findings from proactive inspections are rated depending on the consequential impact to Council as detailed in table 5 below.

Table 5: Priority Score

PRIORITY SCORE	CONSEQUENTIAL IMPACT
1	**Extreme:** impact on community mobility and safety, financial loss through decreased commercial activity and possibility of further damage to the asset
2	**High** impact on community mobility and safety, financial loss through decreased commercial activity and possibility of further damage to the asset
3	**Medium** impact on community mobility and safety, financial loss through decreased commercial activity and possibility of further damage to the asset
4	**Low** impact on community mobility and safety, little or no financial loss through decreased commercial activity.
5	**Very Low:** impact on community mobility and safety,

The priority score from table 5 above combined with the condition rating from table 3 result in the determination of a risk score as detailed in Table 6 below:

Table 6: Risk Rating

Easy Guide to Assessing Footpath Risk Rating			PRIORITY SCORE	1	2	3	4	5
			Lighting	Excellent	Good	Adequate	Inadequate	No Artificial Lighting
			Shadows	No Shadows	Little Shadow	Some Shadow	Medium Shadow	Heavy Shadow
CONDITION RATING	Trip Size (mm)	Unevenness	Slipperiness	**If rating in the shaded area, you must consider the volume of traffic and the location of the footpath. If they are important, go to the next level up.**				
6	N/A	N/A	N/A	VH	VH	VH	VH	VH
5	>50	Extreme	Extreme	VH	VH	VH	VH	VH
4	26 to 50	Very	Very	H	H	H	VH	VH
3	11 to 25	Uneven	Uneven	H	H	H	H	VH
2	5 to 10	Slight	Slight	M	M	M	H	H
1	<5	Smooth	None	L	L	L	M	M

3.2 Priority Response Times

The severity of a defect ultimately determines the reaction time by which Council will endeavour to repair these defects. In some cases council may be forced to close footpaths or cycle ways until repairs can be carried out. The table below details the priority score based on the consequential impact to Council.

Tier two (2) inspections are to take place at the end of the Repair / Replacement period or on completion of the work should this be prior to the end of the period.

Table 7: Desired response Times

Hierarchy	VH		H		M		L	
	Make safe	**Repair / Replace**	**Make safe**	**Repair / Replace**	**Make safe**	**Repair / Replace**	**Make safe**	**Repair/ Replace**
High Usage	4 hours	1 day	1 day	3 days	N/A	15 days	N/A	Programmed
Medium Usage	4 Hours	3 days	1 day	7 days	N/A	1 Month	N/A	Programmed
Low usage	4 hours	7 days	1 day	15 days	N/A	2 Months	N/A	Programmed

4.0 CUSTOMER SERVICE REQUEST – REACTIVE MAINTENANCE

Reactive inspections will be undertaken as a result of public requests, reported incidents or insurance claims. Barcaldine regional Council's customer service request system, records all requests from customers including details of faults and location. In accordance with this Footpath Asset Management Plan, Barcaldine Regional Council officers will inspect a reported fault, incident or claim as per the times in Table 10.

As is the case with any asset, footpath requests for work may be regarded as urgent by individuals, however, the Barcaldine Regional Council has determined a consistent, unbiased and repeatable method of determining urgency of repairs on the location of the defect and the degree of its severity and likely consequence. Table 8 below is a guide to Barcaldine Regional Council's definition for 'urgent' and when a classification is regarded as such.

Table 8 – Definition of Urgent

Criteria	Assessment
Insurance claim lodged with BRC	Classified as urgent
Defect significantly exceeds defined intervention level (Table 6)	Classified as urgent
Over hanging trees or Obstructions to users (wheel chairs & prams)	Classified as urgent
CSR lodged with Council	Classified as urgent

Response times for an initial inspection of a footpaths resulting from an insurance claim or CSR is dependent on the service hierarchy and the level of services as determined in Section 1 above. Note response times for repairs vary to the response time for tier on inspections.

Table 9 – Response times

Classification	Action time for CSR	Response time for Urgent works	Response time for non-urgent works
High Usage	Inspect within 2 day	Provide reasonable warning signs, barricades or temporary repairs within one working day. Repair within one week.	Identified defects are prioritised and repaired within 12 months of Inspection date. Priority on repair in a 12 month program is locality based for practical purposes.
Medium Usage	Inspect within 5 days	Provide reasonable warning signs, barricades or temporary repairs within three working days. Repair within four weeks.	
Low Usage	Inspect within 7 days	Provide reasonable warning signs, barricades or temporary repairs within seven working days. Repair within eight weeks.	

Notes:

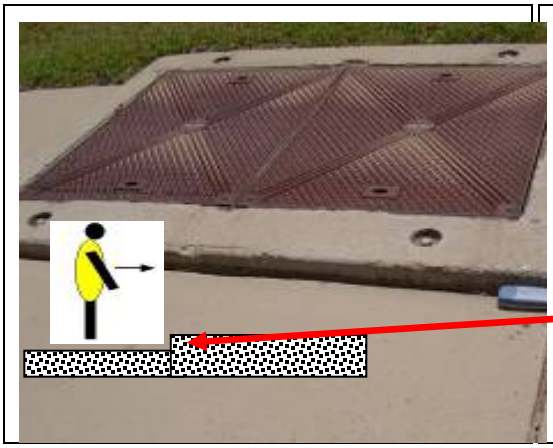
1: Response times apply only after inspection has been carried out for customer requests.

2: If a defect has already been logged into Council's system during a previous inspection either from a programmed inspection or another customer's request, then the defect will not be recorded twice. If however, the customer's initiated request reclassifies the defect as 'urgent' then its status will be re-assigned in Council's FAMP database to be repaired within the nominated response time for urgent defects.

APPENDIX A

CONDITION ASSESSMENT INSPECTION PROCESS

A.1 Transverse Footpath Trips

We look out for: Difference in elevation (mm) across the joint.		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.2 Longitudinal Footpath Trips

We look out for: Localised area with elevations lower than the surrounding area panels		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.3 Pot Holes

We look out for: Localised area of subsidence	To Be Added	To be Added

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.4 Footpath Minor Defects

We look out for:		
Localised area with elevations lower than the surrounding area plates		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.5 Unevenness

We look out for: Area of undulations		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.4 Slipperyness

We look out for: Areas of smooth and worn surfaces		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.4 Lighting

We look out for: Localised area with elevations lower than the surrounding area plates		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.4 Shadows

We look out for: Localised area with elevations lower than the surrounding area plates		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1

A.5 Overhanging / Obsticals

We look out for: Area of undulations		

Intervention Level	Panel Condition Rating	No of Panels Affected	Overall Condition Rating
Where observed lip is greater than 50mm	5	1	1
		2	2
		3	3
		4	4
		>4	5
Where observed lip is between 25mm and less than 49mm in height variation	4	2	1
		3	2
		4	3
		>4	4
Where observed lip is between 24mm and less than 11mm in height variation	3	3	1
		4	2
		>4	3
Where observed lip is between 5mm and less than 10mm in height variation	2	4	1
		>4	2
Where observed lip is less than 5mm in height variation	1	>4	1