

BALRANALD SHIRE COUNCIL	FOOTPATH/CYCLEWAY POLICY	Doc No	
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FOOTPATH/CYCLEWAY POLICY

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Section 1. Introduction

Council has a duty of care to satisfactorily construct and maintain all Footpaths on Council owned land to enhance the safety of all users. It is also imperative that Council put in place planning measures to ensure that the current and future pedestrian needs of our community are adequately catered for and that the statutory reporting requirements of Council are met.

Risk Management is the tool used by the Works Department to achieve this "Duty of Care" in regard to Maintenance of footpaths. Generally Risk Management is a system that addresses the process of identifying the types of defects / hazards that require consideration for repair and recommends a course of action to be undertaken. This document has been developed in line with Council's overall risk management policy which is as follows:

"Balranald Council will endeavour to exercise its duty of care in relation to dedicated 'Council Public Roads', by taking all reasonable steps to enhance the safety of road users, with due regard being given to the nature of the defect, the level of risk, the use of the road, funding constraints, competing priorities and minimum standards."

1.1 Aim

To enhance the safety of all users of Councils Footpath / Cycleway network. To meet Council's reporting requirements and to assist with the programming of repair or replacement works. Thereby, enabling Council to direct the limited funds to the areas of most need. To provide a Footpath / Cycleway network that as far as fiscally possible meets the current and future needs of the community.

1.2 Definitions

Footpaths are generally defined as being a constructed pavement used predominantly by pedestrians and includes the paved portion of a footway. The constructed pavement can be turf, gravel, bituminous, concrete and segmental pavers. A footway being a public way largely reserved for the movement of pedestrians or more specifically, in the case of a road reserve, the area between the property boundary and the road carriageway. The road carriageway is that portion of a road or bridge devoted particularly to the use of vehicles, inclusive of shoulders, auxiliary lanes and kerb and gutter. A Cycleway is a paved area open to the public that is for the use of both bicycles and pedestrians. A pedestrian includes a person driving a motorised wheelchair that cannot travel at over 10km per hour (on level ground), a person in a non-motorised wheelchair, and a person pushing a motorised or non-motorised wheelchair.

1.3 Policy

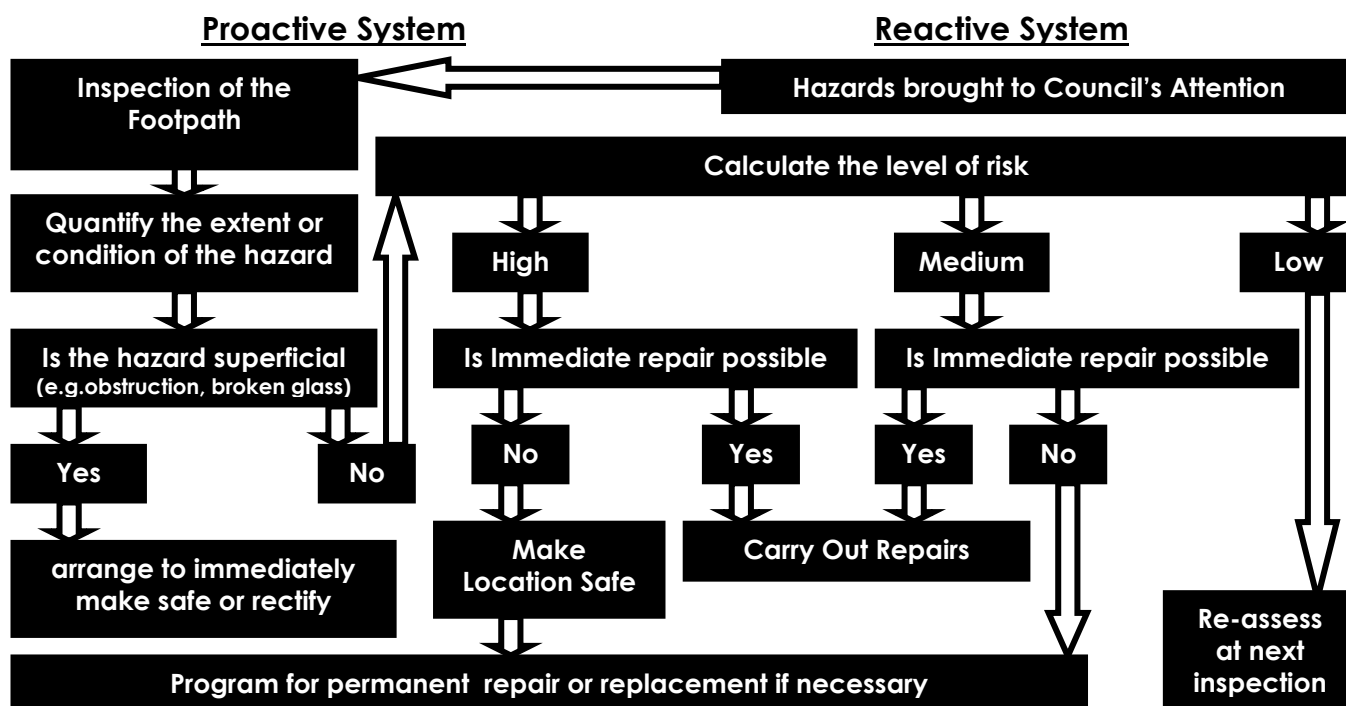
New footpaths are generally only provided in areas where kerbing and guttering exists and there is an existing significant level of pedestrian use. Cycleways are constructed in line with the Balranald Council "Bike Plan".

Section 2. Risk Management

Council needs to have in place a system for maintaining and repairing Footpaths that reduces the possibility of a hazardous section of Footpath / Cycleway not being identified. Thus enhancing the safety of all users. Risk Management is the system used by Council to address this issue by identifying a hazard, either pro-actively (primary method) or reactively (secondary method), evaluating the hazard, and taking the appropriate action (Control Measure).

2.1 The Process

The Risk Management process used by Council is an integration of both a reactive and proactive system. The process is displayed graphically below, in its simplest form:

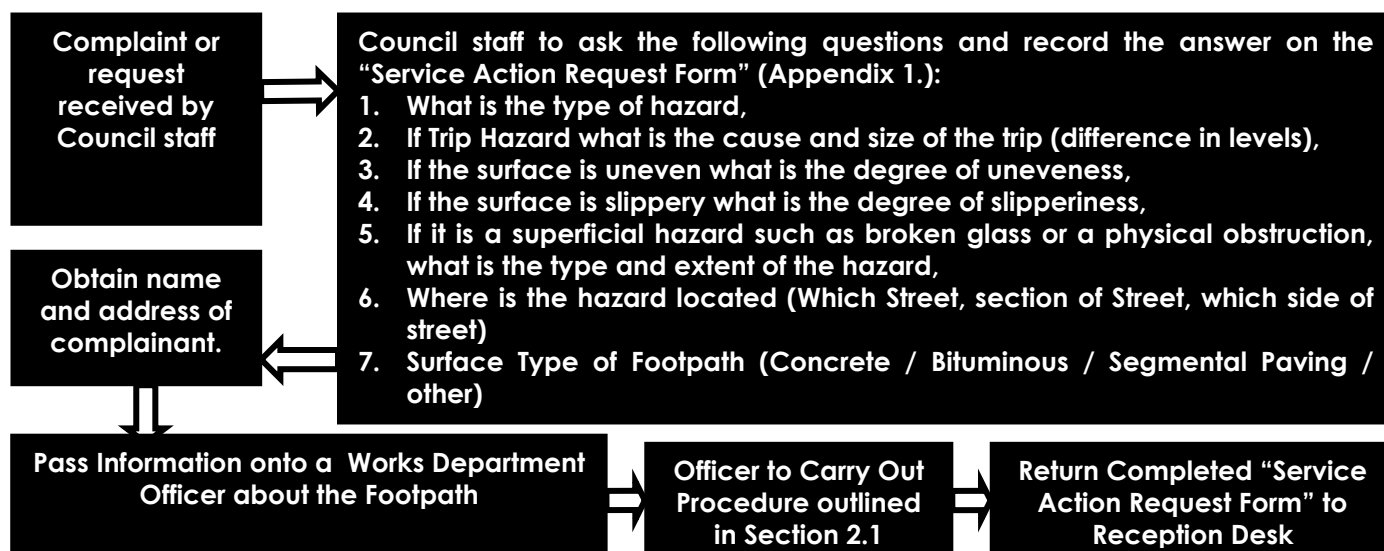


2.2 Identification

The primary method of identifying Footpath / Cycleway hazards is a proactive approach based on a series of programmed inspections. The secondary method is a reactive method which is based on hazards being brought to Council's attention of Council by means of complaints taken by Council's staff.

2.2.1 Reactive Approach

Council staff collect the relevant information from the complainant on a "Service Action Request Form" (see example in Appendix 1) and pass it on to the appropriate Officer. The subject area is then inspected as soon as possible in the same manner as that undertaken in the Proactive Approach. The reactive process is detailed in the flow chart overpage.

Decision Flow Chart to be Used by Council Staff**2.2.2 Proactive Approach**

The basis of the proactive approach for Risk Management is a programmed inspection system. In terms of reducing the risk of injury to the general public using our Footpaths a proactive system of inspection, identification and repair (if necessary) is superior to a reactive system.

Inspection System

The formal inspection system works by dividing Council's Footpaths into 3 categories. Footpaths in each of these categories are inspected at different intervals according to their level of use. Footpaths which are used by a higher number of people require more frequent inspections due to their higher level of deterioration and the greater probability of a hazard causing an injury. The categories and frequencies of inspection are:

- Category 1 (High Level Use) _____ Inspected every 3 months.
- Category 2 (Medium Level Use) _____ Inspected every 6 months.
- Category 3 (Low Level Use) _____ Inspected every 12 months.

2.3 Evaluation

The two main factors in evaluating whether a hazard presents a significant risk of causing an accident is the type of hazard and the level of use of the facility

2.3.1 Type of Hazard

The 3 common types of hazards on Footpaths are trip hazards, unevenness, and slipperiness.

Trip Hazards___ Trip hazards are generally a difference in level between two sections of a footpath / cycleway.

Unevenness___ The unevenness of the Footpath / Cycleway is affected by items such as the amount of patching carried out (whether they are a result of repairs or reinstatement due to installation of services), lifting by tree roots etc, shoving and pitting.

Slipperiness___ Conditions that effect the slipperiness of footpaths include the finish of a concrete footpath, polishing of a segmental paved footpath, flushing of a bituminous footpath etc.

2.3.2 Level of Use

The main factor affecting the probability of an accident or injury occurring at a given hazard on a Footpath / Cycleway is the level of use of the Footpath / Cycleway. The categories defined in Section 2.3.2 are based on the level of use. The higher the level of use the greater the probability of an injury or accident occurring. Hence, these categories are used to determine probability.

2.3.3 Risk Rating

The matrix overpage is used to assess the risk that a hazard on a Footpath / Cycleway presents. This matrix cross-references the type of hazard and the degree of that hazard with the level of use to ascertain a degree of risk from "Low" to "High".

Trip Size (mm)	Unevenness	Slipperiness	Level of Use		
			Footpath / Cycleway Category		
			1	2	3
> 30	Very	Very	High	High	Medium
15 to 30	Moderate	Moderate	High	Medium	Low
<15	Slight	Slight	Medium	Low	Low

The inspector transfers the risk rating onto the inspection sheet shown in Appendix 2.

2.3.4 Control Measures

The three basic control measures that are generally implemented by Council are:

- make the area safe by the erection of temporary barriers and flashing lights,
- effect temporary repairs of the damaged area, or
- effect replacement of the damaged area.

Table 3 (below) sets out which of these control measures are to be used depending on the risk rating, and the response times for each control measure.

Priority	Control Mechanism	Response Time
Low	Consider whether action needs to be taken	As resources permit
Medium	Programme if permanent repair not possible immediately	30 Days – If funding permits. If funding doesn't permit make safe and program for repair as soon as fiscally possible.
High	1. Make safe 2. Effect immediate temporary or permanent repair. (Program for permanent repair if repair temporary)	Within 4 hours 1 week

If funding precludes repair within the response time the hazard must be made safe by the use of barriers and permanent repairs are to be carried out when funding becomes available. If more than 1 hazard is forced into this category the repairs are to be prioritised by:

- Risk Rating (High to Low), then if priority is equal
- Footpath / Cycleway Category (1 to 3), then if priority is still equal
- Type of hazard (Trip Hazard 1st, Slipperiness 2nd, and Unevenness 3rd).

Section 3. Condition Rating

Condition rating of footpaths is carried out to enable Council to formulate long term replacement programs and to carry out statutory reporting requirements such as Section 428 of the Local Government Act – 1993 and "Australian Accounting Standard 27".

3.1 Concrete Footpaths

When assessing the condition of a section of concrete Footpath / Cycleway the three aspects taken into account are trip hazards, spalling at joints and cracks, and cracking.

3.1.1 Trip Hazards

When assessing the condition of the Footpath / Cycleway, in regard to trip hazards at joints the rating is taken from a combination of the size of the step (difference in levels) and the percentage of joints in the section of Footpath / Cycleway showing stepping.

3.1.2 Spalling at Joints, Cracks or Edges

Spalling at joints, cracks or edges is the breaking, chipping or cracking of discrete pieces of concrete. It is measured by taking the average horizontal width of the spall and the percentage of the section of Footpath / Cycleway showing spalling.

3.1.3 Cracking

The severity of cracking is determined by the width of the crack and the extent by the percentage of the total section of Footpath / Cycleway affected by cracking.

3.2 Bitumen and Segmental Paved Footpaths.

When assessing the condition of a section of a bitumen or segmental paved Footpath / Cycleway the three aspects taken into consideration are trip hazards, cracking of the bitumen or pavers and the unevenness.

3.2.1 Trip Hazards

When assessing the condition of the Footpath / Cycleway, in regard to trip hazards the rating is taken from a combination of the size of the difference in levels and the percentage of the section of Footpath / Cycleway affected by trip hazards.

3.2.2 Cracking

The severity of Cracking is determined by the width of the crack and the extent of cracking as a percentage of the total section of Footpath / Cycleway affected by cracking.

3.2.3 Unevenness

The unevenness of the Footpath / Cycleway is affected by items such as the amount of patching carried out (whether they are a result of repairs or reinstatement due to installation of services), lifting by tree roots etc, shoving and pitting.

3.3 Condition Score

The following Matrix is used to determine the condition of each type of Footpath / Cycleway.

All Footpaths		Concrete Footpath / Cycleways Only	Bitumen & Segmental Paved Footpaths Only	Extent % of Whole Section of Footpath / Cycleway			
Trip Size (mm)	Width of Crack (mm)	Horizontal Width of Spall (mm)	Level of Unevenness	% of New Condition			
				<10%	10 – 20%	20 – 30%	>30%
> 30	>5	> 75	High	84%	59%	35%	10%
15 to 30	1 – 5	25 to 75	Medium	92%	67%	43%	18%
<15	< 1	< 25	Low	100%	75%	51%	26%

The Average condition score is then ascertained by adding the 3 condition scores, for each type of Footpath / Cycleway together and dividing by three. This score will then be a percentage of new condition. The condition results are transferred to the sheet depicted in Appendix 3.

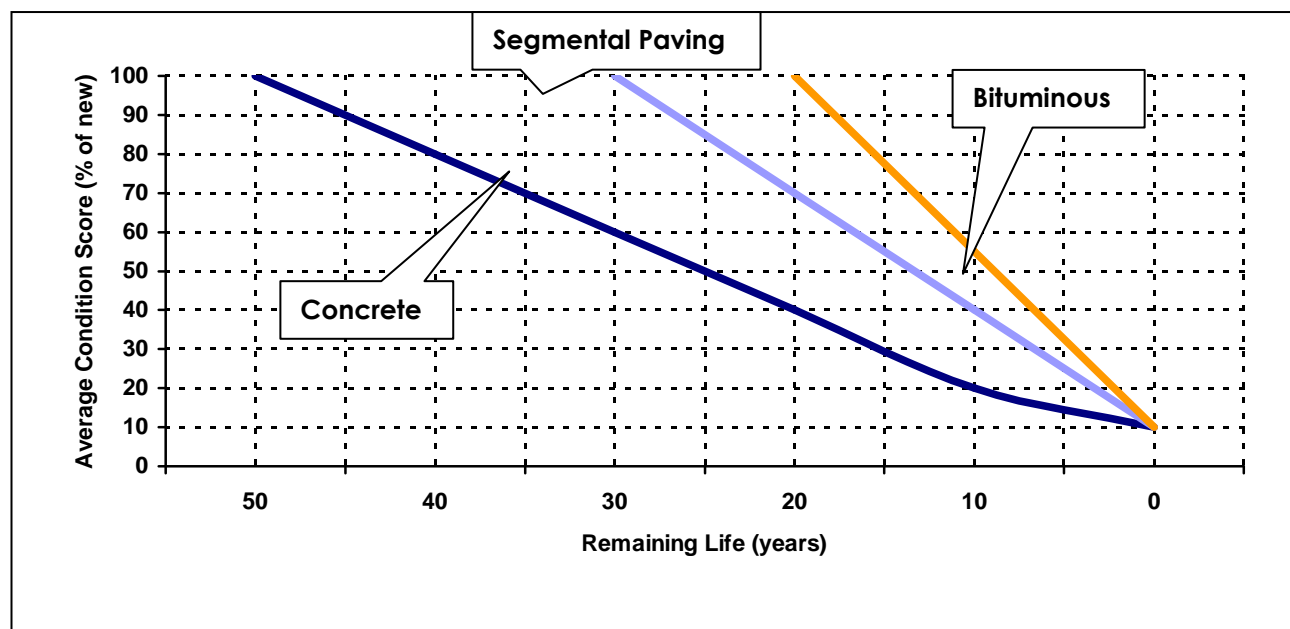
Section 4. Valuation

4.1 Written Down Replacement Cost

The Written Down Replacement Cost of the Footpath / Cycleway (i.e the value of the asset) is then obtained by multiplying the Current Replacement Cost by the Overall Condition Score.

4.2 Remaining Life

The remaining life of a Footpath / Cycleway is calculated using the line on the following chart.



The valuation results are transferred to the sheet depicted in Appendix 4.

Section 5. New Footpath / Cycleway Program

5.1 Identification

Footpaths are generally needed along routes to places where the community regularly congregates or along routes regularly used by the community for recreation. These routes can be identified by tracks worn in the natural vegetation.

Cycleway Routes have been identified through public consultation and investigation and incorporated into the Balranald Bike Plan.

5.2 Prioritisation

The 2 most important aspects in prioritising the importance of constructing a new Footpath / Cycleway are the level of use that the new asset is likely to receive and the type of facility that the user will access. New Cycleways, which eliminate safety blackspots, are given high priority.

5.2.1 Level of Use

The most practical method of predicting the level of use that a new Footpath / Cycleway will receive is to assess the level of wear on the identified track. The levels of wear are classed as follows:

High	Track worn down to where no vegetation is evident and the track is a depression in the nature strip.
Medium	Track worn down to where no vegetation is evident
Low	Track worn down to where significant amounts of soil are showing but some vegetation still evident.

5.2.2 Type of facility

The type of facility that the potential users may access can be categorised as follows:

Business (Category 1)	Footpath / Cycleways leading to these areas are generally used by all sectors of the community.
Schools (Category 2)	These Footpaths are used by the young and can direct them to the best route to school.
Community (Category 3)	This category includes access to community halls, churches, hospitals, recreational facilities etc.

The following matrix, which cross-references both of the previously mentioned criteria, is used to prioritise which Footpath / Cycleway to construct:

Level of Use	Type of Facility Accessed		
	Priority Score		
	Business	Schools	Community
High	9	8	7
Medium	6	5	4
Low	3	2	1

Some proposed Footpath / Cycleways may link a number of different facilities. A score should be given for each of these facilities and summed to give a final total score.

Section 6. Maintenance Budget

The estimated cost of maintaining Council's footpath / cycleway network is \$11,160. ***It should be remembered that this figure is maintenance costs only and does not include the construction of new footpaths and cycleways.*** These maintenance costs were derived as follows:

There are two types of maintenance carried out on Footpaths:

Routine Maintenance___Day to day repairs of defects such as trip hazards and potholes.

Periodic Maintenance___The replacement of Footpaths as they reach the end of their effective life (ie.the value of depreciation of the asset). The is a very importance aspect of the maintenance of a footpath. Obviously, there is a limitation to how many minor repairs can be carried out on a footpath. Eventually the footpath will need to be replaced. It is vital that this type of maintenance which ensures the longevity of the existing footpath network is budgeted for.

6.1 Routine Maintenance

The actual required cost of Routine Maintenance on footpaths is difficult to quantify from a planning perspective. Taking last years expenditure could also be misleading as costs can vary significantly from year to year depending on a number of variables out of Council's control. It is considered that the best method of calculating the expenditure needed to maintain the Footpath and Cycleway network is to take an average expenditure over a number of years and increase that average by the annual "Rural Road Construction Cost Index". The latest Cost Index is 2.5%. Hence, the estimated cost of Routine Maintenance on Council's footpath / Cycleway network would be as follows:

Table 6. Routine Maintenance Costs			
Category	Average Cost per year	Current Annual CPI	Estimated Cost 2004/2005
Footpaths	\$11,160	2.5%	\$11,160
Cycleways	0	2.5%	\$0
Total Routine Maintenance Cost per year			\$11,160

6.2 Periodic Maintenance

The cost of Periodic Maintenance is estimated as follows:

Table 7. Periodic Maintenance Budget				
Category	Area (m²)	Replacement Cost per m²	Replacement Cost over Life of Asset (40 Years)	Cost per Year
Footpaths	9048m/2	\$58	\$524,784	\$13,120
Cycleways				
Total Periodic Maintenance Cost per Year				\$

