



POLICY REGISTER

Pedestrian/Shared Path

Document Control

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fSection 1. Introduction

Council has a duty of care to satisfactorily construct and maintain all pedestrian/shared paths 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 Infrastructure Services to achieve this “Duty of Care” in regard to Maintenance of pedestrian/shared paths. 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 Enterprise risk management policy.

1.1 Aim

To enhance the safety of all users of Councils Pedestrian/Shared Path. 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 Pedestrian/Shared Path network that as far as fiscally possible meets the current and future needs of the community.

1.2 Definitions

Pedestrian Path

A pedestrian path is reserved for use by pedestrians, people in wheelchairs, mobility scooters and personal mobility devices, such as walking frame. These paths provide an important part of the transport network either for trips undertaken entirely by walking, or as the first or last link in a trip that utilises other types of transport.

Shared Path

A shared path is where pedestrians and cyclists share the same path space. A shared path may be appropriate where demand exists for both a pedestrian path and a bicycle path but where there is a low number of pedestrians or cyclists and the use is not expected to be sufficiently great enough to provide separate facilities.

1.3 Policy

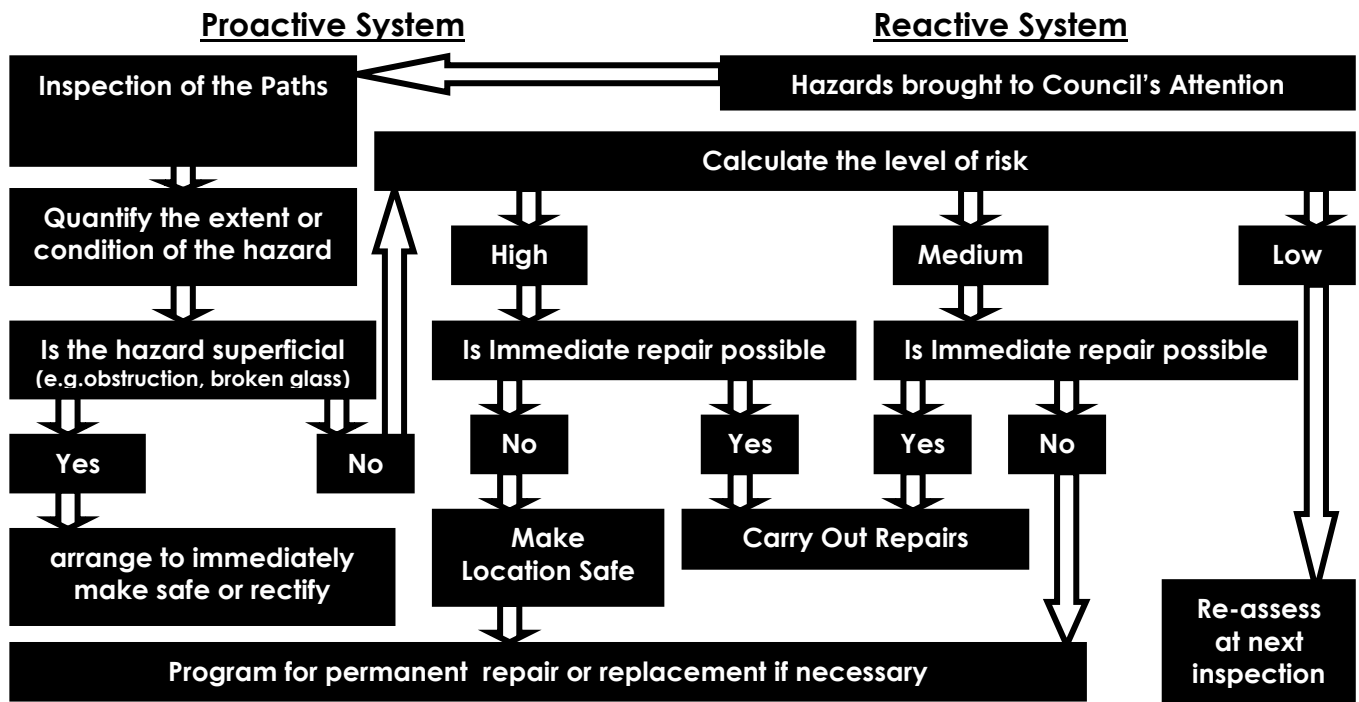
New pedestrian/shared paths are generally only provided in areas where there is an existing significant level of pedestrian use.

Section 2. Risk Management

Council needs to have in place a system for maintaining and repairing paths that reduces the possibility of a hazardous section of Pedestrian/Shared Path 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:



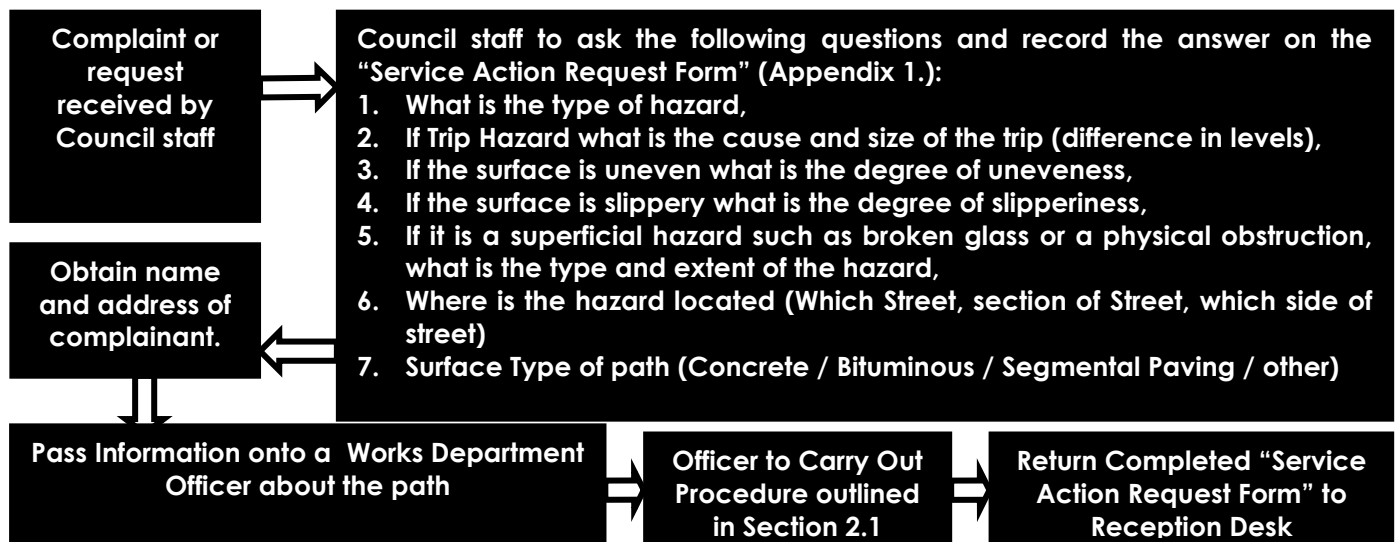
2.2 Identification

The primary method of identifying pedestrian/shared paths 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 pedestrian/shared paths 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 pedestrian/shared paths into 3 categories. Pedestrian/Shared paths in each of these categories are inspected at different intervals according to their level of use. Pedestrian/shared paths 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 pedestrian/shared paths are trip hazards, unevenness, and slipperiness.

Trip Hazards____Trip hazards are generally a difference in level between two sections of a pedestrian/shared paths.

Unevenness____The unevenness of the Pedestrian/Shared Path 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 pedestrian/shared paths include the finish of a concrete paths, polishing of a segmental paved path, flushing of a bituminous path 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 pedestrian/shared paths is the level of use of the pedestrian/shared paths. 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 pedestrian/shared paths 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".

Table 2. Risk Rating Matrix					
Trip Size (mm)	Unevenness	Slipperiness	Level of Use		
			Path		
			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.

Table 3. Control Measures		
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
- Pedestrian/Shared Path 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 paths 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 pedestrian/shared paths

When assessing the condition of a section of concrete Pedestrian/Shared Path the four aspects taken into account are trip hazards, spalling at joints and cracks, cracking and slip..

3.1.1 Trip Hazards

When assessing the condition of the Pedestrian/Shared Path, 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 Pedestrian/Shared Path 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 pedestrian/shared paths 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 pedestrian/shared paths affected by cracking.

3.1.4 Slip

Smoothness of path when wet.

3.2 Bitumen and Segmental Paved pedestrian/shared paths.

When assessing the condition of a section of a bitumen or segmental paved pedestrian/shared paths 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 Pedestrian/Shared Path, 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 pedestrian/shared paths 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 Pedestrian/Shared Path affected by cracking.

3.2.3 Unevenness

The unevenness of the Pedestrian/Shared Path 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 pedestrian/shared paths.

Table 4. Condition Matrix							
All Paths		Concrete pedestrian/shared paths Only	Bitumen & Segmental Paved paths Only	Extent % of Whole Section of Pedestrian/shared paths			
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 Pedestrian/Shared Path 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.

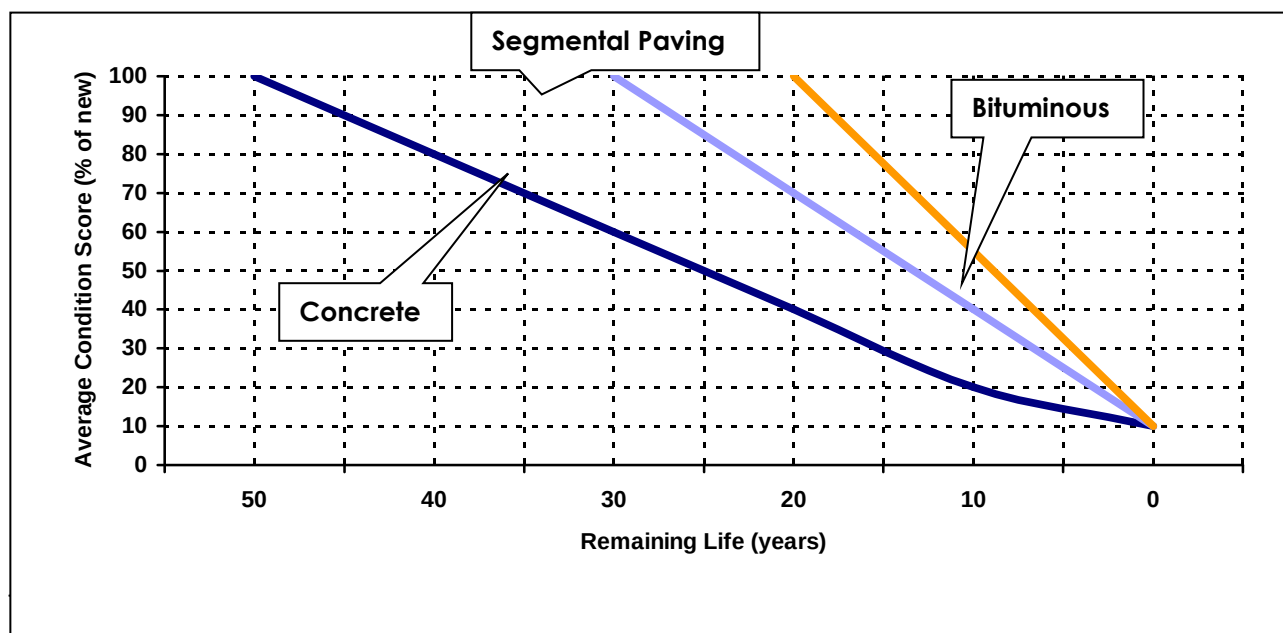
Section 4. Valuation

4.1 Written Down Replacement Cost

The Written Down Replacement Cost of the Pedestrian/Shared Path (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 Pedestrian/Shared Path is calculated using the line on the following chart.



Section 5. New Pedestrian/Shared Path Program

5.1 Identification

pedestrian/shared paths 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.

Path 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 Pedestrian/Shared Path are the level of use that the new asset is likely to receive.
- The type of facility that the user will access.

5.2.1 Level of Use

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

High	Worn down to where no vegetation is evident and the track is a depression in the nature strip.
Medium	Worn down to where no vegetation is evident
Low	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)	Pedestrian/Shared Path leading to these areas are generally used by all sectors of the community.
Schools (Category 2)	These paths 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 Pedestrian/Shared Path to construct:

Table 5. Priority Matrix			
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 Pedestrian/Shared Paths 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 Pedestrian/Shared Path network is \$11,160. ***It should be remembered that this figure is maintenance costs only and does not include the construction of new paths.*** These maintenance costs were derived as follows:

There are two types of maintenance carried out on Pedestrian/Shared Paths:

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

Periodic Maintenance_____The replacement of paths 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 path. There is a limitation to how many minor repairs can be carried out on a Pedestrian/Shared Path. Eventually the path will need to be replaced.

6.1 Routine Maintenance

It is considered that the best method of calculating the expenditure needed to maintain the Pedestrian/Shared Path 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 Pedestrian/Shared Path network would be as follows:

Table 6. Routine Maintenance Costs			
Category	Average Cost per year	Current Annual CPI	Estimated Cost 2004/2005
Paths	\$11,160	2.5%	\$11,160
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 (m ²)	Replacement Cost per m ²	Replacement Cost over Life of Asset (40 Years)	Cost per Year
Pedestrian/Shared Paths	9048m/2	\$58	\$524,784	\$13,120
Total Periodic Maintenance Cost per Year				\$

Appendix 2. Inspection Sheet

Inspected By: _____

Date of Inspection: __/__/__

[illegible]

Signed: _____ Date: __/__/__ Referred to: _____

Appendix 3. Condition Rating Sheet.

Inspected By: _____

Date of Inspection: __/__/__

pedestrian/ shared paths	Surface Type	Category	Location	Length	Width	Area	Type of Distress	Degree or size of Distress	Extent of Distress (%)	Condition Score for Specific Distress	Average Condition Score

Signed: _____ Date: __/__/__

Appendix 4. Valuation Sheet

Inspected By: _____

Date of Inspection: __/__/__

[illegible]

Signed: _____ Date: __/__/__