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## **POLICY AND PROCEDURES FOR FOOTPATH REPAIRS AND MAINTENANCE**

### **PURPOSE:**

The purpose of this document is to develop a Council policy and a set of procedures for the repair and maintenance of Council's footpaths.

### **OBJECTIVES:**

- To provide safe access for pedestrians and other users of Council's footpaths.
- To efficiently allocate available funding and resources for the maintenance and repair of the footpaths.
- To develop a priority for repairs.
- To minimise the ongoing maintenance problems by using effective repair treatments.
- To program repair work in association with Council's reconstruction program.
- To develop procedures for the reporting of injuries caused by tripping on footpaths and requests for repairs to damaged footpath.
- To develop a system for recording and reporting on the condition of Council's footpaths and reported injuries.

### **ISSUES:**

The main concern with lifting or damaged footpath is the danger that it presents to the pedestrians who use Council's footpaths. There is a need for Council to be pro-active and effect footpath repairs particularly in busy streets near shopping centres and transport nodes where pedestrian movements are high.

The main causes why footpath slabs are raised or broken is due to tree roots either from Councils' street trees or trees within private property which are near the boundary. Several species of trees such as paperbarks, camphor laurels and figs cause the most damage to the footpaths because they are generally large trees. Other significant causes of damage relate to openings in the footpath caused by public utility authorities or tradespeople. Also, damage to the footpaths can be caused by unauthorised vehicles driving onto the footpath.

In general terms, footpaths that are not subjected to any of the above conditions can remain in a serviceable condition for a significant period without the need for replacement. Whereas, footpaths that are subject to some or all of the above problems can deteriorate quickly and may require continual repair.

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Council's Asset Register recorded the condition of all of Council's footpaths and classified them into five (5) condition ratings. The ratings varied from good condition where no repairs were required to footpaths that required full reconstruction. The estimates for replacement of sections of footpaths were based on an estimated percentage of repairs required and not on an actual estimate of replacement of damaged footpath.

## **IDENTIFICATION:**

There are four forms of identification methods of reporting damaged or dangerous footpath conditions, those being:

### **Inspections:**

In late 1996, Council carried out an extensive survey of all of Council owned footpaths throughout the Municipality. The survey identified tripping problems only and rated the trip hazards in terms of trip sizes and pedestrian usage. The information was recorded in a database and as sections of footpath repairs are completed the database is updated. It is intended to re-survey the Municipality on a five yearly cycle to investigate for any new trip hazards and audit the database. The database can be accessed in Microsoft Access under the directory and file: g:\depot\dbase\footpath.mdb. A copy of a sample report from the database is attached to this document.

### **Complaints/Requests from public**

When members of the public report trip hazards or injuries relating to falls caused by raised sections of footpaths, the relevant Council Officer records the information on a "Trip or Fall Advice" form. A copy of this form is attached to this document. The officer responsible for completing the form is required to enter all details relating to the fall or request for repair and forward a copy to Council's Risk Management Co-ordinator and Records for processing of the information and potential claim. These requests are treated promptly with action to be taken as soon as possible to make the area safe until repairs can be made. A report is required on the cause of the trip hazard and photographs of the section of footpath are taken both prior to and after repair work

### **Work Orders from staff**

When staff identify any potentially dangerous section of footpath they are required to complete a Work Order and forward it to the Depot to carry out repairs. The work is then to be completed by the Depot staff as soon as practicable. On completion of the work, the Work Order is to be signed by the

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Works Supervisor, noting the date the repairs were completed. A copy of a sample work order is attached to this document. Also, after completion of the work, the footpath database is to be updated noting the location and the date the work was completed.

### **Authorised openings**

Both Public Utility Authorities and Trades people are required to carry out footpath and road openings from time to time when new cables are to be laid or connections are made to service mains. The person responsible is required to complete an application and pay Council a deposit. The conditions of opening are stated on the application form including control of traffic and pedestrians during the work.

Temporary restorations are carried out using cold mix and the exact dimensions of the opening are advised to the appropriate Council Officer who will issue the order to the Depot or Council's contractor to effect the permanent restoration work. Details of the permanent restoration work are covered in Council's specification.

### **EVALUATIONS:**

The evaluation process for footpaths relates to the risk management processes. The two main criteria for evaluation are severity of the damage and the frequency of use.

When Council developed its footpath repair schedule from its survey in 1996, there were three categories relating to the severity of the damage to the footpath and three categories relating to frequency of use.

The severity categories were based on the height of the trip hazard between consecutive footpath slabs.

The three categories are:

1. Displacements greater than 20mm.
2. Displacements between 10mm to 20mm.
3. Displacements less than 10mm.

Categories 1 and 2 sites would require removal and replacement techniques, whereas category 3 sites may be able to be ground down using a concrete grinding machine.

The frequency of use categories were based on pedestrian usage and identified areas throughout the municipality where pedestrian use is likely to be high and also considered the type of users.

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The three categories are:

1. High pedestrian usage – eg. Around shopping centres and railway stations for a 500 metre radius.
2. Medium pedestrian usage – eg. Around schools, nursing homes and aged care facilities.
3. Low usage – general local residential streets without schools, nursing homes and bus routes.

Areas where the severity is Rating 1 ie. Greater than 20mm displacement and the frequency of use is Rating 1, these sites were regarded as high risk sites and were given a high priority for repair.

Since 1997, Council's work staff and its contractors, have been concentrating on repairs for both Rating 1 sites for severity and frequency of use categories.

When evaluating trip hazards to include in Council's database, the following factors need to be considered and rated:

- What is the size of the trip hazard?
- What is the likely cause?
- Is the footpath frequently used?
- Where is the footpath problem located?
- What is the lighting like?
- Is the surface slippery and to what degree?

The table below is used when identifying the priority of the repair to the trip hazard site.

#### **RATING OF FOOTPATH TRIP HAZARD**

TRIP SIZE	FREQUENCY OF USE			LIGHTING
	HIGH	MEDIUM	LOW	

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> 20mm	1	4	7	POOR
10mm-20mm	2	5	8	FAIR
< 10mm	3	6	9	GOOD

Priority 1 trip hazard sites are the ones likely to be of highest risk and require highest attention and action. Whereas, Priority 9 trip hazard sites are of lower priority and can be attended to at a later time after all other areas have been completed, subject to funds being available.

## **CONTROLS:**

Following identification and evaluation of the trip hazard sites, it is necessary to establish control mechanisms for dealing with high to low risk trip hazard sites.

Also, controls need to be established when dealing with complaints from the public, service requests from staff and authorised openings. These sites generally represent a potential danger and can be either made safe by the erection of barricades and lighting, or temporarily repaired until permanent repairs can be effected.

It is intended that with a pro-active approach to repairing surveyed trip hazard sites, the amount of complaints and service requests will reduce. However, there needs to be a sufficient amount of funds available each year to repair sites which have recorded complaints or service requests.

Authorised openings can be restored on a programmed basis and deposit funds are sufficient to cover the costs of restoration. Requirements for temporary restoration of authorised openings usually render the site safe until permanent repairs can be carried out.

With complaints from members of the public relating to notified trip hazards or falls, the matter is usually reported to Council's One Stop Counter in the first instance and then forwarded to Council's Risk Management Co-Ordinator. The Risk Management Co-Ordinator is then required to notify the Works Supervisor advising of the location, a report on the cause of the trip hazard, photographs of the site before and after repairs. Complaints or Service Requests relating to Priority 1 to 3 sites should be made temporarily safe within 8 hours by the erection of barricades until permanent repairs can be completed. Permanent repairs should be completed within one week of the notification.

For Priority 4 to 5, sites should be made temporarily safe within 48 hours and permanently repaired within two weeks of the notification.

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For Priority 6 to 9, sites consideration needs to be given whether action should be taken or as resources permit.

A summary of response times for complaints or service requests relating to trip hazards or reported falls can be seen in the table below.

#### RESPONSE TIMES

Site Priority	Notification To Depot	Temporary Measures	Permanent Repairs
1 to 3	4 hours	8 hours	1 week
4 to 5	24 hours	48 hours	2 weeks
6 to 9	24 hours	As resources permit	As resources Permit

For programmed work based on the surveyed results, the following table is used as a guide for repairing trip hazards.

#### PROGRAMMED REPAIRS

Site Priority	Permanent Repairs
1 to 3	On a yearly inspection and repair cycle.
4 to 5	On a five yearly inspection and repair cycle.
6 to 9	On a ten yearly inspection and repair cycle.

#### FUNDING:

In 1996/97, Council's Engineering staff was required under AAS 27 to value its road and footpath assets. This involved the requirement of reconstructing Council's footpaths to bring them to a satisfactory standard. The footpaths throughout the Municipality were classified into 5 condition ratings with Condition 1 and 2 rated footpaths considered to be of an acceptable standard. In assessing Condition 3 to 5 footpaths, the cost of repairs was based on an estimated percentage of footpath that required reconstruction. The percentages allocated were 15% for Condition 3, 40% for Condition 4 and 100% for Condition 5.

Since that time and after work has been carried out on several streets, the percentages previously allocated were too high and are more likely to be 5% for Condition 3, 15% for Condition 4 and 100% for Condition 5. Hence the adjusted total costs of reconstruction for these percentages is \$2.35 million. This would involve the

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replacement of all cracked or inappropriately restored footpath including all trip hazard sites.

Since starting on carrying out repairs to trip hazard sites, it has been found that the average cost per site is \$200 and given that there are over 3000 sites identified, the cost of repairing these sites would be \$600,000. As Council has repaired over 500 of these sites since the time of the survey, the balance of funds required to complete the entire Municipality is estimated at \$500,000.

Given that it is intended to survey all of Council's footpaths every five years, it is suggested that funds be provided over the next two financial years to repair all outstanding trip hazard sites before the next survey is carried out.

Following completion of the next survey, the matter be reported to Council to assess the ongoing funding requirements to keep the amount of trip hazard sites to a minimum.

It is suggested that Council allocate an additional \$250,000 per year over the next two years to do priority 1 to 5 sites and the following year to do priority 5 to 9 sites. However, it should be noted that these figures are very basic estimates and need to be confirmed through more detailed estimates.

## **TREATMENTS:**

### **Footpath Slabs Subject To Tree Growth**

As tree roots cause most of Council's footpath problems, it is necessary when repairing sites to try and prevent a continuation of the trip hazard when the roots continue to grow. Consideration also needs to be given to not continue with any further tree planting schemes and just concentrate on removal and replacement programs.

Following excavation of a know trip hazard site caused by tree roots pushing up the concrete slab, the Tree Management Officer inspects the site to determine if the root can be removed without causing the tree to ultimately die. If the tree root can be removed, the area is excavated to the level of the surrounding footpath. Replacement slabs are a minimum 100mm thick of 25Mpa concrete with F72 reinforcing mesh.

If the tree root cannot be removed, the slabs directly over the roots is removed as well as the slabs on either side of the area. All slabs are then replaced using F72 reinforcing mesh and key joints added at each joint. This is to allow a bridging action, as the tree root continues to grow.

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### **Footpath Slabs Subject To Vehicular Movement**

In a lot of areas, vehicles park or drive on the footpath because the adjoining road is heavily trafficked. In these areas, footpath slabs that are broken need to be replaced because they constitute a trip hazard. Replacement slabs are a minimum of 100mm thick and reinforced with F72 reinforcing mesh. Where driveways exist, any replacement should be in accordance with Council's Standard Drawing details with the likely use of the site being accessed.

Where possible to prevent vehicles parking on Council's footpaths, it has been and may continue to be necessary to install bollards adjacent to driveways. The bollards should be highly visible and have reflective tape attached so that they are visible at night.

### **Footpath Slabs With Minor Displacements**

Where the displacement between footpath slabs is less than 10mm and the slabs are in good condition with no visible signs of cracking, it is possible to grind the high slab using a concrete grinder until it matches the adjoining slab. This treatment should not be used more than two times as continued grinding will reduce the slab thickness and its ultimate strength.

The slab should be ground smooth and not leave any rutting.

### **Footpath Slabs Associated With Openings**

When utility openings in Council's footpath is required, it is necessary for the contractors involved to sawcut the edges of the opening to allow for replacement of the concrete footpath or restoration.

The size of the opening is subject to Council's requirements but should not be less than 300mm wide.

Both temporary and permanent restoration should be in accordance with Council's specifications.

Any trenched area needs to be properly compacted prior to replacing the concrete. Any concrete pour in a trench across a driveway should be reinforced in accordance with Council's Standard Drawing.