

Ku-ring-gai Council – Road Maintenance and Repairs
Policy and Procedure

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1. Purpose

The purpose of this Policy is to formalise Council's policy and set of procedures for the maintenance and repair of Council's Roads which is in addition to the capital works program.

2. Objectives

The Objectives of the Policy are to:

- To provide safe access for motorists and other users of Council's roads.
- To efficiently allocate available funding and resources for the maintenance and repair of the roads.
- To develop a priority for temporary and permanent 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 complaints or vehicle damage or injuries caused by damaged roads.
- To develop a system for recording and reporting on the condition of council's roads.

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1.0	1 March 2004	Original			
2.0	23 June 2008	Rewrite. Updated procedure and process			
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3. Definitions

In this Policy:

Defect means any form of failure in the road surface, including potholes, displaced pavement, cracking and road collapses. These types of failure can be structural and/or visual in nature.

DN is the abbreviation for Defect Number. It means the number assigned to a road defect that is recorded in the Road Maintenance Database. It is based on the type of defect and the location category.

Maintenance with respect to roads is defined to mean repairs to pavement failures. These repairs take the form of pothole patching to heavy patching. The purpose being to make the road trafficable until reconstruction works can be carried out.

Pothole means a hole or bowl-shaped depression in the pavement surface. They are due to the disruption in the surface of a roadway where a portion of the road material has broken away, leaving a hole.

Vpd is the abbreviation for Vehicles per day and refers to the number of vehicles travelling on the road pavement per day.

4. Legislative Framework

Under the *Roads Act 1993*, Council, as the road authority, is responsible for the care, maintenance and control of the public road.

In 2001, the High Court of Australia abolished the non-feasance provisions previously applied to Councils and road authorities. On 18 June 2002, the State Government introduced the *Civil Liabilities Act* relating to the awarding of damages against Councils. This policy and associated procedures is developed to manage risk and allocate funding on a priority basis.

5. Principles

5.1 Issues

The main concern with damaged roads that develop into pot holes is the danger it presents to motorists and other users of Council roads. There is a need for Council to be pro-active to repairs particularly in busy streets where traffic and other use is high.

Roads are primarily damaged because of poor material in the sub-grades, heavy traffic or cracking of the pavement surface. Damage to the roads can be by road

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openings. This relates to difficulty in restoring the pavement back to a uniform surface.

Council has a road network consisting of 441 kilometres. Approximately 242 kilometres of the network is rated as poor or failed. While the current construction program has had increased funding since 2001 from the Infrastructure Levy and Council funding, approximately 12-15 kilometres of road work can be carried out each year with this level of funding.

In general terms, roads that are in poor condition, subject to continual traffic and not included in the program will require more attention than those roads that are in satisfactory condition and not subjected to continual traffic. Therefore, these roads will be inspected regularly whereas the roads considered in good condition and low traffic volumes will be patrolled infrequently.

6. Implementation

Civil Works section is responsible for the implementation of this Policy and procedures.

Operational details of procedures are set out in the *Road Maintenance Procedures*.

The stages of implementation are as follows:

- Identification
- Evaluation
 Prioritisation of roads between 1 and 10
- Programming
 Rating of roads and program
- Establish controls
 Notification handling and response times
- Treatments
- Review Procedure for Regional Roads as identified in Significant Risk Register

6.1 Identification

There are three (3) forms of identification methods:

(i) Inspections

This method is applicable for road pavement and shoulders. It involves a survey of existing roads, which identifies pot holes or pavement failures in terms of the size of the pot hole or failure. The information is recorded in a database. As sections are completed, the database is updated. Council area is surveyed on a five (5) year cycle to investigate for any pavement deterioration and audit the database. A formal drive through inspection on all unsatisfactory or failed roads is carried out

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every twelve months. Additionally, a dedicated pothole team undertakes inspection and filling of potholes throughout the Council area on a 6 to 8 week cycle.

The Five (5) Year Road Inspection Schedule is included as an attachment in the *Road Maintenance Procedures*.

(ii) Complaints/Requests from public

When members of the public report a pothole or damaged section of road, the information is recorded in the Customer Request Management System. Information relating to personal injuries or vehicle damage should be reported to Council's Insurance Officer with details of the location and cause of the incident. The requests are actioned as soon as possible to make the area safe until permanent repairs can be made.

(iii) Authorised openings

Public utility authorities and tradespeople require road openings when new cables are to be laid or connections are made to service mains. The applicant must complete the relevant form, identify the traffic control arrangements and pay the Council fee.

Temporary restorations are to be carried out to make the area safe and the exact dimensions of the opening are advised to the Restorations and Driveways Engineer. An order will be issued to either Council Depot or Council's contractor to carry out the permanent restoration work. Details of the permanent restoration work are covered in Council's specification.

6.2 Evaluation

The evaluation for roads relates to the risk management processes. The two (2) main criteria for evaluation are *severity of the road defect* and the *frequency of use*.

A Matrix, as shown in **Table 1.0**, is used to determine the priority of the repair.

Table 1.0 - Prioritisation of road & shoulder failure

Severity of the road defect	Frequency of Use		
	Cat A (>10,000 Vpd)	Cat B (2,000 to 10,000 Vpd)	Cat C (<2,000 Vpd)
S1	1 (1)	1 (1)	1 (1)
S2	2 (3)	4 (5)	6 (7)
S3	3 (4)	5 (6)	9 (10)
S4	4 (5)	8 (9)	10 (10)

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Severity of road defect

The severity categories are based on the extent of the pot hole or pavement failure.

S1	Emergency matters such as road collapses or deep potholes that present an immediate danger to the public.
S2	Pot holes greater than 300mm diameter and 100mm deep and not considered to be an immediate safety hazard.
S3	Potholes less than 300mm and less than 100mm deep.
S4	Pavement failures with displaced pavement and pavement cracking.

In terms of response:

S1	Will require an immediate response from Council or may require the assistance of the SES for making the area safe
S2 and S3	Will require temporary measures and scheduled removal and replacement techniques
S4	Will be programmed depending on road classification and traffic conditions.

Frequency of use

These categories are based on road classification and traffic volumes.

Cat A	Regional Roads and local roads carrying in excess of 10,000 vpd
Cat B	Collector and local roads carrying traffic volumes between 2,000 and 10,000 vpd
Cat C	Local roads with traffic volumes less than 2,000 vpd

6.3 Programming

Rating of road failure risk

Following evaluation of road failure, it is necessary to establish the risk of road failure to the user. Three (3) levels are used (high, medium or low) to include in Council's database, with the following factors being considered when rating:

- What is the size of the pot hole or pavement failure?
- What is the likely cause?
- What is the frequency of the repair?
- What are the traffic conditions such as average road speeds?
- What is the steepness of the road?
- What is the lighting like?
- Is the failure located in the wheel track or shoulder area?

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Priority 1 road failure is of the highest risk and rated requiring the highest attention and action, whereas Priority 10 road failure can be attended to at a later time subject to funds being available.

Develop Program for road maintenance and repair

A twelve monthly program is determined based on the rating and reviewed every six (6) months. The program is supported with regular updated data using the three (3) methods of identification process. This assists with programmed inspections, customer service requests and the dynamic nature of road deterioration.

While the system allows for flexibility, controls are required for the management of pavement failures.

6.4 Establish controls

After programming, it is necessary to establish control mechanisms for undertaking temporary maintenance such as:

- high to low risk road failures.
- complaints from the public, service requests from staff and authorised openings.

It is intended, with a pro-active approach to repairing road failures, the amount of complaints and service requests will reduce. However, sufficient funds are required to repair sites which have recorded complaints or service requests.

Authorised openings

These sites generally represent a potential danger and can be made safe during the work by the erection of barricades and lighting.

Authorised openings are restored once Council has been advised the work is completed. Requirements for temporary restoration of authorised openings usually render the site safe until permanent repairs can be carried out.

Notification handling

Complaints from the public regarding road failures are reported as following:

- Phone calls to Customer Service - a Customer Management Request (CRM) is created and forwarded to the Civil Works Section.
- Letters or emails – are saved in the electronic record management (TRIM) and actioned to the Civil Works Section.
- CRM's and TRIM actions are investigated. Required repair work is scheduled.

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Response times

CRM's and TRIM actions relating to Priority 1 to 2 locations should be made temporarily safe within 24 -48 hours. Temporary materials and/or the erection of barricades will be used until permanent repairs can be completed.

Priority 1 sites - information must be forwarded to the Council Depot, after hour assistance from the SES or the Emergency section contact as soon as possible so the area can be made safe or road detours put in place.

Priority 2 and 3 - sites where there are high traffic volumes, the site should be made safe as soon as practicable and within 48 hours of notification.

Priority 4 to 6 - sites should be made temporarily safe within 72 hours.

Priority 7 to 10 - site consideration is required whether action should be taken or programmed as resources permit.

A summary of response times for complaints or service requests relating to road failures is shown in the table 2.0 below.

Table 2.0

Site Priority	Temporary repairs	Permanent Repairs
1	24 hours	30 days
2 and 3	48 hours	180-365 days
4, 5 and 6	72 hours	730-1460 days
7, 8 and 9	1 – 6 weeks	As resources permit
10	As resources permit	

6.5 Treatment

Road collapses and emergencies road failures

Where these situations occur, the road area is to be made safe by either barricading off the site or placing road detours. The permanent repairs need to be carried out as soon as practical and within one week of the report of the failure where practical.

Pot holes greater than 300mm diameter and 100mm deep

Initially these may need to be temporarily repaired using cold mix or hot mix after cleaning out the pot hole of loose material. Permanent repairs will need to be programmed as soon as possible with excavation to extend to sound pavement

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areas and hot mix placed and compacted over the restored area. If the surrounding pavement or road has completely failed, a program of temporary repairs will need to be established until the road is scheduled for reconstruction.

Pot holes less than 300mm diameter and 100mm deep

These road failures are to be temporarily repaired using cold or hot mix after cleaning out the pot hole of loose material. Permanent repairs should only be programmed if it is likely the area will deteriorate quickly due to traffic conditions.

Deformed or cracked pavements

Where the road pavement is deformed or cracking, temporary placement of hot mix over the deformed or cracked pavement may be necessary to prevent more accelerated deterioration.

6.6. Review procedure for Regional Roads as identified in Significant Risk Register

As part of the Roads Asset Management Plan, the following Risk Register was produced.

For all Category A roads, a six (6) monthly review of accident statistics, CRM requests and scheduled inspections are to be undertaken. Data collected is used for programming of maintenance works, capital works and grant funding applications.

A review of this policy and the procedures for Roads Maintenance was undertaken in February 2013

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Ref #	Asset Category or Type / Usage Level	Condition Rating	Risk Description	Pre Treatment/ Control Risk Score (Inherent Risk)	Existing Treatments / Control Measures:	Post Treatment/ Control Risk Score (Residual Risk)	Additional Risk Treatment Actions Required
1	All Road Categories	3 - Fair	Additional cost for each block to rebuild the road pavement due to the wearing surface not being replaced within required timeframe	High	* Infrastructure Levy / additional funding	Medium	Roads Risk Treatment Plan # 1
2	All Road Categories	3 - Fair	Insufficient funding to carry out intermediate maintenance (patching) to keep an asset in fair condition - delaying the need for more major works (resurfacing or reconstruction)	High	* Short term reallocation of capital road works funding	Moderate	Roads Risk Treatment Plan # 1
14	Category 'A' Roads = ALL REGIONAL Roads + LOCAL and COLLECTOR roads with traffic volumes greater than 10,000 vpd	4 - Poor/ V 5 - Failed	Damage to vehicle and injury to passenger from MVA caused by failed road surface	High	* Roads Maintenance Policy & Procedures	Medium	Roads Risk Treatment Plan #2 Roads Risk Treatment Plan # 3
17	Category 'A' Roads = ALL REGIONAL Roads + LOCAL and COLLECTOR roads with traffic volumes greater than 10,000 vpd	3 - Fair	Damage to vehicle & injury to passengers from MVA caused by <i>poor road alignment and profile</i>	Medium	* Signage, Guard rails, Line marking, median rumble strip * Roads Maintenance Policy & Procedures	Medium	Roads Risk Treatment Plan #2 Roads Risk Treatment Plan # 3
20	Category 'A' Roads = ALL REGIONAL Roads + LOCAL and COLLECTOR roads with traffic volumes greater than 10,000 vpd	3 - Fair	Damage to vehicle & injury from MVA caused by <i>narrow road / reduced road width</i>	Moderate	* Signage, Guard rails, Line marking, * Roads Maintenance Policy & Procedures	Moderate	Roads Risk Treatment Plan #2 Roads Risk Treatment Plan # 3
23	Category 'A' Roads = ALL REGIONAL Roads + LOCAL and COLLECTOR roads with traffic volumes greater than 10,000 vpd	3 - Fair	Damage to vehicle & injury from MVA caused by <i>hazardous shoulder (i.e. no kerb, edge drop or high embankment)</i>	Medium	* Edge drop patching / shoulder edge repairs as part of the formal controls marking, * Roads Maintenance Policy & Procedures	Moderate	Roads Risk Treatment Plan #2. Roads Risk Treatment Plan # 3