



Title: Footpath Maintenance and Inspection

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Related legislation: AAS27, AASB 116, Local Government Act 1993 - Sect 428 Annual report
Local Government Code of Accounting Practice and Financial Reporting

Related policies:

Related procedures:

Related forms:

Contents:	1. PURPOSE.....	2
	2. SCOPE	2
	3. OBJECTIVES.....	2
	4. PROCEDURES.....	2
	5. RESPONSIBILITY.....	4
	APPENDIX 6.1 – ASSESSMENT METHOD.....	4
	1. INTRODUCTION.....	4
	2. THE CONDITION RATING SYSTEM	4
	APPENDIX 6.2 – RISK FACTOR.....	7
	APPENDIX 6.3 – ASSESS & MOBILITY FACTOR.....	8

1. PURPOSE

The purpose of this document is to formalise a policy which encompasses procedures to be followed that will identify and evaluate footpath pavement condition, provide a risk assessment and produce a program of maintenance works covering the footpath network. The adoption and implementation of this policy will contribute to the delivery of a safe and effective footpath network for residents and visitors to the Canterbury local government area.

2. SCOPE

The policy addresses the procedures used for constructed footpaths with respect to:

- Inspection and condition evaluation
- Risk assessment
- Prioritisation of maintenance and improvement activities

3. OBJECTIVES

The objectives of the policy are:

- To contribute to the provision of a safe and accessible footpath network for users.
- To adopt a consistent system for identification of footpath hazards.
- To prioritise maintenance works on footpaths giving consideration to both the severity and extent of the hazard and the risk it creates.
- To record the history of inspection and maintenance.
- To provide a system to support the defence of Public Liability footpath related claims.

4. PROCEDURES

4.1 FOOTPATH CONDITION ASSESSMENT

The footpath network has been divided into segments that broadly correspond to the street blocks and a method for identifying and rating defects on footpaths has been developed. From a visual survey of each footpath segment a Condition Index is determined that takes into account any defect, its severity and extent. This index can then be used for comparison with other footpaths within the network.

Detail of the Footpath Condition Assessment calculation (Condition Index) is included as an appendix - Appendix 6.1.

4.2 RISK AND ACCESS FACTORS

In the initial stages of implementing the Footpath Management System consideration was given to footpath defects only (Condition Index). While this provided a sound starting point for determining maintenance programs, in reality there are other impacting factors such as Risk and Access that need to be considered to ensure that footpath maintenance programs are selected in accordance with "need".

4.2.1 RISK

Following advice from our Risk Officer, Insurance Brokers (Jardine, Lloyd, Thompson), and Insurers (Statewide Mutually Liability Scheme), the risk associated with a footpath should be considered when prioritising works. It has been suggested that the degree of risk is linked to the pedestrian traffic flow. Three Risk Categories are considered; viz-

- **High Risk Areas**
High pedestrian volumes. Primarily Shopping Centres.
- **Medium Risk Areas**
Highly visited sites - e.g. around schools, age centres, public transport, etc.
- **Standard Risk Areas**
Local footpath

Details of "Risk Weightings" are included as an appendix - Appendix 6.2

4.2.2 ACCESS

In 1999 Arup Transportation Planning in association with Morris Walker Consultants was engaged to prepare a Pedestrian Access and Mobility Plan (PAMP) for the Canterbury City local government area.

This plan identified priorities for footpath improvement works with an emphasis on pedestrian access and mobility. The locations identified by the study are now considered in the footpath planning process.

Details of "Access Weightings" are included as an appendix - Appendix 6.3.

4.3 FOOTPATH PRIORITY SELECTION

The priority for selection of footpaths in a maintenance program is determined by weighting the Condition Index with the Risk and Access factors to obtain a Footpath Priority Index (FPI). A larger index indicates poorer footpath overall condition and hence a higher priority for treatment.

$$\text{FPI} = (\text{Condition Index}) \times (\text{Risk Factor}) \times (\text{Access Factor})$$

4.4 PROGRAMMED INSPECTIONS

The frequency of reinspections of footpath condition needs to be linked to its risk category.

Re inspections will be carried out not less than:

- **High Risk Areas:** every 6 months
- **Medium Risk Areas:** every year
- **Standard Risk Areas** every 5 years.

4.5 USCHEDULED INSPECTIONS

Unscheduled inspections are carried out upon receiving a report or complaint from residents, businesses or Council Staff that an isolated section of path is of concern and requires immediate maintenance attention.

4.6 MAINTENANCE AND REPAIR

From the data collected by inspections, reinspections in accordance with the above inspection schedule and reinspection following the completion of "Programmed" work, the information held in the Footpath Management System will be updated regularly. The system will recalculate the Priority Index for the section of footpath being considered taking into consideration condition, risk and access. The footpath ranking established using the Priority Index will form the basis for the selection of projects to be included in future Footpath Rehabilitation and Asphalt Footpath Reconstruction Programs.

Where isolated or hazardous defects are identified during inspections (or from complaints or reports received) these are referred to the Team Leader - Maintenance, for repair and costed to the Footpath Maintenance Account.

5. RESPONSIBILITY

The responsibility for implementing the Footpath Maintenance and Inspection Policy rests with the City Works Division.

City Works is responsible for carrying out the actions and works resulting from this Policy, however the Corporate Development Team within the Corporate and Community Services Division, will continue to provide an advisory and monitoring role on Public Liability issues.

APPENDIX 6.1 - Footpath Condition Assessment Method

1. INTRODUCTION

All footpaths were initially inspected in 1995/96 as part of Council's compliance responsibilities for AAS27. From the inventory determined, annual Footpath Rehabilitation and Asphalt Footpath Reconstruction Programs were developed to progressively rectify and improve the footpath network throughout the City utilising allocated resources.

At present follow up inspections are carried out to re-rate rehabilitated or reconstructed sections of footpath or as a result of residents requests. AAS 27 requires Council to reinspect and revalue its assets at least every five years, however the procedures set out in this Policy document will allow for immediate valuations of the footpath network to be provided.

2. THE CONDITION RATING SYSTEM

City Works staff have developed the following process by which various defects, their severity and extent within the section of footpath under consideration, are rated,

evaluated and combined for that footpath section, to generate a number which reflects the overall condition of the path. This number is called the Condition Index. This index enables the relative condition of all sections of the footpath network to be compared. Footpaths with the highest (ie worst) Condition Index are given highest priority for inclusion in a Rehabilitation or Reconstruction Program.

2.1 DATA COLLECTED

Each footpath section is visually inspect and the surface condition rate as follows:

2.1.1 TYPE OF DEFECT

2.1.1 (i) UPLIFT

Rating Symbol	Defect Size	Measurement Taken
Slight (S)	7mm – 12mm	Number of slabs in this condition
Moderate (M)	12mm – 25mm	Number of slabs in this condition
Extreme (E)	greater than 25mm	Number of slabs in this condition

2.1.1 (ii) CRACKING

Each slab is inspected and a qualitative rating of the cracking severity assigned.

Rating Symbol	Defect Size	Measurement Taken
Slight (S)	Less than 2mm average width and less than 50% of the slab	Number of slabs with slight cracking
Moderate (M)	Less than 5mm average width and less than 50% of the slab	Number of slabs with moderate cracking
Extreme (E)	Greater than 5mm average width and more than 50% of the slab	Number of slabs with extreme slight cracking

2.1.1 (iii) OTHER DEFECTS

Each slab is inspected for other miscellaneous defects such as holes, patches (restorations), grass encroachment (especially on asphalt paths) and are rated qualitatively.

Rating Symbol	Defect Size	Measurement Taken
Slight (S)	Less than 20% of the slab affected	Number of slabs with slight defects
Moderate (M)	More than 20% and less than 50% of the slab affected	Number of slabs with moderate defects
Extreme (E)	Greater than 50% of the slab	Number of slabs with extreme defects

2.1.2 DEFECT CAUSES

When carrying out the surveys data is also collected on the probable cause of the defects listed above. These causes are split into five (5) groups:

- (i) **TREES**
Defects caused by the presence of trees or their roots
- (ii) **CROSSINGS**
Defects caused by the passage of vehicles over the path usually where a dedicated vehicular crossing has not been constructed.
- (iii) **SERVICES**
Defects resulting from unsatisfactory or damaged services, their pits, conduits or covers.
- (iv) **RESTORATIONS**
Defects resulting from reinstatement works that have failed.
- (v) **OTHER**
Defect whose cause does not fall into any of the above categories

2.1.3 MEASUREMENT

The length L of footpath section is measured.

The average slab length ℓ is measured. Usually 1.8 m for concrete paths and taken to be 1 m for asphalt paths.

2.2 RATING PROCESS

The data collected above is then input into the database as five (5) 3 x 3 matrixes - the five matrices being for the five defect causes listed in 2.1.2 above and the 3 x 3 being the S, M, E ratings; - uplift, cracking and other. To achieve the rating or score for each defect in each defect cause group on each section of footpath, the following formula was developed :

$$\text{Defect Index} = \frac{[(S \times 1) + (M \times 3) + (E \times 5)] \times \ell}{L}$$

The Defect Index for each defect group is evaluated using this formula and added together to give the overall Condition Index for that footpath section. This footpath Condition Index is an indicator of the average condition of the footpath section and can be used for comparison purposes with other footpath sections. The larger the number the worse the condition.

APPENDIX 6.2 - Risk Factor

Following discussions with the Risk Officer and Insurance Brokers, the inclusion of risk as a factor in determining footpath maintenance priorities was determined to be necessary.

It has been concluded that the degree of risk is linked to the pedestrian traffic flow. This has resulted in the identification of 3 Risk Categories.

- **High Risk Areas**
High pedestrian volumes. Primarily Shopping Centres.
- **Medium Risk Area**
Highly visited sites such as areas around schools, age centres, public transport, etc.
- **Standard Risk Areas**
Local footpath network.

To assist in prioritising works a risk factor is applied to the Condition Index as follows:

- High Risk Areas** - Condition Index is multiplied by a Risk Factor of 1.5
Medium Risk Areas - Condition Index is multiplied by a Risk Factor of 1.25
Standard Risk Areas - Condition Index is multiplied by a Risk Factor of 1

The Risk Factors adopted are subjective but do take into account the present concentration of pedestrian footpath accidents and insurance claims with the weighting factors designed to give footpath maintenance and improvement works in these areas a higher priority.

APPENDIX 6.3 - Access and Mobility Factors

Pedestrian Access and Mobility Plan

In 1999 Arup Transportation Planning in association with Morris Walker Consultants was engaged to prepare a Pedestrian Access and Mobility Plan (PAMP) for the Canterbury City local government area.

The main aim of the Canterbury PAMP is to improve the network's:

- Coherence
- Directness
- Safety
- Comfort
- Attractiveness
- Equity of access

The main objectives of the PAMP were :

1. To facilitate improvements in the level of pedestrian access and priority, particularly in areas of high pedestrian concentrations;
2. To reduce pedestrian access severance and enhance safe crossing on major roads;
3. To facilitate improvements in the level of personal mobility and safety for people with disabilities and seniors through the provision of enhanced infrastructure and facilities;
4. To provide links with other transport services to achieve an integrated network of facilities that comply with best technical standards;

5. To ensure pedestrian facilities are provided in a consistent and appropriate manner throughout NSW;
6. To ensure that pedestrian facilities remain appropriate and relevant to the surrounding use and user groups;
7. To facilitate the integration of walking into the transport system as a legitimate transport mode in its own right;
8. To accommodate special event needs of pedestrians;
9. To further Council's obligations under the Commonwealth Disability Discrimination Act 1996.

Many pedestrian trip attractors are schools, child care and aged care centres, community centres, hospitals, shopping centres and retail strips, recreation facilities and public transport facilities.

The PAMP focused on 12 high use CBDs or neighbourhood centres. A physical access audit of the 12 identified high use areas that are included in the Canterbury PAMP net work was conducted. The following locations were audited:

- Area 1 Campsie CBD
- Area 2 Canterbury hospital
- Area 3 Lakemba CBD
- Area 4 Belmore CBD
- Area 5 Earlwood CBD
- Area 6 Punchbowl CBD
- Area 7 Wiley Park CBD
- Area 8 Hurlstone Park neighbourhood shopping centre
- Area 9 Belfield neighbourhood shopping centre
- Area 10 Croydon Park neighbourhood shopping centre
- Area 11 Canterbury neighbourhood shopping centre
- Area 12 Narwee neighbourhood shopping centre

To raise the works priority of these areas in the footpath system, a PAMP factor is applied to the basic condition index.

- Areas 1 & 2 Condition Index multiplied by 1.3
- Areas 3 - 12 Condition Index multiplied by 1.2

The PAMP Factors adopted are subjective but do take into account the present concentration of pedestrian footpath accidents and insurance claims with the weighting factors designed to give footpath maintenance and improvement works in these areas a higher priority.