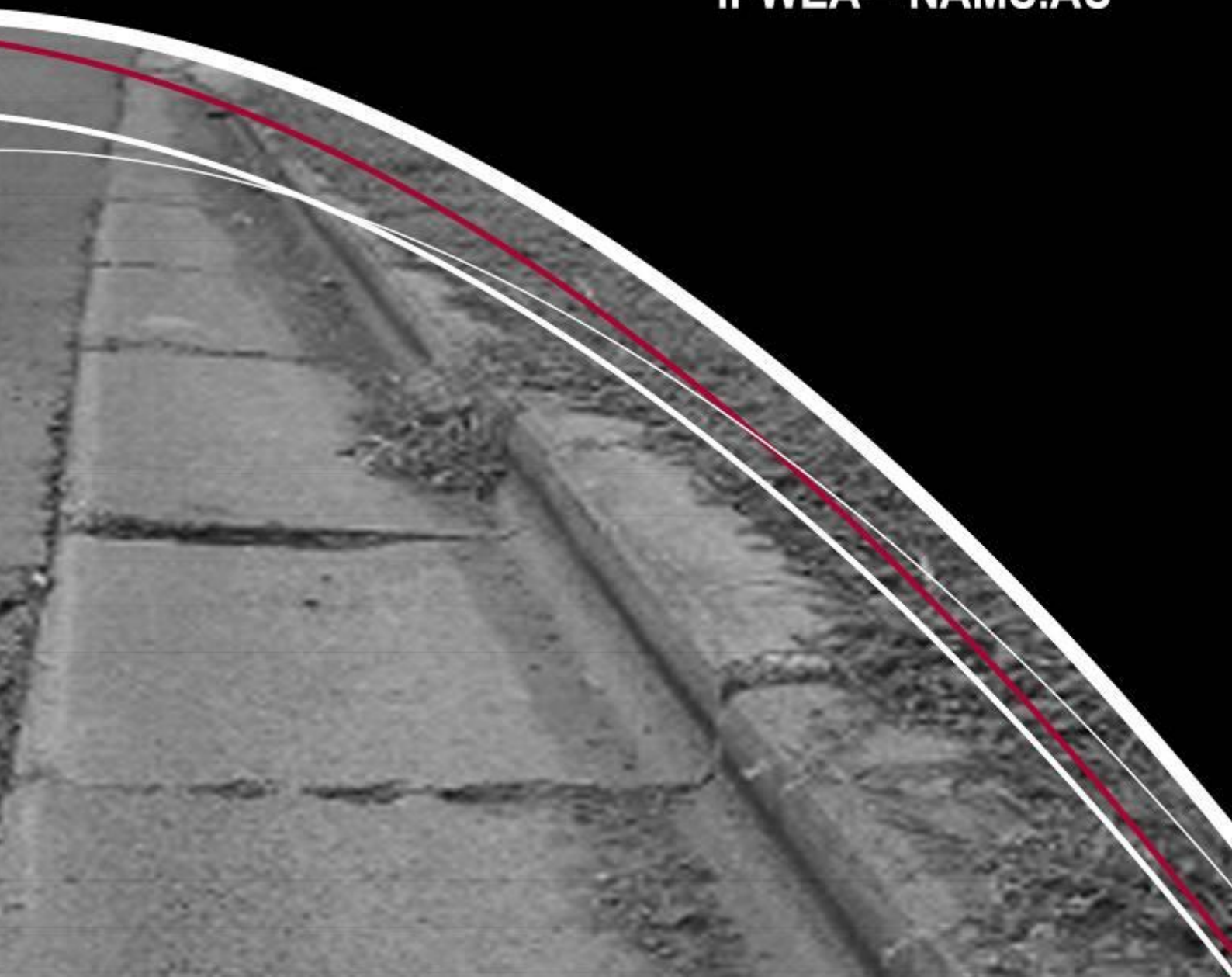




INSPECTION PERFORMANCE MEASUREMENT GUIDELINES

Practice Notes 2 KERB AND CHANNEL (GUTTER)

IPWEA – NAMS.AU





CONDITION ASSESSMENT AND ASSET PERFORMANCE GUIDELINES

PRACTICE NOTE 2 – KERB AND CHANNEL(GUTTER)

IPWEA NAMS.AU has recognised the need for industry guidelines to assist practitioners with Asset Management and Financial Planning. The first three Practice Notes have been developed for Condition Assessment and Asset Performance. A fourth Practice Note is now available for Asset Management for Small Communities. A series of Practice Notes is being researched and will be published to assist with the important task of how best to carry out condition assessments for various classes of assets as well as other important aspects of asset and financial management.

The aim is to foster a national approach and encourage consistency of data and outputs. These documents will be subject to review and updated as further and better information comes to hand.

Practice Notes may be Purchased

Three Practice Notes are available and more are being developed to provide guidance to practitioners in the field for carrying out condition assessment inspections on a range of physical infrastructure asset types including:

- PN1 Footpaths (published Nov 2007)
- PN2 Kerb and Channel(Gutter) (published June 2008)
- PN3 Buildings (published June 2009)
- Storm Water Infrastructure*
- Water and Sewerage Infrastructure*
- * **in development**

Practice Note 4 is available and others are also being developed to give nationally consistent guidelines on:

- PN4 Asset Management for Small, Rural or Remote Communities (AM4SRRC) (published March 2011)
- Long-term Financial Planning (LTFP)*
- Level of Service (LoS)*
- * **in development**

Order Forms. To purchase your copy of the individual Practice Notes, as they become available, visit www.ipwea.org.au/practicenotes.

Enquiries. IPWEA National p: +61 (2) 8267 3001; e: national@ipwea.org.au

A Preamble Document is also available Complimentary (no charge)

A complimentary Preamble Document that sets out the generic principles applicable to all the above and other types of assets is also available. It covers the basic concepts of condition assessment, performance measurement, risk and data management. Practice Notes expand on each asset class. Visit www.ipwea.org.au/practicenotes.



PRACTICE NOTE 2

KERB AND CHANNEL (GUTTER) INSPECTION AND PERFORMANCE MEASUREMENT GUIDELINES

Note to Readers

While information contained in these Practice Notes is believed to be correct at the time of publication, the Institute of Public Works Engineering Australia and its NAMS.AU Group, Working Parties and other contributors to these Practice Notes, do not accept any liability for its contents or for any consequence arising from its use.

Copyright: This work is copyright of the Institute of Public Works Engineering Australia (IPWEA) and no part may be reproduced by any person without prior written permission from the National Asset Management Strategy Group of IPWEA (NAMS.AU). Requests and enquiries concerning reproduction and rights should be addressed to IPWEA at www.ipwea.org.au.

Acknowledgements

The provision of documentation and information used during the compilation of these Practice Notes is acknowledged with much appreciation by IPWEA. Our aim has been to tap into the most up-to-date practical experience being demonstrated by users around Australia. Their willingness to make their data and systems readily available means all users of these Guidelines will benefit from their collective wisdom. The sources of material reproduced in the Guidelines are noted throughout the document.

We are also indebted to those who have willingly given their time to review and provide comment as these Guidelines have been developed, to ensure we are always reflecting best practice in the field. Those who have been part of the Review Team and have provided comment are acknowledged as follows:

Mr Jim Henshelwood - Henshelwood and Associates P/L

Mr Michael Savage - Manager Roads and Transport Directorate IPWEA (NSW)

Mr Kim Geedrick and Mr Dallas Lee - Strategic Asset Management Branch – Brisbane City Council

Mr Ian Noffke and Mr Anthony Southon - Logan City Council



TABLE OF CONTENTS

PREAMBLE	4
1.0 SCOPE OF THESE GUIDELINES	4
2.0 LEVEL OF SERVICE	6
3.0 COUNCIL'S DUTY OF CARE	8
4.0 K&C INSPECTIONS	9
5.0 K&C POLICY	11
6.0 RISK ASSESSMENT	12
6.1 Core Approach	12
6.2 Advanced Approach	12
7.0 K&C DAMAGE FACTORS	14
7.1 Footpath Trees	14
7.2 Driveway Crossings	14
7.3 Kerb Construction Methods / Quality Control	14
7.4 Roofwater Connections	15
8.0 RATING SYSTEM FOR CONDITION ASSESSMENT	16
8.1 Core Approach	16
8.2 Advanced Approach	16
9.0 K&C CONDITION DATA COLLECTION	17
9.1 Complaints/Requests System	17
9.2 Formal Inspection Program	18
9.3 Council Staff Reporting of Defects / Needs	18
9.4 Path Openings	18
10.0 K&C INSPECTION PROCESS	20
10.1 Inspection Frequency / Inspector Qualifications	21
10.2 Advanced Data Collection	22
10.3 Workplace Health and Safety	22
11.0 DATA ANALYSIS	23
11.1 Works Program	23
11.2 Routine Maintenance Program	24
12.0 LONG TERM PLANNING	25
13.0 REFERENCES	26
APPENDICES	27
Appendix 1 - Duty of Care Legal Issues	27
Appendix 2 - A Rating System for Kerb and Channel	28
Appendix 3 - Risk Rating Guide Sheet	35
Appendix 4 - Example of data collection from Onkaparinga City Council	38
Appendix 5 - Spreadsheet for Inspection Data Collection	42
Appendix 6 - Footpath Trees	44
Appendix 7 - Road Openings Permit System	45



PRACTICE NOTE 2

KERB AND CHANNEL (GUTTER) INSPECTION AND PERFORMANCE MEASUREMENT GUIDELINES

PREAMBLE

These Practice Notes for Kerb and Channel (Gutter) Inspection and Condition Assessment are the second in a series of Practice Notes being developed by the National Asset Management Strategy Group (NAMS.AU) of the Institute of Public Works Engineering Australia (IPWEA) to assist practitioners in applying best practice for condition assessment for various asset classes. The aim is to foster a national approach and encourage consistency of data and outputs. These will be living documents, subject to review and update as further and better information comes to hand.

1.0 SCOPE OF THESE GUIDELINES

Throughout these Guidelines, Kerb and Channel (or Gutter as referred to in some States), will be denoted by 'K&C'.

The prime function or purpose of K&C is to cater for a number of needs in the overall road network/drainage interface. These can be summarised as:-

- To pick up stormwater run-off from both the road carriageway and adjoining footpaths / property and channel such to gully inlets or other drainage devices for discharge to the underground pipe system or other appropriate collection/dispersal arrangements.
- To provide delineation between the carriageways utilised for vehicles as distinct from the footpath used for pedestrians and possibly bikes and between the carriageway and medians.
- To provide a safety aspect in some situations, through deterring vehicles from leaving the defined carriageway and mounting footpath areas or median strips.
- To provide delineation for the parking of vehicles in a manner that optimises safety for through traffic.
- To provide containment of the road pavement material thereby improving the structural properties of the pavement and preventing edgebreak of the surfacing.

It is intended that these Guidelines be applicable predominantly for cast in-situ K&C, precast kerb sections, kerb only or heritage type stone kerbing. They are also applicable for edge strips, restraining strips and 'reverse' kerbs. They also cover all the myriad cross sections that are used in practice as the focus is on condition assessment of the K&C and hence the resultant need for optimising possible remedial action. They cover K&C located along footpaths and median strips and around traffic management devices and roundabouts. It is recognised that the majority of new K&C is laid using kerb making machines to suit various profiles that are specified depending on the design purpose of the K&C. Older K&C poured in-situ in formwork also exists in many locations.

These Guidelines are intended to cover all hierarchies of road and adjoining land use. The procedures are applicable irrespective of category of road. They however do not address open channels such as grassed swales or table drains such as on rural roads or in some water sensitive urban designs, or formed open concrete channels.



Of course, provision also needs to be made for vehicles to legitimately cross the K&C at driveways and profiles need to be 'modified' to cater for such, depending again on the nature of vehicles crossing.

K&C is a somewhat unique part of the road infrastructure in that it generally cannot be treated in isolation. It is expensive and costly to 'renew' in that there are costs and difficulties associated with the removal of the old existing K&C and also there are associated difficulties in repairing the adjacent pavement disturbed by the K&C replacement. It also needs to be recognised that when the integrity of the K&C is compromised, through cracking or displacement, it often allows water to enter the adjacent pavement which then typically leads to premature pavement failure.

For these reasons, many road authorities limit the extent of K&C replacement or repair that they undertake each year, to those sections that need to be addressed, adjacent to road pavements that are also being addressed by way of either reconstruction or overlay. It is important therefore to consider the needs for intervention on K&C and pavements in a coordinated way. The aim is to optimise works programs and avoid wherever possible, unnecessary duplication of effort that would otherwise occur if each was treated purely in isolation.

Having said that, there will no doubt be some sections of K&C that simply cannot be ignored and irrespective of the pavement condition, need to be repaired or replaced with associated adjacent pavement edge repair.