

# CONDITION ASSESSMENT & ASSET PERFORMANCE GUIDELINES

Practice Note 2 v2 2014

Kerb & Channel

**NAMS.AU**



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## CONDITION ASSESSMENT AND ASSET PERFORMANCE GUIDELINES

### PRACTICE NOTE 2 – KERB AND CHANNEL (GUTTER) V2 2014

IPWEA NAMS.AU has recognised the need for industry guidelines to assist practitioners with Asset Management and Financial Planning. A number of Practice Notes have been developed for Condition Assessment and Asset Performance of various asset classes. Others relate to Asset Management for Small Communities and Long term Financial Planning. A further 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 additional 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

The following Practice Notes are available and more are being developed to provide guidance to practitioners:

- PN1 Footpaths & Cycleways (published 2007, V2 2014)
- PN2 Kerb and Channel(Gutter) (published 2008, V2 2014)
- PN3 Buildings (published 2009)
- PN4 AM4SRRC (only available for AU councils <5,000 population)
- PN5 Storm Water Drainage (published 2011)
- PN6 Long Term Financial Planning LTFF (published 2012)
- PN7 Water Supply & Sewerage (published 2013)

Practice Notes are being developed to give nationally consistent guidelines on:

- Level of Service (LoS)
- Road Pavement Assets
- Parks and Recreation Assets

**Order Forms:** To purchase your copy of the individual Practice Notes, as they become available, visit [www.ipwea.org/practicenotes](http://www.ipwea.org/practicenotes).

**Enquiries:** IPWEA Australasia p: +61 (2) 8267 3001; e: [admin@ipwea.org](mailto:admin@ipwea.org)

#### A complimentary Preamble document

A complimentary Preamble Document that sets out the generic principles applicable to all the above and other types of assets is also available free of charge. 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/practicenotes](http://www.ipwea.org/practicenotes).

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## PRACTICE NOTE 2

### KERB AND CHANNEL (GUTTER) CONDITION ASSESSMENT AND ASSET PERFORMANCE GUIDELINES

#### Note to Readers

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#### 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:

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## PRACTICE NOTE 2

# KERB AND CHANNEL (GUTTER) CONDITION ASSESSMENT AND ASSET PERFORMANCE GUIDELINES

### PREAMBLE

This Practice Note for Kerb and Channel (Gutter) Inspection and Condition Assessment is one in a series of Practice Notes developed by the National Asset Management Strategy Group (NAMS.AU) of the Institute of Public Works Engineering Australasia (IPWEA). It is to assist practitioners in applying best practice for condition assessment for various asset classes. The aim is to promote 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 main purpose of K&C is to provide a number of functions for the road and the road drainage. These can be summarised as:-

- To collect stormwater run-off from the road carriageway, adjoining footpaths and property and convey 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 used by vehicles and the footway used by pedestrians and possibly bikes and also between the carriageway and medians.
- To provide a safety feature by discouraging vehicles from leaving the defined carriageway and mounting footways or median strips.
- To provide delineation for the parking of vehicles for through traffic safety.
- To provide containment of the road pavement material to enhance the structural properties of the pavement and prevent edge break of the road surface.

These Guidelines are applicable 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. The focus is on condition assessment of the K&C and the need to optimise 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 cover all hierarchies of road and adjoining land use. The procedures are applicable for all categories of roads. However they 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.

Provision needs to be made for vehicles to legitimately cross the K&C at driveways. Kerb profiles may need to be modified to allow for this, depending on the nature of vehicles crossing.

K&C is a unique part of the road infrastructure in that it generally cannot be treated in isolation. It is costly to renew.



**New kerb and channel with adjacent shoulder reconstruction**

There are costs and difficulties associated with the removal of the old existing K&C and repairing the adjacent pavement disturbed by the K&C replacement. When the integrity of the K&C is compromised, through cracking or displacement, it often allows water to enter the adjacent pavement which can lead to premature pavement failure.

Due to the cost and disruption to the pavement road authorities may limit the extent of K&C replacement or repair that they undertake each year. It is not unusual to only do those sections of K&C that need

to be fixed, adjacent to road pavements that are being reconstructed or overlaid. It is important to consider the need to intervene on K&C and pavements in a coordinated way. The aim is to optimise works programs. Avoid wherever possible, unnecessary duplication of effort that will occur if each is treated purely in isolation.

However there will be some sections of K&C that simply cannot be ignored and need to be repaired or replaced despite the pavement condition. This may necessitate adjacent pavement edge repair.

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## 2.0 LEVEL OF SERVICE

An important part of managing K&C, when considering the long term, is to consider the community's desired level of service for the K&C network. This may require periodic survey of the community and feedback to make sure the community expectations are being met.

Expectations may vary over time and will need to be factored into longer term work programs.

This is particularly important for the setting of design standards for future construction by developers and Council. As standards or expectations change, you will need to plan to meet those changes and include the information in the long-term financial plan for the Council.

Information on establishing levels of service is available elsewhere. Further reference can be made to the *"International Infrastructure Management Manual" (IIMM 2011)* and to associated documents such as the NZ Manual *"Creating Customer Value for Community Assets"*. Also refer to IPWEA PN8 Level of Service published 2014. These go into far greater detail about how to effectively gauge community desires when setting levels of service.

For K&C, a *Core* and *Advanced* approach as detailed in the IIMM can be applied.

### *Core Approach*

At the *Core* level, begin with an understanding of what level of service is currently provided.

The parameters that should be addressed include:

- Materials used and K&C profiles. The following factors come into play:-
  - Category of road in network hierarchy.
  - Adjoining land use.
  - Heritage factors for existing stone or stone / block kerbs / channels.
  - Refer to Standard Drawings for the many variations in cross-section available for differing applications.

- Whether repair of the slurry surfacing is feasible as distinct from full reconstruction.
- Defect intervention parameters for various locations
  - Uplifting or settlement (misalignment).
  - Tilting or rotation.
  - Ponding / slipperiness.
  - Cracking.
  - Chipping.
  - Asphalt in the gutter tray.
  - Weed intrusion.
  - Debris / leaf litter.

Associated defects include roofwater drainage outlets which may be broken or affect the overall integrity of the K&C. Also driveways where they intersect the K&C are often sources of defect due to poor construction methods or vehicles damaging the gutter tray in particular. The edge joint between driveway and pavement is often a weakness and point of likely infiltration of water into the adjoining pavement. These defects with consequent water ingress into adjoining pavement material often lead to premature pavement failure.

### *Advanced Approach*

As Councils gain better understanding of their network, they would move to the more advanced approach and may set targets in terms of:

- Overall ranking score for the network
- Specific ranking score aligned to various location criteria
- Repair times for various types of defects at various locations

Community consultation will help you to understand and determine community expectations and willingness to pay for any changes to the level of service to be provided. The community needs to understand the costs associated with the different options available.