We're NZMUGS, here's what we do, and here's a "best of" snapshot

Ian Clark

Nathan Harper
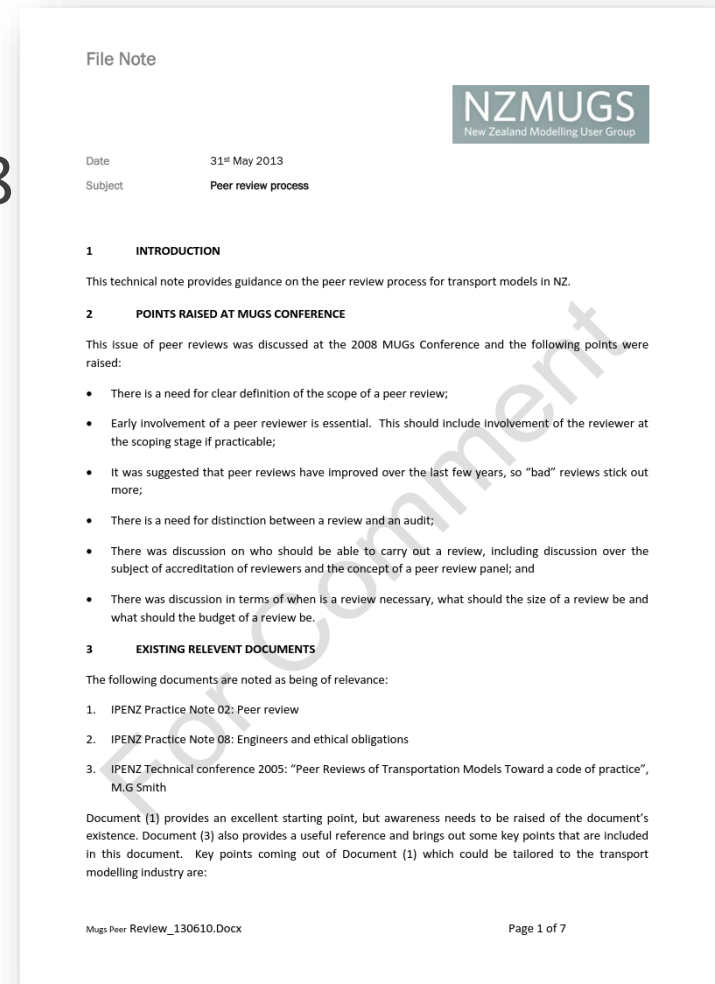
- NZ Transport Modelling User Group

- Set up in 2008

- Interested in all types of modelling

- Annual conference

- Improving knowledge and practices

- Preparation of guidelines
  - Peer Review Guidelines
  - Transport Model Development Guidelines
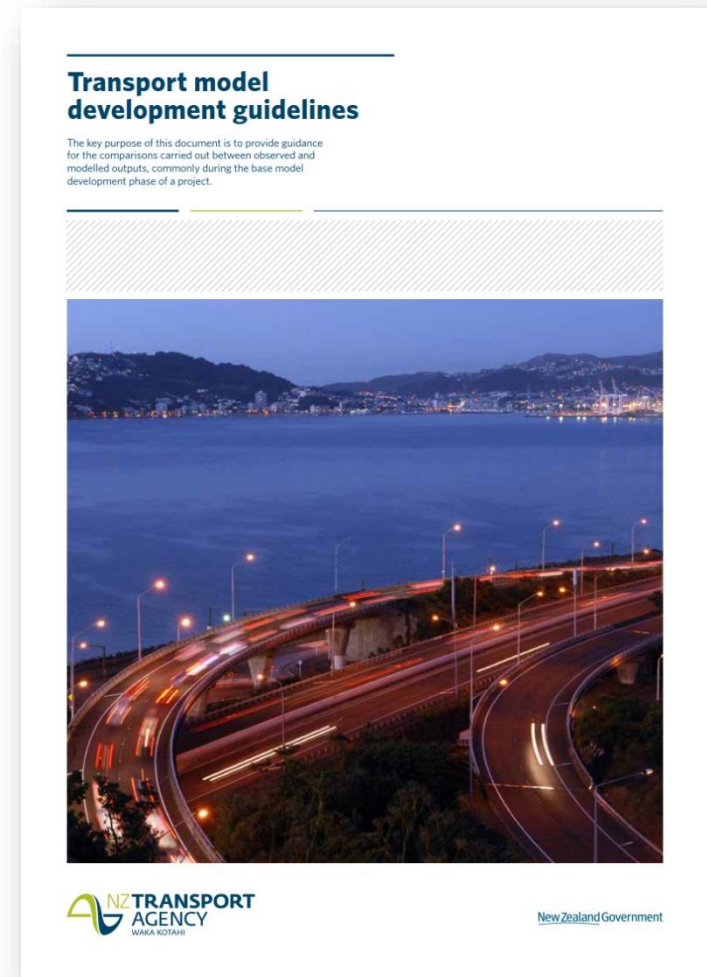 - Forecasting guidance (under consideration)

Peer Review Guidelines

- **Response to 2008 NZMUGS**

- **IPENZ Practice Notes 02 and 08**

- **Types of review:**
  - **Professional advice**
  - **Modelling Peer Review**
  - **Model Audit**

- **Seeks to clarify roles, behaviours and expectations**

- **Latest update is June 2013**

File Note

NZMUGS
New Zealand Modelling User Group

Date: 31st May 2013
Subject: **Peer review process**

1   INTRODUCTION

This technical note provides guidance on the peer review process for transport models in NZ.

2   POINTS RAISED AT MUGS CONFERENCE

This issue of peer reviews was discussed at the 2008 MUGs Conference and the following points were raised:

- There is a need for clear definition of the scope of a peer review;
- Early involvement of a peer reviewer is essential. This should include involvement of the reviewer at the scoping stage if practicable;
- It was suggested that peer reviews have improved over the last few years, so "bad" reviews stick out more;
- There is a need for distinction between a review and an audit;
- There was discussion on who should be able to carry out a review, including discussion over the subject of accreditation of reviewers and the concept of a peer review panel; and
- There was discussion in terms of when is a review necessary, what should the size of a review be and what should the budget of a review be.

3   EXISTING RELEVENT DOCUMENTS

The following documents are noted as being of relevance:

1. IPENZ Practice Note 02: Peer review
2. IPENZ Practice Note 08: Engineers and ethical obligations
3. IPENZ Technical conference 2005: "Peer Reviews of Transportation Models Toward a code of practice", M.G Smith

Document (1) provides an excellent starting point, but awareness needs to be raised of the document's existence. Document (3) also provides a useful reference and brings out some key points that are included in this document. Key points coming out of Document (1) which could be tailored to the transport modelling industry are:

Mugs Peer Review_130610.Docx   Page 1 of 7

- NZTA & NZMUGS April 2014
- Background:
  - Economic Evaluation Manual
  - Microsimulation Guidelines
  - Model Data Comparison Criteria
- Approach:
  - Not software specific
  - 7 model categories
  - Comparison targets

Transport model development guidelines

The key purpose of this document is to provide guidance for the comparisons carried out between observed and modelled outputs, commonly during the base model development phase of a project.

NZ TRANSPORT AGENCY WAKA KOTAHI

New Zealand Government

- Model categories (purpose and coverage):
  - **A:** Regional
  - **B:** Strategic Network
  - **C:** Urban Area
  - **D:** NZ Transport Agency Project
  - **E:** Small Area / Corridor
  - **F:** Intersection / Short Corridor
  - **G:** High Flow, Speed, Multi Lane
- Leading approach
  - Internationally tend to use software specific targets

TABLE 1: HOURLY GEH COUNT COMPARISON CRITERIA[10]

COUNT COMPARISON	MODEL CATEGORY						
	A: REGIONAL	B: STRATEGIC NETWORK	C: URBAN AREA	D: NZ TRANSPORT AGENCY PROJECT	E: SMALL AREA /CORRIDOR	F: INTERSECTION /SHORT CORRIDOR	G: HIGH FLOW, SPEED, MULTI LANE
TOTAL DIRECTIONAL COUNT ACROSS SCREENLINE:							
GEH<5.0 (% OF SCREENLINES)	>60%	>75%	>85%	>90%	NA	NA	NA
GEH<7.5 (% OF SCREENLINES)	>75%	>85%	>90%	>95%	NA	NA	NA
GEH<10.0 (% OF SCREENLINES)	>90%	>95%	>95%	>100%	NA	NA	NA
INDIVIDUAL DIRECTIONAL LINK COUNT ON SCREENLINES:							
GEH<5.0 (% OF COUNTS)	>65%	>80%	>85%	>87.5%	NA	NA	>90%
GEH<7.5 (% OF COUNTS)	>75%	>85%	>90%	>92.5%	NA	NA	>95%
GEH<10.0 (% OF COUNTS)	>85%	>90%	>95%	>97.5%	NA	NA	100%
GEH<12.0 (% OF COUNTS)	>95%	>95%	>100%	>100%	NA	NA	100%
INDIVIDUAL TURNING MOVEMENTS AND / OR DIRECTIONAL LINK COUNTS:							
GEH<5.0 (% OF TURNS)	NA	>75%	>80%	>82.5%	>85%	>95%	>85%
GEH<7.5 (% OF TURNS)	NA	>80%	>85%	>87.5%	>90%	100%	>90%
GEH<10.0 (% OF TURNS)	NA	>85%	>90%	>92.5%	>95%	100%	>95%

Detail / Targets

- Advances in modelling

- Advances in technology

- Links to other disciplines

- "How good are we"?

- Forecasting

- Background:
  - Australian cases
  - NZ Transport Agency advice: consider a range of futures:
    - "It cannot be assumed that there is only one viable forecast of travel corresponding with any particular assumption of economic growth or fuel prices" (etc)

- Pilo Willumsen:
  - Dealing with Uncertainty in Demand Modelling and Forecasting
  - Toll Model Forecasting
- "Traffic forecasting and soothsaying: is there a difference?"
- "But you can't handle the truth about uncertainty"
- Effects of Driverless Technology?

- New modelling software

- Big Data

- Forecasting uncertainties

- Auckland
  - Joint Modelling Applications Centre
- Wellington
  - New models
- Christchurch, Waikato and Dunedin
  - Model updates

- Wellington in September