

**Taranaki Regional Council and New Plymouth District Council Mt
Messenger Bypass Project**

In the matter; of the Resource Management Act
1991

and

In the matter; Of application for resource consent
and a notice of requirement by the
NZ transport Agency for an
alteration to the State Highway 3
designation in the New Plymouth
District Plan, to carry out the Mt
Messenger Bypass project

**STATEMENT OF EVIDENCE OF GRAEME KEITH DOHERTY
(ASSESSMENT OF ALTERNATIVES, PROJECT CONSTRUCTION AND
COST) ON BEHALF OF NEW PLYMOUTH DISTRICT COUNCIL**

19 OCTOBER 2018

QUALIFICATIONS AND EXPERIENCE

1. My name is Graeme Keith Doherty.
2. I am a Chartered Professional Engineer, whose practice area is civil engineering and transportation. I have been a chartered professional engineer since 2003. I hold a Masters in Engineering (Transportation) from the University of Canterbury and a New Zealand Certificate in Civil Engineering from the New Zealand Qualifications Authority. I am employed as a Manager of a business unit within an engineering consultancy firm (AECOM NZ Ltd) and a member of the senior leadership team within that business unit.
3. I have been engaged by the New Plymouth District Council to advise it on traffic and transport matters, project construction matters, project cost matters and the assessment of alternatives in relation to those matters.
4. I have extensive experience in the matters of traffic and transport, project construction matters, project cost matters, and in the assessment of alternatives under s 171 of the Resource Management Act 1991 for these matters.
5. From 1995 to 2011, I have undertaken the geometric design of roading projects from feasibility to detailed design ranging in complexity from single carriageway realignments such as the SH1 Centennial Highway Median Barrier project to expressway designs such as the SH1 Rangiriri Bypass project including grade separated interchanges.
6. Since 1991, I have undertaken the role of Engineer's Representative undertaking supervision or surveillance of the physical works associated with roading projects from major motorway schemes in the United Kingdom such as the widening of the M1 between junctions 9 and 10, new expressways such as the SH1 MacKays Crossing project to single carriageway realignments in New Zealand and Australia such as the SH58 Wire Rope Median Barrier project or the Warrambo Mine Project in Western Australia.

7. Since 1995, I have undertaken cost estimates for roading projects and programmes of interventions from feasibility through to construction phases and ranging from single carriageway realignments such as SH1 Peka Peka Intersections project and option estimates for multi-billion dollar programmes of interventions such as the Let's Get Wellington Moving project.
8. Since 2001, I have been involved in the assessment of options for determining a recommended preferred option such as the SH1 Muldoons Corner project with the most recent project being the Petone to Melling Cycle Link.
9. Since 2004, I have prepared and directed construction methodology statements as part of applications for alterations to and beyond existing designation boundaries as part of a Notice of Requirement for roading projects such as the Westchester Link Road in Wellington to the Petone to Melling Cycleway.
10. Since 2009, I have undertaken the role of Engineer to Contract for the physical works associated with a significant number of civil engineering projects including single carriageway realignments, earthworks and retaining wall projects in New Zealand.
11. Since 2010, I have peer reviewed traffic impact assessments on behalf of the territorial authority ranging from the impacts of retail developments on the roading network such as the proposed development of the Ravensdown site in New Plymouth through to the impacts of major roading projects such as the Transmission Gully project.
12. Since 2015, I have been involved in the NZ Transport Agency's multi-criteria analysis (MCA) process with facilitation and participation in the Nelson Southern Link Investigation (3 MCAs), the Ngauranga to Petone Cycle and Pedestrian Link project (3 MCAs) and determining the scoring associated with the implementability of major interventions within the programmes investigated as part of the Let's Get Wellington Moving project.

13. I confirm that I have read the 'Code of Conduct' for expert witnesses, contained in the Environment Court practice note 2014. My evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

SCOPE OF EVIDENCE

14. The Hearing Commissioner has requested that I *"prepare and provide a statement of evidence under the Environment Court Code of Conduct for expert witnesses (including his qualifications and experience) focusing on his opinion on the assessment of alternatives that was undertaken by NZTA in its multicriteria options assessment process, along with the subsequent evidence produced by witnesses for NZTA at the hearing"*.
15. This statement of evidence is sought as it appears, in my letter dated 14 August 2018, *"to have an expert opinion contrary to the expert opinion of Ms McBeth, the New Plymouth District Council reporting officer. Ms McBeth's opinion, as provided in her statement presented on 9 October 2018, concludes that sufficient consideration of alternatives has been undertaken to satisfy section 171(1)(b) of the RMA."*

RESPONSE TO THE HEARING COMMISSIONER'S REQUEST

16. The Commissioner has asked for my opinion on the assessment of alternatives that was undertaken by NZTA. The NZTA undertook two MCAs in the early stages of option development and these are recorded in Volumes 4A and 4B of the Application documents. In my opinion the two MCA processes undertaken, as reported in Volumes 4A (Longlist Report) and 4B (Shortlist Report), are consistent with my own experiences of the MCA process.
17. I agree with the outcome of those processes undertaken for the Mt Messenger Bypass project in that Option Z *"is the best performing MCA"*

outcome when taking overall scores into account." (refer Section 5 of Volume 4B) based on the information available at that time.

18. In my opinion, the negative scoring associated with constructing Option Z under the "constructability" criteria has been counted twice as there was also a sub-criteria ("effects on traffic during construction") within the "transport" criteria. This is inconsistent with my experiences of other MCA processes.
19. I wish to emphasise that my comments are in relation to my own experiences with other MCA processes. I do not make any comment as to the meaning of s 171(1)(b) of the RMA, which is a legal matter beyond my expertise. I also do not comment on whether the MCA process carried out for this project satisfies s 171(1)(b). Instead, I observe that the process is different to other MCA processes I have been involved in as discussed below.
20. Soon after completion of MCA2, a decision was made by the Transport Agency to adopt Option E as the option to seek a Notice of Requirement and not to progress further consideration of Option Z due to a significant cost differential, complex constructability issues and the scoring on cultural values due to the proximity to the maunga.
21. I am currently involved with a NZTA project Ngauranga to Petone Pedestrian and Cycle Link, which is a reclamation into the sea. Over the course of nearly three years, three options have been further progressed via design amendments to attempt to mitigate the effects of each option to work towards defining the preferred option. These refinements were subject to three separate MCAs over that same period, whereby the selected MCA criteria were again scored by the technical experts.
22. In the last MCA, the remaining two options have the same overall score, achieve the project objectives and are constructable. The next step is to involve legal counsel to advise on the consenting risks of the two options. It is most likely that the final decision will be influenced by which option has the lowest consenting risk.

23. This process, in my opinion, is a good example of a thorough alternatives assessment under s 171(1)(b) of the RMA.
24. I note that the Mt Messenger project had three options with similar overall scores during the MCA2 process. In light of my experience with multiple MCAs on the Ngauranga to Petone project, I consider the three Mt Messenger options should have been progressed further to seek additional information that could mitigate the previously identified negative impacts of Options P and Z and the higher costs of Option Z and then a further MCA (or further refinements and MCAs) should have been undertaken.
25. As Option E was further progressed, the position of the alignment north of the proposed tunnel was significantly altered together with a reduction in the number of bridges. The placement of the alignment onto the ground surface increased the overall footprint upon the natural surface. These are significant changes and, using my own experiences of when change of that magnitude occurs, in my view it is useful to carry out a further MCA to ensure that the revised option has been adequately considered against the MCA criteria.
26. In answering the Commissioner's question, in my opinion the option presented in the application documents has not been through a multi criteria options assessment process that is similar to other MCA processes that I have been involved in. I would have preferred Options P and Z to be further developed in conjunction with Option E, and then a further MCA process to have been undertaken, before the decision was made to choose Option E

REVISIONS TO MY LETTER DATED 14 AUGUST 2018

27. In my letter to Ms Rachelle McBeth of 14 August 2018, I questioned whether the construction costs of Option Z had been over-estimated and whether the reported costs for Option E included all offsetting and compensation costs.
28. On Tuesday the 16th of October, I met with Mr Bruce Symmans and Mr Glen Coppard, who are members of the Mt Messenger Alliance

Team. Those discussions have satisfied me that the costs of Option Z reported in the application documents are not over-estimated and the reported costs for Option E are inclusive of all costs including offsetting and compensation costs.

29. As a result of these discussions, I wish to make some amendments to my letter.
30. Under the heading "Assessment of Alternate Routes", I stated that Option Z had a lower residual risk from rockfall. In my discussions with Mr Symmans, I was shown measures in the form of barriers or other rock fall mitigation that would be implemented to achieve the same low probability of an event causing damage for both Options E and Z.
31. Accordingly, I wish to delete the words "*as have the associated construction costs*" from the fourth paragraph of my letter under the heading "Assessment of Alternate Routes".
32. I also wish to delete the last paragraph of my letter and replace it with the following text:

"Noting the timing of the decision to adopt Option E, the higher quantum of work to construct Option E (as described above), accounting for new information that is now available through supplementary evidence (as above), and noting that the assessment of alternative routes is not time-bound, I think the NZTA should review its decision to adopt Option E rather than Option Z."

19 October 2018