

**BEFORE THE 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 applications for resource consents, 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

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**SUPPLEMENTARY STATEMENT OF EVIDENCE OF BRUCE SYMMANS  
(GEOTECHNICAL MATTERS) ON BEHALF OF THE NZ TRANSPORT AGENCY**

17 July 2018

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## **INTRODUCTION**

1. My name is Bruce Symmans.
2. My supplementary evidence is given in relation to applications for resource consents, and a notice of requirement by the NZ Transport Agency ("the **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 ("the **Project**").
3. I have the qualifications and experience set out in my statement of evidence in chief ("**EIC**") dated 25 May 2018.
4. I repeat the confirmation given in my EIC that I have read the 'Code of Conduct' for expert witnesses and that my evidence has been prepared in compliance with that Code.
5. In this evidence I use the same defined terms as in my EIC.

## **SCOPE OF EVIDENCE**

6. This brief of evidence provides:
  - (a) An update on further geotechnical investigations and monitoring completed since submitting my EIC;
  - (b) An update on discussions with NPDC's geotechnical expert Mr Russell Allison; and
  - (c) Minor corrections to my EIC, regarding the width of vegetation clearance above the proposed cut slopes.

## **DEVELOPMENTS SINCE MY EIC WAS FILED: EXISTING LANDSLIDE FEATURE**

7. Since the preparation of my EIC, the Alliance has completed a further inspection of the existing landslide and completed a round of monitoring of the inclinometers (displacement recorders) installed in the investigation boreholes.
8. This monitoring has confirmed that the existing landslide continues to actively displace. Of the five inclinometers installed on the southern half of the landslide, two have sheared off (due to large displacement) and the remaining three have displaced between 10 and 40mm over the nine months since the last recording.
9. The observed displacement, including the depth at which shear movement is occurring, is entirely consistent with the proposed geological and stability models developed for this landslide at the time of MCA2.

## **UPDATE ON DISCUSSIONS WITH NPDC GEOTECHNICAL EXPERT**

10. As discussed in my EIC, in response to the NPDC Section 42A report, the Alliance provided Mr Allison (NPDC geotechnical expert) with:
  - (a) copies of a liquefaction assessment report for the Project; and
  - (b) a monitoring report for a further round of displacement monitoring of the existing landslide feature below the existing Mt Messenger route.
11. On 11 June 2018, myself and other members of the design team met with Mr Allison. At that meeting we talked through the Project, focussing on the geotechnical issues and challenges, and the geometric constraints that would prevent the 'Option Z' alignment being redirected around the existing landslide feature.
12. Attached at Appendix 1 is an email string that minutes that discussion.
13. Mr Allison advised me at that meeting, and confirmed by email, that he was satisfied with the discussion and the information that we provided to him, and he required no further information or clarification.

## **CORRECTION TO EIC**

14. At paragraph 100 of my EIC, I noted that "*the assessment of vegetation clearance has been calculated by Mr Singers to extend 25m beyond the top of the modelled cut line*". In fact, Mr Singers' calculated vegetation clearance line varies from between 5m and 40m above cut slopes, depending on the surrounding environment. With this in mind, my paragraph 100 should be amended to read as follows:

*"The vegetation clearance line above cut slopes, calculated by Mr Singers, varies from 5m adjacent to very high value vegetation to over 40m in isolated lower value areas, but is typically in the order of 20m. I believe this will provide a practical and generally conservative estimate of actual vegetation clearance. In practice the extent of vegetation clearance above the top of cuts will be between 0.5m to 5m width. This allows for some flexibility in the cut profile, to react to variation in site conditions encountered during excavation".*

**Bruce Symmans**

**17 July 2018**

## APPENDIX 1: Email discussion with Mr Allison

**From:** Allison, Russell [mailto:Russell.Allison@aecom.com]  
**Sent:** Monday, 11 June 2018 4:17 p.m.  
**To:** Bruce Symmans <bruce.symmans@mtma.co.nz>; Peter Roan <Peter.Roan@mtma.co.nz>; Rachelle McBeth <Rachelle.McBeth@npdc.govt.nz>  
**Cc:** Thaddeus Ryan <Thaddeus.Ryan@buddlefindlay.com>  
**Subject:** RE: MMA comments on geotechnical evidence

Hi Bruce

Thank you for arranging this afternoons meeting with you and your team.

I confirm your comments below are a fair reflection of our discussions.

Regards

**Russell Allison**

Associate Director- Ground Engineering & Tunnelling

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**From:** Bruce Symmans [mailto:bruce.symmans@mtma.co.nz]  
**Sent:** Monday, 11 June 2018 4:04 p.m.  
**To:** Peter Roan; Rachelle McBeth; Allison, Russell  
**Cc:** Thaddeus Ryan  
**Subject:** RE: MMA comments on geotechnical evidence

Russell,

Thank you for taking the time to meet with us this afternoon.

At our meeting we talked through:

- Consideration of options for moving the route to the east of the existing landslip feature. As illustrated within the 3D model, route options sidling around the top of the landslip end up at an elevation that is too high to link back down to the existing state highway. We also discussed options that were considered where the project was effectively stopped at the southern extent of the landslip. This was not progressed as it would not meet the project objectives of improved resilience (Landslip would likely move in moderate to large seismic events or even extreme rainfall and it would not address the high accident rate on this existing stretch of the highway.
- Are there records of remediation where the landslip crosses the top of the existing landslip. There is evidence (observed in the aerial photos on screen) that the carriageway has been realigned over this section on several occasions. The carriageway appears to cross the top of the active head scarp on two fill embankments. There is evidence that displacement (creep) is starting to occur on the shoulders of these fills. With the active state of the inclinometers below this section movement of these fills is likely to increase in the future.

- The detailed design process and selection of rock cut/rock fall protection. This includes the options under consideration for rock drape V no rock drape, including:
  - No additional fill sites are anticipated as the small volume of additional cut will likely be offset with the small increase in fill volume.
  - The resilience of the carriage way (from rock fall) is a minimum design standard. The minimum level of rock fall protection i.e. drape, barriers or offset will be dictated by the requirement to achieve this minimum standard.
  - Rock fall testing is due to be undertaken early next week, weather permitting.

If you consider the above not to be a fair reflection of our discussion, or you require further information please let us know and we will address it as soon as possible.

Thank you again.

Bruce Symmans