

BEFORE INDEPENDENT HEARINGS COMMISSIONERS

UNDER the Resource Management Act 1991 (RMA)

IN THE MATTER of notices of requirement under section 168 of the RMA for the construction, operation, maintenance and improvement of approximately 11.5km of new State Highway between Ashhurst and Woodville.

BY **NZ TRANSPORT AGENCY**
Requiring Authority

**JOINT ADDENDUM TO EVIDENCE OF MARK AARON READ AND DAVID RICHARD MURPHY
ON BEHALF OF PALMERSTON NORTH CITY COUNCIL**

3 April 2019

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1. INTRODUCTION

- 1.1** At the hearing regarding the Te Ahu A Turanga: Manawatū Tararua Highway questions were put to David Murphy, planning witness for Palmerston North City Council (**PNCC**) in its capacity as a submitter, as to whether any potential amendment could be made to recommended condition 26D that would provide greater flexibility to the way in which a shared path could be delivered as part of the Project, should the condition be recommended by the Panel.
- 1.2** This addendum evidence has been prepared by David Murphy and Mark Read (PNCC's transport witness) to ensure both traffic and planning expertise inform PNCC's response to the Panel's question.

2. STATEMENT FROM DAVID MURPHY

- 2.1** I have submitted two pieces of evidence, my original evidence is dated 15 March 2019 and I also provided addendum evidence dated 1 April 2019. As part of the hearings process I also participated in expert conferencing and I am a signatory to the Joint Planning Statement dated 21 March 2019.
- 2.2** I confirm I have the experience and qualifications set out in my original evidence of 15 March 2019.
- 2.3** I repeat the confirmation given in my original evidence that I have read the Code of Conduct for expert witnesses and the parts of this evidence I have drafted were prepared in compliance with that Code.

3. STATEMENT FROM MARK READ

- 3.1** I have submitted two pieces of evidence, my original evidence is dated 15 March 2019 and I also provided addendum evidence dated 1 April 2019. As part of the hearings process I also participated in expert conferencing and I am a signatory to the Joint Statement of Transport and Social Experts, dated 21 March 2019.
- 3.2** I confirm I have the experience and qualifications set out in my original evidence of 15 March 2019.
- 3.3** I repeat the confirmation given in my original evidence that I have read the Code of Conduct for expert witnesses and the parts of this evidence I have drafted were prepared in compliance with that Code.

4. CONDITION 26D

- 4.1** As currently drafted, recommended condition 26D provides flexibility in terms of alignment / route selection. This is because it does not specify an exact alignment or route. As noted in the PNCC planning evidence, the condition could be met through a path alongside the highway, or further away.
- 4.2** The recommended condition is more specific in terms of the treatment and width of the shared path. It must be:
- (a) Sealed.
 - (b) Contraflow.
 - (c) Separated from the carriageway by, at minimum, a wire barrier.
 - (d) Designed and constructed in accordance with Austroads guidance
 - (e) Have a minimum sealed width of 3m for the entire length
 - (f) Provide a minimum width of 0.2m clearance from any barrier.
- 4.3** We have considered each of these elements following the Panel's request, to determine whether flexibility could be created with respect to each element while still meeting the intent of the recommended condition.
- 4.4** The technical discussion in the sections below has been prepared by Mark Read.

Sealed

- 4.5** Sealed options include concrete, asphalt and chipseal.
- 4.6** Unsealed options include compacted lime, crushed aggregate, grass, and dirt.
- 4.7** Sealed options would serve all vulnerable users. Unsealed options are unlikely to be attractive to road cyclists and they may therefore use the on-road alternative. In other words, if an unsealed shared path was provided, it is likely that road cyclists would still ride on the road shoulder, which would not address the traffic safety effects I identified in my evidence (MR).

Contraflow

- 4.8** By providing a contraflow path, walkers and cyclists would be able to use it when travelling in both directions. If the shared path was not contraflow two separate paths would be required on the Project route. This would have a greater demand on space and a greater cost to the Project (MR).

Separated from the carriageway by, at minimum, a wire barrier

- 4.9** Separation from the carriageway will provide a safe walking and cycling facility, away from high speed vehicles on the Project route. This separation is required in order to meet the Safe System approach and best practice design guidance.
- 4.10** Separation from the carriage will encourage a wider range of users.
- 4.11** A wire barrier would be the minimum, and is proposed along the entire length of the Project on both sides of the road.
- 4.12** Alternatives could include a raised mound or physical separation (MR).
- 4.13** Proposed condition 26D states that at a minimum a wire barrier is to separate the proposed shared path. If the NZTA proposed something that provided a higher level of mitigation than a wire barrier then that could be provided in addition to, or instead of the wire barrier (DM).

Designed and constructed in accordance with Austroads Guide to Road Design

- 4.14** Part 6A, Appendix A, Figure A2: Bicycle Path Operation Scenario C in the Austroads Guide to Road Design¹ recommends best practice for the design of separate paths used by pedestrians and cyclists. For bicycle and shared paths, Austroads recommends *3.0 is the desirable width for a path where high speeds (>30km/h) are possible*. As the majority of the route is on a steep grade, high speeds would be anticipated.
- 4.15** Where high speeds are not anticipated, a lesser path width may be appropriate. This may also depend on the horizontal alignment of the path. A width of 2.5m on sections of the path where grades are less than 2% may be acceptable (MR). At this stage of the project it is unclear how much of the route will include a grade less than 2%. The majority of existing shared paths established in the city, including the Manawatu River shared path that will connect to the recommended path, are located on flat terrain and are a minimum width of 3.0m. For this reason, I support the requirement for a minimum sealed width of at least 3.0m (DM).

Have a minimum sealed width of 3m for the entire length

- 4.16** As already discussed a contraflow shared path anything less than 3m will be safety hazard for cyclists passing one another, particularly at corners and where a cyclist is travelling downhill at speed and a cyclist travelling in the opposite direction is travelling uphill (MR).

¹ Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling – provided as **Attachment A**.

Provide a minimum width of 0.2m clearance from any barrier

- 4.17** The minimum clearance to a wall, fence, barrier or fixed object provides cyclists room to operate within the full width of the path provided for them. It provides space between where cyclists will ride and any obstacle which if struck may result in cyclists losing control or being injured.
- 4.18** A greater clearance in line with the recommended width, rather than the minimum, should be provided on small radius horizontal curves where cyclists may lean in when travelling around the curve.
- 4.19** The minimum clearance width of 0.2m in Condition 26D is less than is recommended by Austroads guidance. For paths that cyclists use, the recommended clearance to a wall, fence, barrier or fixed object is 1.0m with a minimum of 0.5m (MR).²

5. CONCLUSION

- 5.1** To ensure recommended condition 26D continues to address the traffic safety effects identified by PNCC, no potential amendments have been identified that provide greater flexibility to way in which NZTA would be required to deliver the shared path. Based on Austroads guidance, it is recommended that component d) of the condition is amended as follows:

d) in addition to c) provide a minimum width of ~~0.2m~~ 0.5m clearance from any barrier.

David Murphy and Mark Read
3 April 2019

² Refer to A.2 Shared Paths extract taken from the Austroads Guide To Road Design provided as **Attachment A**.

Attachment A

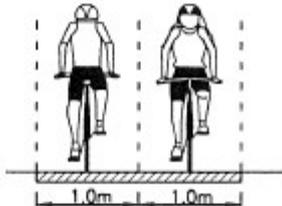
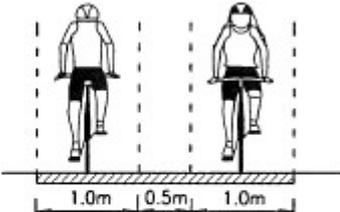
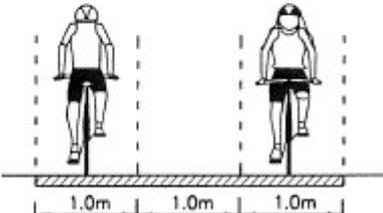
A.1 Bicycle Paths

For a bicycle path (Figure A.1)

- 3.0 m is the desirable width for a path where high speeds are possible.
- 2.5 m is the acceptable minimum path width for paths with a predominant purpose of commuting, during periods of peak use.
- 2.0 m is the absolute minimum path width where paths experience very low use at all times and on all days or where significant constraints exist limiting the construction of a wider path, and may be acceptable for a commuting path where the path user flows are tidal in nature.

Whilst unlikely, it is technically possible that situations exist where wider paths may be justified i.e. where there are high speeds, and where high 'concurrent' bicycle volumes exist for both directions, such that passing within the lane in each direction is necessary.

Figure A.1: Bicycle path operation

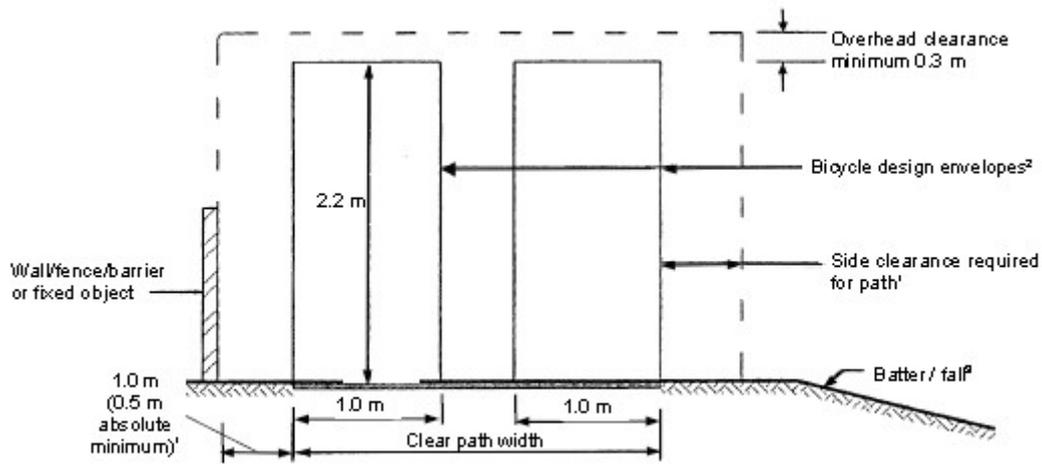
Scenario	Overall width of path	Predominant path purpose	Typical circumstances of use	
A	2.0 m	Local access	<ul style="list-style-type: none"> • Constrained conditions • 'Tidal' flow • Low use 	
B	2.5 m	Commuting and local access	<ul style="list-style-type: none"> • Regular use • 20 km/h 	
C	3.0 m	Commuting	<ul style="list-style-type: none"> • Frequent and concurrent use in both directions • 30 km/h+ 	

A.2 Shared Paths

For a shared path (Figure A.2)

- Regional paths should be 4.0 m wide to permit the cyclist groups/couples to pass pedestrian couples or other cyclist groups, or to permit cyclists travelling in opposite directions to pass pedestrians with convenience and safety. However, it should be noted that in some jurisdictions cyclists may be prohibited from riding side-by-side on shared paths.
- 2.5 m and 3.0 m are the absolute minimum widths for paths having a predominant purpose of commuting and recreation respectively, during periods of peak use.
- 2.0 m is an acceptable path width where the path has a very low use at all times and on all days, where significant constraints exist limiting the construction of a wider path.
- 3.0 m is the minimum path width for a path where high speeds occur.

Figure 5.7: Clearances between cyclist envelope and potential path hazards



- 1 This may be reduced to 0.3 m where a fence or obstacle has smooth features.
- 2 Refer to Section 3.2.2 for guidance on bicycle design envelopes.
- 3 Refer to Section 5.5.3 for guidance on batters and need for a fence.