

**IN THE ENVIRONMENT COURT  
WELLINGTON REGISTRY**

**I TE KŌTI TAIAO O AOTEAROA  
TE WHANGANUI-A-TARA ROHE**

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**ENV-2023-WLG-000005**

<b>UNDER</b>	the Resource Management Act 1991 (the Act)
<b>IN THE MATTER</b>	the direct referral of applications for resource consents and notices of requirement under sections 87G and 198E of the Act for the Ōtaki to North of Levin Project
<b>BY</b>	<b>WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY</b>  Applicant

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**STATEMENT OF EVIDENCE OF DAVID DUNLOP ON BEHALF OF  
KĀPITI COAST DISTRICT COUNCIL**

**TRANSPORT**

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Dated: 26 September 2023

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**A. INTRODUCTION**

- [1] My name is David James Dunlop. I am Major Projects Director at WSP NZ Ltd. I have been in that position since 2021 and worked as a Principal Transport Planner since 2014 for WSP (formerly Opus International).
- [2] I prepared a report (required by section 198D of the Resource Management Act 1991 (“**RMA**”)) on the Notice of Requirement (“**NoR**”) lodged with Kāpiti Coast District Council (“**Council**”) relating to the Ōtaki to North of Levin Highway Project (“**Ō2NL Project**” or “**Project**”). My report was dated 28 April 2023 (“**s198D Report**”).
- [3] As noted in my s198D Report, only a small section of the Project (which includes the Taylors Road interchange) is located within the Kāpiti District. The large majority of the new road will be located within Horowhenua District, which is addressed separately in the transport evidence of Mr Kelly on behalf of Horowhenua District Council (“**HDC**”).
- [4] I confirm I have the qualifications and experience set out at paragraphs 6 - 11 of my s198D Report. Having worked as Contract Manager and Board Member for the Wellington State Highway Network between 2014 and 2022, I have a strong understanding of transportation planning, operation and maintenance of the network in this area.
- [5] I also have a long history of working on the Northern Wellington Expressway, including the original business case, the Peka Peka to Ōtaki (“**PP2Ō**”) Project assessment and Board of Inquiry evidence (2010-2013) for PP2Ō (engaged by Waka Kotahi). The PP2Ō project looked at a range of intersection options, and the preferred solution had half interchanges to the north and south of Ōtaki aimed at addressing accessibility, concentrating urban growth, and channelling traffic into the Ōtaki main street to help bypassed businesses.
- [6] I also undertook some work for Waka Kotahi as Transport Planning Advisor on the Ō2NL Project (2020-2021) before Waka Kotahi decided to look at interchange options for Taylors Road.

- [7] In July 2021, I was engaged by the Council to provide expert advice relating to the Ō2NL expressway. I was not involved in the Multi-Criteria Analysis (“MCA”) process for the Taylors Road intersection for KCDC; however, I was involved in earlier MCA processes on behalf of Waka Kotahi. I worked for Waka Kotahi providing Technical Support (Transport Planning) during the Detailed Business Case Phase (“DBC”), prior to the Taylors Road interchange concept being considered.
- [8] As noted in paragraph 11 of my s198D report, I am familiar with the Ō2NL route and surrounding area. I have visited the area (along with other experts for Kāpiti Coast District Council, and HDC, Horizons Regional Council and Greater Wellington Regional Council experts) on a number of occasions.
- [9] Since filing my s198D Report, I have reviewed the transport evidence of Mr Phil Peet on behalf of Waka Kotahi and prepared a list of outstanding issues which was filed with the Court on 20 July 2023 for the purposes of expert conferencing. I also participated in expert conferencing on Transport matters. The output of that conferencing was a joint witness statement dated 24 July 2023 (the “Transport JWS”). I confirm the contents of the Transport JWS. I discuss any remaining issues and/or related conditions below.

**B. CODE OF CONDUCT**

- [10] I repeat the confirmation provided in my s198D Report that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This evidence has been prepared in accordance with that Code. Statements expressed in this evidence are within my area of expertise, except where I state I am relying on the opinion or evidence of Sean Mallon (Group Manager of Infrastructure Services for the Council) below.

### C. SCOPE OF EVIDENCE

[11] My evidence addresses:

- (a) The extent to which issues identified in my s198D Report have been resolved through Waka Kotahi evidence, expert conferencing and mediation.
- (b) Conditions.

[12] In preparing this evidence I have reviewed the following:

- (a) The NoR for the Ō2NL Project including the Transport Technical Assessment by Philip Jeremy Peet attached as Technical Assessment A to the Assessment of Effects for the Project.
- (b) Consideration of Alternatives Multi Criteria Analysis Summary Report (Detailed Business Case Phase) ("**DBC MCA**") included in Volume II to the NoR.
- (c) Volume III to the NoR: Drawings and Plans.
- (d) Section 92 request issued by the Council ("**S92**").
- (e) Section 92 Response by Waka Kotahi ("**S92 Response**").
- (f) The s198D Transport Assessment of Tim Kelly for HDC.
- (g) The statement of evidence of Lonnie Dalzell (Project Overview) on behalf of Waka Kotahi NZ Transport Agency dated 4 July 2023.
- (h) The statement of evidence of Philip Jeremy Peet (Transport) on behalf of Waka Kotahi NZ Transport Agency dated 4 July 2023.
- (i) The Transport JWS.
- (j) The updated draft proposed conditions prepared by Waka Kotahi following mediation, lodged with the Court and filed with the parties on 4 September 2023 ("**Final Draft Proposed Conditions**").

- (k) The evidence of Sean Mallon, Group Manager of Infrastructure Services, Kapiti Coast District Council.
- (l) The evidence of Tim Kelly (Transport) on behalf of HDC.

**D. OUTSTANDING ISSUES**

[13] I identified the following issues with regard to the Taylors Road interchange in my S198D report:

- (a) I agree with the analysis undertaken by Mr Peet to assess the actual and potential transportation effects of the Project. However, I believe that a better transport outcome would be achieved if a different layout is provided at Taylors Road.
- (b) The proposed Taylors Road interchange will mean that there will be three interchanges in close proximity of Ōtaki with no further interchange for approximately 16km (Tararua Road – Tara-ika). The proposed spacing does not comply with best practice and will result in poor legibility.
- (c) A connection is proposed between the current SH1, north of the interchange, and Taylors Road. This connection will provide improved access to the north (via the current state highway) for Taylors Road properties. It will also provide two options for users of the current SH1 (north of the interchange) to access Ōtaki, either via the new highway/PP2Ō expressway or via the local road access that connects Taylors Road with what will become the old highway. The first option requires those users to access the new highway/PP2Ō expressway for a very short length, and the second option is not suitable for a local arterial function.
- (d) As currently proposed, the Project will result in a gap around Taylors Road in an otherwise continuous local arterial (of suitable standard) between Raumati and north of Levin. The local arterial provides a key alternative for local trips to the new highway/existing

expressways, and resilience in the event of an incident on that section of highway.

- (e) Whilst I consider that an interchange at this location is not ideally situated or well planned, if there must be an interchange at this location, an alternative layout for the Taylors Road interchange (which provides a suitable two-way local arterial access between the existing highway (including Taylors Road) and Ōtaki is possible and should be enabled through the designation conditions. Waka Kotahi has indicated that there is a potential for the design to be amended during the next phase of design (detailed design) to provide a two-way local arterial connection under or over the new highway adjacent to Taylors Road.

[14] In my s198D Report, I identified that the proposed designation extent and Project design would mean that it would be possible to provide a two-way arterial connection under the new State Highway (refer Appendix A2 to my report) or an interchange solution at Taylors Road (as currently proposed) but that the proposed designation extent would make it very difficult, if not impossible, to provide both. Having looked at this further following expert conferencing, and adjusting some design elements of the Project in that location, this does now appear possible (refer paragraph 20 of my evidence below and Appendix A attached to my evidence).

[15] As recorded in the Transport JWS, the issues I raised in my s198D Report about the design of interchange at Taylors Road were not resolved through expert conferencing. At conferencing, we discussed four connectivity options:

- (a) Option 1 – as per the Waka Kotahi proposed design in the NoR, a half interchange with south-facing ramps to the new highway and local road access between Taylors Road and Ōtaki via existing link under Waitohu Stream bridge.
- (b) Option 2 – a continuous local arterial under the new highway that connects the existing SH1 with the old highway through to Ōtaki with no connection to the new highway.

- (c) Option 3 – a continuous local arterial under the new highway that connects the existing SH1 with the old highway through to Ōtaki with a half interchange with south-facing ramps to the new highway.
  - (d) Option 4 – a continuous local arterial under the new highway that connects the existing SH1 with the old highway through to Ōtaki with only a south facing off-ramp from the new highway.
- [16] These four options were discussed and ranked by the transport experts at conferencing. As recorded in the JWS, we all agreed that Option 3 provides the overall best transport outcome. However Option 2 is my preferred outcome because it provides a continuous local arterial between the existing SH1 with the old highway through to Ōtaki and removes a closely spaced interchange on the new highway. My preference is based on my experience of planning and designing transport solutions for communities and users, and would see access points to and from the expressway spaced at optimum and logical locations for future generations (as discussed in my s198D Report).
- [17] Whilst we all agreed that Option 3 provides the overall best transport outcome, as recorded in the Transport JWS, we identified that Option 3 was very likely to be outside the proposed designation boundaries. As also recorded in the Transport JWS, Mr Peet was of the opinion that other factors (such as environmental considerations, property issues and the existence of Māori land) would make Option 3 untenable.
- [18] Having reviewed the Transport JWS, the Council's preferred option (connectivity option 3) is different to mine (connectivity option 2) for the reasons described in the evidence of Sean Mallon. As described by Mr Mallon, the reason for this difference is that Council would rather see an interchange than no interchange. Mr Mallon and I agree that two-way local arterial access under/over the new highway as described in the evidence of Mr Mallon is required. As set out in my s198D Report, the existing local access link is not suitable as an alternative link because it has geometric deficiencies which may create safety and efficiency issues if larger vehicles



are required to use this route as a bypass. This link is also subject to flooding and is designed to act as a flow path for the Waitohu Stream.

- [19] I support Council's desire for a suitable, alternative two-way local arterial access because it is consistent with the objectives of the Project (which are to improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities).<sup>1</sup>
- [20] Since the expert conferencing, I have worked with Sam Thornton (Technical Principal – Transport at WSP) to consider further whether a two-way arterial and half interchange (connectivity option 3) is feasible (which addresses the concerns raised by Mr Peet in paragraph 150 of his evidence) within the proposed designation boundary. We have confirmed that it is feasible, on the basis of an indicative design we have developed (the plans for which are included in Appendix A to my evidence). It should be noted that my plans are not a detailed design and were not developed using Waka Kotahi's 3D model. Like the design included in the NoR, my design would be subject to detailed design, but the plans we have developed do indicate that Council's requested option can be accommodated within the designation corridor.
- [21] For context, all designs need to be checked through the detailed design process, including those for the interchange included in the NoR. Quite often, designs included in a NoR need to be altered when they are reviewed as part of the detailed design by the constructor. Hence why the designation for PP2Ō was altered, as described in the evidence of Mr Mallon.
- [22] The indicative potential alternative design included in Appendix A to my evidence includes the following key features:
- (a) The future arterial roundabout and off-ramp from the new highway are as per the proposed Waka Kotahi design.

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<sup>1</sup> Ōtaki to North of Levin Detailed Business Case, Section 2.3.1 Project Objectives, May 2022.

- (b) The new two-way arterial link connects into the roundabout opposite the Taylors Road link and passes under the new highway approximately 100m north of the bridge in the Waka Kotahi design.
  - (c) The two-way arterial runs parallel with the new highway on the eastern edge of the designation to connect up with the 'old SH1' at its connection to the Taylors Road link.
  - (d) The two-way arterial has Tee-intersections with a property access link immediately east of the new highway, the SH1 on-ramp and the Taylors Road link.
  - (e) The shared use path runs parallel to the two-way arterial on the north/east side, crossing a property access link and property accesses along the two-arterial.
  - (f) The stormwater retention pond in the proposed Waka Kotahi design is bisected by the new two-way arterial, and an indicative alternative location for this has been identified.
- [23] The indicative potential alternative design in Appendix A is based on the following design standards/assumptions:
- (a) The two-dimensional geometry has been based on a 50km/h posted speed limit with a design speed of 60km/h. The design standards for this design speed are able to be achieved (noting that the SISD (Safe Intersection Sight Distance)) uses a lower reaction time than is desirable but is still likely to be acceptable.
  - (b) Cross-section assumptions are noted on the sketches.
  - (c) The posted speed limit on the new two-way arterial is assumed to change to 50km/h north of the roundabout, with the roundabout providing a useful transition in the road environment.
- [24] The following elements of the Waka Kotahi design are largely unchanged as a result of the potential alternative design in Appendix A:
- (a) The length of on and off-ramps.

- (b) The size of the underpass under the new highway (the skew of the bridge structure could be reduced).
  - (c) The number of vehicles that pose a conflict to users of the shared use path.
- [25] The indicative potential alternative design in Appendix A is expected to have the following benefits compared with the Waka Kotahi design:
- (a) It will provide a continuous two-way arterial between Raumati and north of Levin. The local arterial will provide a suitable safe and resilient alternative for local trips to the new highway/existing expressways and in the event that there is an incident between the Southern Ōtaki Interchange and Taylors Road Interchange.
  - (b) It will provide alternative (non-highway) access to Ōtaki for Taylors Road properties.
  - (c) It will provide improved access to the new highway and the arterial route to the north for properties on the east side of the new highway (in the vicinity of the interchange and Waitohu Valley Road).
  - (d) The two-way arterial could also be used as a temporary route to enable construction of the interchange (see Figure 1 below).

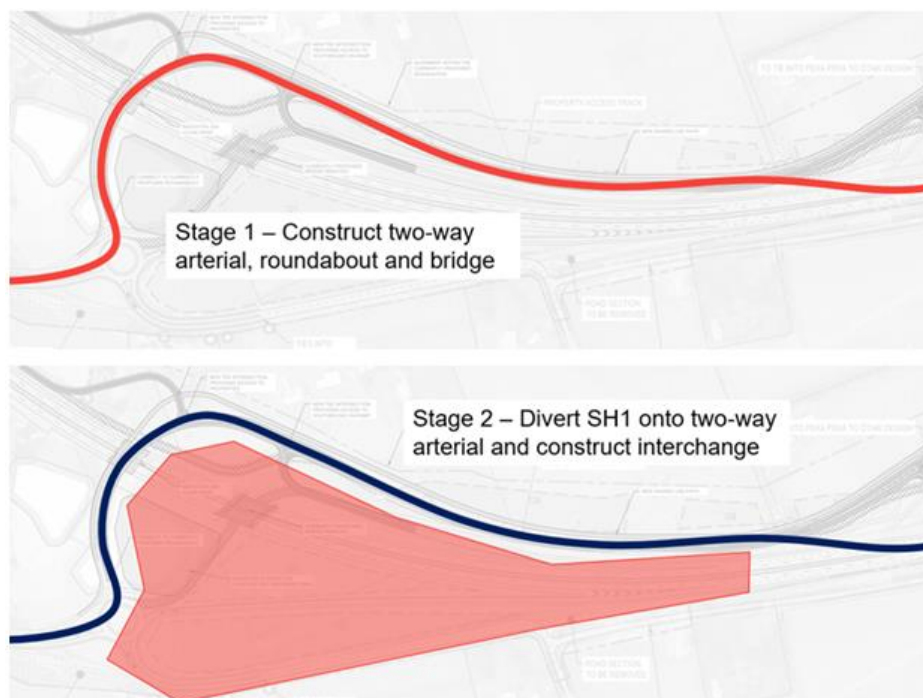


Figure 1: Potential staging benefits of indicative alternative design

- [26] The indicative potential alternative design in Appendix A is expected to have the following potential disadvantages compared with the Waka Kotahi design:
- (a) The shared use path has more conflict points - the shared use path would cross each driveway rather than a single crossing of the access road for the properties in the Waka Kotahi design. However, as noted above, the total number of vehicles that pose a potential conflict is unchanged.
  - (b) It will mean a slightly longer distance (~150m) to reach the southbound on-ramp for vehicles from old SH1 (north).
  - (c) The two-way arterial may cost more (in financial and carbon terms) than the current design but this needs to be considered in the context of construction staging and sequencing.
  - (d) The two-way arterial introduces non-safe-system intersections (e.g. Tee intersections) where no intersection was provided in the Waka Kotahi design. However, this is not a significant safety concern as the

survivable speed<sup>2</sup> for side impact vehicle crashes is 50km/h which is the proposed posted speed limit, and pedestrians and cyclists are separated from the intersections. Furthermore, the intersection form could be mitigated through the addition of raised safety platforms if required.

- [27] The potential disadvantages identified above, and measures to address them, can be considered as part of the detailed design process and the safety audit. The designers and planners could also decide to look at the designation boundary in this location in order to optimise the solution and outcomes.
- [28] Based on the above design and assessment, it is evident that the opportunity exists to provide a suitable safe and resilient two-way alternative local arterial connection between Taylors Road and the existing SH1, while also providing the half interchange arrangement proposed by Waka Kotahi. The benefits of providing this alternative connection are much greater than the disadvantages, while the opportunity exists through the detailed design process to address the potential disadvantages identified above. On this basis, I consider that the provision of a two-way alternative local arterial connection should be enabled through the conditions of the designation so that my design (or an alternative design) can be considered further by Waka Kotahi at detailed design stage and included in the Outline Plan of Works. A draft condition which enables this to occur is included in the evidence of Mr Mallon. I can confirm that I have reviewed that condition and am comfortable with it.

## **E. CONDITIONS**

- [29] I have reviewed the Final Draft Proposed Conditions (updated by Waka Kotahi following mediation and circulated to the parties on 4 September 2023). I am comfortable with the conditions subject to the additional condition described above being included, which would enable my design

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<sup>2</sup> <https://www.nzta.govt.nz/assets/resources/high-risk-intersections-guide/docs/high-risk-intersections-guide.pdf>

(or a variation thereof) to be considered further by Waka Kotahi at detailed design stage and included in the Outline Plan of Works.

- [30] I also support the additional conditions recommended in the evidence of Mr Kelly for HDC in relation to a requirement for local roads pre and post construction surveys (and make-good obligations in the case of damage occurring) and a requirement for preparation of a Network Integration Plan.

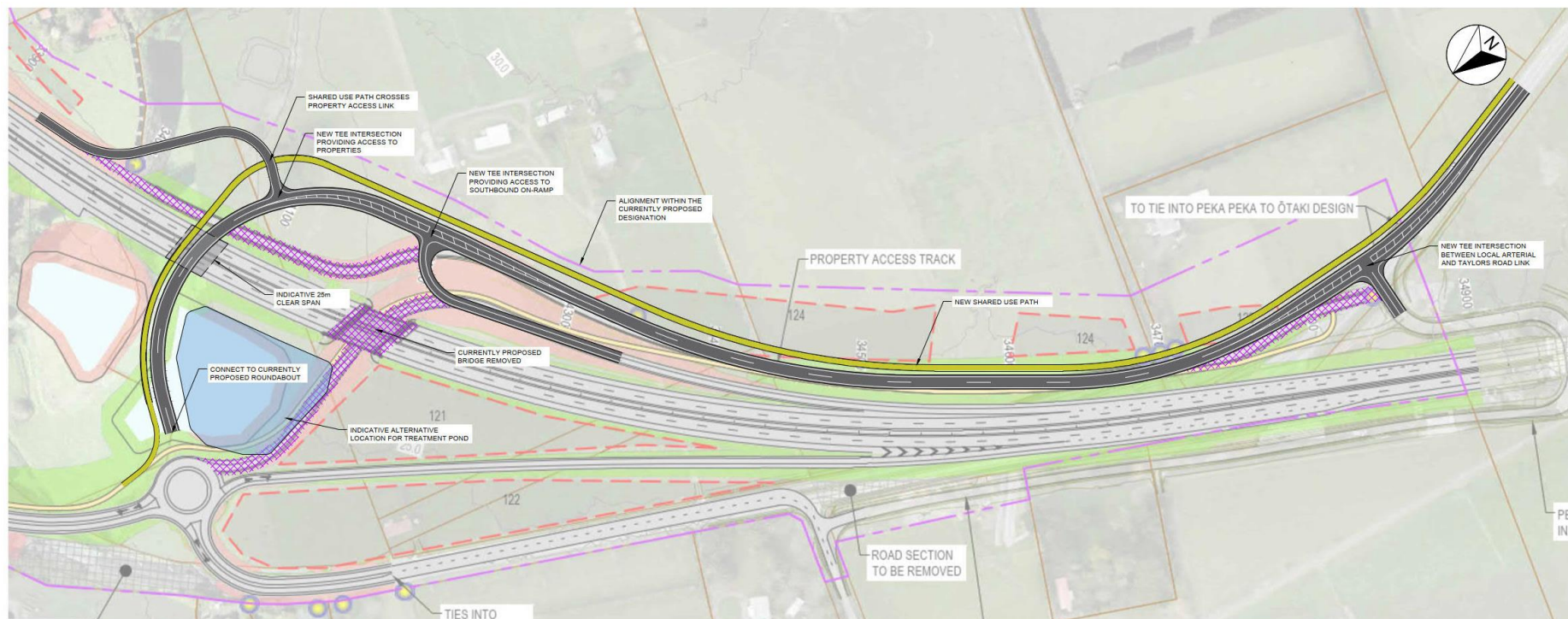
#### **F. CONCLUSION**

- [31] My evidence supports the overall transport assessment of the Ō2NL Project, although I consider that a better outcome could be achieved for future generations in relation to the proposed Taylors Road Interchange. I remain of the view that the Taylors Road interchange is not ideally situated in terms of transport outcomes, community connectivity and serving future generations (e.g. 3 interchanges within 4km and then nothing for a further 16km).
- [32] On the basis that Waka Kotahi wish to provide an interchange at Taylors Road, I consider that it is essential that a suitable two-way arterial in the vicinity of the interchange is provided as an alternative to the Ō2NL expressway. My evidence demonstrates that this can be achieved within the proposed designation boundary through minor adjustments to the proposed design.
- [33] I consider that the condition identified in Sean Mallon's evidence in relation to the Taylors Road interchange should form part of the designation, so that Waka Kotahi can work with the Council on provision of an appropriate two-way local arterial.

**David Dunlop**

**26 September 2023**

## Appendix A – Alternative Design – Two Way Access



- NOTES:
1. SKETCH BASED ON SCALED PDF FROM WAKA KOTAHĪ WEBSITE WITH +/- 5% ACCURACY
  2. SKETCH PREPARED IN TWO DIMENSIONS ONLY
  3. POSTED SPEED LIMIT ASSUMED TO BE 50km/h NORTH OF THE ROUNDABOUT
  4. TWO-WAY ARTERIAL ASSUMED TO BE 2 X 3.5m LANES WITH 2 X 1.0m SHOULDERS
  5. SHARED USE PATH ASSUMED TO BE 3.0m WITH 2 X 0.5m SHOULDERS
  6. 2.5m MINIMUM SEPARATION BETWEEN TWO-WAY ARTERIAL AND SHARED USE PATH



## Appendix A – Alternative Design – Sight lines

Red line – Stopping Sight Distance (SSD)

Blue line – Safe Intersection Sight Distance (SISD)

