

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER Plan Change 6 to the Hamilton City Operative District Plan:
Regulatory Efficiency and Effectiveness Plan Change.

STATEMENT OF EVIDENCE OF ALASTAIR JAMES BLACK

Dated 7 May 2020

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INTRODUCTION

1. My name is Alastair James Black. I hold a Bachelor of Engineering degree (Civil, 2002) from the University of Canterbury. I am a Corporate Member of the Engineering New Zealand (CMEngNZ) and a Chartered Professional Engineer (CPEng). I have worked in the transportation field for 17 years.
2. I am based in Hamilton and have worked for Gray Matter Ltd as a transportation engineer since March 2009. For two years prior to that I was a Project Engineer for the London Borough of Hammersmith and Fulham. For the previous six years I was a civil/transportation engineer with Opus International Consultants Ltd in Hamilton.
3. I am familiar with the transport issues arising in and around the Waikato, having provided advice to Hamilton City Council (HCC) and other local authorities, NZ Transport Agency (NZTA) and developers on range of transport related projects in the area. I have the following specific experience relevant to the matters within the scope and purpose of this statement of evidence:
 - (a) Consultant traffic engineer assisting Hamilton City Council with developing the transportation provisions of the Proposed District Plan (PDP);
 - (b) Consultant traffic engineer/transportation planner for the Access Hamilton Strategy (2010), and the Waikato Expressway Network Plan (2012);
 - (c) Consultant traffic engineer/transportation planner assisting Council's with the development of structure plans and District Plan provisions, including Temple View for HCC, St Leger Concept Plan for Waipa District Council and Matamata Precinct F for Matamata Piako District Council;
 - (d) Consultant civil/transportation engineer for Road Controlling Authorities assisting in the review of consent applications including quarries, industrial, commercial, childcare and residential developments within wider Waikato region;
 - (e) Consultant civil/transportation engineer for developers, landowners and local authorities preparing traffic impact assessments for development

proposals including quarries, rest homes, museums, childcares, schools and commercial developments.

- (f) Consultant project manager for HCC and NZTA for the Southern Links Investigation relating to a Notice of Requirement for 32km of proposed arterial road network to the south of Hamilton; and
- (g) I have completed the NZTA Road Safety Engineering Workshop and have led safety audits on urban and rural improvement projects for local roads and state highways.

EXPERT CODE OF CONDUCT

- 4. I confirm that I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court, Practice Note (2014), and agree to comply with that Code of Conduct. I state where I have relied on the statements of evidence of others for my assessment. I have not omitted to consider material facts known to me that might alter or detract from my opinions.

OVERVIEW OF EVIDENCE

- 5. I have been retained by HCC to provide traffic engineering and transportation planning advice relating to Plan Change 6 (PC6) to the Hamilton City Operative District Plan. I prepared an initial review of transport submissions in "Plan Change 6: Regulatory Effectiveness and Efficiency Programme (REEP) – Transportation Submissions (12 February 2020).
- 6. The purpose of this statement of evidence is to address transportation matters raised in submissions and expert evidence relating to PC6. I understand that HCC considers submission points related to service berm width and criteria for collector roads out of scope and I have not commented on these matters.
- 7. In preparing this evidence I have reviewed the evidence of:
 - (a) Mr Craig Sharman (Beca) on behalf of Kainga Or Homes and Communities, dated 1 May 2020;
 - (b) Ms Judith Makinson (CKL) for Chedworth Properties Ltd, dated 1 May 2020; and
 - (c) Mr Andrew Cumberpatch (Boffa Miskell) for Chedworth Properties Ltd, dated 1 May 2020.

KAINGA ORA HOMES AND COMMUNITIES

8. PC6 introduces a new provision that allows vehicle crossing on local roads with a posted speed limit of 50km/h or less to be located as far as possible from other vehicle crossings where the minimum separation cannot be achieved.
9. Kainga Ora¹ seeks to introduce a new provision into Rule 25.14.4.1 as follows:
 - iv. *On roads with a posted speed above 50km/h where compliance with i. or ii. above cannot be achieved as part of any land use activity the proposed vehicle crossing shall be separated as far as possible from any other existing or proposed crossing.*
10. The relief sought would potentially allow closely spaced vehicle crossings on higher speed, collector and arterial roads without site-specific assessment.
11. Speed at the time of a crash is the biggest predictor of crash forces. The figure below shows the Safe System collision speeds for vulnerable road users, side impact and head-on crashes. At a collision speed of 50km/h the risk of death and serious injury is low (10%) for vehicle-vehicle impacts increasing to 80% at a collision speed of 70km/h.

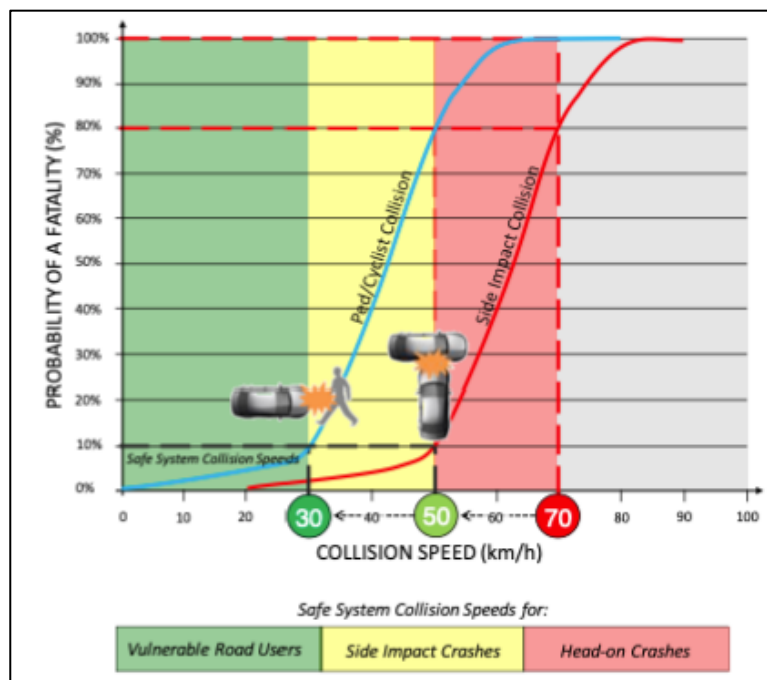


Figure 1: Probability of a Fatality vs. Collision Speed²

12. I do not support the relief sought by Kainga Ora. I consider that it is appropriate to require assessment of vehicle crossing locations that do not meet Rule 25.14.4.1a) i) or ii) where the posted speed limit is greater than 50km/h.

¹ Evidence of Craig Sharman, para 47-52

² Vicroads, Road Design Note RDN 03-07 Raised Safety Platforms (RSPs), December 2019

CHEDWORTH PROPERTIES

13. The evidence of Mr Cumberpatch and Ms Makinson support the relief sought by Chedworth Properties based on these transport related matters:
- (a) Providing flexibility in transport corridor design; and
 - (b) Creation of low speed environments, including on-street parking.

Design Standards

14. Ms Makinson³ provides discussion of NZS 4404 and describes the form of live and play (residential) roads based on that standard. In my view, there is clear direction in both the District Plan and the RITS that the appropriate method of achieving the city's transportation objectives and policies is the criteria set out in the District Plan, not Table 3.2 of NZS 4404.
15. The District Plan Assessment Criteria for New Transport Corridor Design G11 states: *"The extent to which transport corridor design provides design elements identified in or otherwise contrary to any criteria contained in Table 15-6a of Appendix 15."* There is clear direction that the primary reference document for assessment of road cross-sections is the District Plan.
16. The notes to these assessment criteria state *"In considering the above matters Council **may** have regard to relevant parts of Austroads Design Guides and NZS 4404:2010 Land Development and Subdivision Infrastructure, and the Hamilton City Infrastructure Technical Specifications⁴."* (emphasis added).
17. Furthermore, Section 3.3.1 of the Regional Infrastructure Technical Specification (RITS) states: *"Roads shall be designed with reference to the transportation functional classification table contained in the relevant District Plan and NZS 4404 Section 3.3. However all references within Section 3.3 (NZS 4404) to Table 3.2 (NZS 4404), shall be taken instead to refer to the table in the relevant district plan."*

Flexibility in Road Corridor Design

18. At Appendix 15-4 Transport Corridor Hierarchy Plan and Definitions, the District Plan discusses how function and land use influence the form of transport corridors by changing the allocation of space to prioritise different transport users or modes. The balancing of movement, access and place is reflected in

³ Makinson, paras 7-12

⁴ I note that the Hamilton City Infrastructure Technical Specifications have been superseded by the Regional Infrastructure Technical Specification (RITS)

the functional definitions (Appendix 15-4c-k) and criteria for local transport corridors (Table 15-6a)i) and Table 15-6a)ii)).

19. Major and minor arterials are typically designated or developed through structure plans and require more flexibility in their design. I consider it appropriate for the design of these corridors to be subject to specific design.
20. Without specific criteria, every new or altered local roads would require specific design for every application and subsequent assessment by Council. Providing criteria in the District Plan avoids unnecessary design and assessment for every new local road.
21. Rule 25.14.3b) specifies the activity status of all new transport corridors as Restricted Discretionary. Where appropriate for the land use and function of new roads, Council has used this discretion and granted consent for cross-sections that do not meet the District Plan criteria. For example, park side lanes with reduced walking facilities where paths are provided within the adjacent park/reserve. In my opinion, case-by-case assessment of alternative cross-sections is appropriate and the District Plan criteria are necessary to provide a basis for assessment where the criteria are not achieved. It is unclear what performance standards would be used for the Restricted Discretionary if the submission seeking “specific design” is granted.
22. I do not support the submission seeking “specific design” for local road corridors. I consider that the criteria set out in Table 15-6a)i) and Table 15-6a)ii) are required to ensure consistency in design across the local road network, provide a basis of assessment where the criteria are not achieved and they provide a range of cross-sections depending on the function of the road.

Speed Environment

23. One reason that both Mr Cumberpatch⁵ and Ms Makinson support providing road corridor flexibility is to create low speed environments. In my view safe and appropriate speeds on local roads can be achieved within the transport corridor criteria set out in the District Plan. The proposed criteria set out the design speed environment for local roads as 40km/h and 10-20km/h on private ways.
24. The design speed environment of 40km/h for local roads is consistent with the principles of the HCC Speed Management Plan⁶ which states:

⁵ Cumberpatch, paras 7.2-7.3

⁶ HCC Speed Management Plan, Version 2, June 2019

- (a) Residential local roads will be constructed for a 40km/h environment;
 - (b) Where there are high numbers of people walking, biking and crossing the road the speed environment will be 30km/h; and
 - (c) New roads will be constructed appropriate to the function and to create a safe and appropriate environment.
25. Figure 1.4 of the NZ Transport Agency Speed Management Guide⁷ provides recommended safe and appropriate speed ranges for road classes. For urban local (Class 4) and collector roads (Class 3) this recommends:
- (a) 30-50km/h;
 - (b) 30km/h if high volumes of cyclists/ pedestrians; and
 - (c) 10km/h for shared spaces.
26. It also provides examples of the look and feel of road at different speed limits. I have included the example of an urban road with a 40km/h speed limit at Attachment 1. This example describes a wide range of engineering measures that can be used to provide a self-explaining speed environment. These measures include:
- (a) Narrow lanes (2.7m-3.2m), corresponding to a 5.4-6.4m carriageway;
 - (b) Short length one-way system;
 - (c) Vertical deflection;
 - (d) Horizontal deflection; and
 - (e) Kerbside parking.
27. In my view safe and appropriate speeds on local roads can be achieved within the transport corridor criteria set out in the District Plan, and that the design speed environment is consistent with both the local and national Speed Management Guides.

CONCLUSION

28. In summary, I do not support the submission seeking “specific design” for local road corridors. I consider that the criteria set out in Table 15-6a)i) and Table 15-6a)ii):
- (a) Avoids unnecessary specific design and assessment for every new road;
 - (b) Are required to ensure consistency in design across the local road network;

⁷ NZ Transport Agency, Speed Management Guide (First Edition, November 2016), Volume 2: Toolbox – how to implement treatments and activities

- (c) Are necessary to provide a basis for assessment where the criteria are not achieved; and
- (d) Provides a range of cross-sections depending on the function of the road.



29. In my view safe and appropriate speeds on local roads can be achieved within the transport corridor criteria set out in the District Plan, and that the design speed environment is consistent with both the local and national Speed Management Guides.

A handwritten signature in black ink, appearing to read 'A. Black', written in a cursive style.

Alastair Black

Dated 7 May 2020

Appendix 1: Management Guide, Urban Road – 40km/h Speed
 NZ Transport Agency, Speed Management Guide (First Edition, November 2016),
 Volume 2: Toolbox – how to implement treatments and activities

Urban Roads - 40km/h	
Description	<p>40 km/h speed limits are typically used when ONRC is class 3 or 4 in residential neighbourhoods or high 'place' value. Engineering treatments are typically required to reduce operating speeds. Pedestrians frequently cross the road but through traffic typically has priority. Cyclists are more likely to share the road with traffic.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">  <p>Residential (Source: C Mason)</p>  <p>Residential (Source: C Mason).</p> </div> <div style="width: 35%;"> <p>Local Road (City)</p> <ul style="list-style-type: none"> • No road marking or signs • Narrow roads • Planting • Informal parking <hr/> <p>Local Road (City)</p> <ul style="list-style-type: none"> • No marking unless needed • Threshold entry treatments • Horizontal deflection devices • Narrow roads • Planting </div> </div>
ONRC	Class 3 and 4
Point of Difference	<p>Engineering measures are used to make the speed environment self-explaining (Toolbox SE1) and typically include:</p> <ul style="list-style-type: none"> • Narrow lanes (2.7-3.2 m) with no or little road markings and except where required for regulatory requirements such as no parking • Short length one way system • Little or no signs and markings (Toolbox RS1) AR2, SE1, RS2, • Vertical deviation (speed humps, speed tables, speed cushions, crossing platforms), Toolbox TC1-11 [except TC 2], AR2) • Horizontal deviation (low speed roundabouts, chicanes, kerb build outs, pedestrian islands), Toolbox TC1-11 [except TC 2], AR2) • Kerbside parking (angle or parallel parking without continuous edge line) • Intersections modifications such as change in priority, restriction of movements (Toolbox IN1 and IN2) with or without splitter islands • Threshold entrances (Toolbox ES1, TC5) • Splitter islands at intersections • Planting • Cobbled or paving type surfaces (Toolbox TC5) • Restricted movements for certain modes (i.e. cyclists can access road but vehicles cannot) • Sharrows.
Not Recommended	<ul style="list-style-type: none"> • Active signs (Toolbox RS1, RS3, AS4, AS5, AS7) unless there is a high risk site within a corridor that needs highlighting • Curve advisory signs