BEFORE INDEPENDENT HEARING COMMISSIONERS IN CHRISTCHURCH

TE MAHERE Ā-ROHE I TŪTOHUA MŌ TE TĀONE O ŌTAUTAHI

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of the hearing of submissions on Plan Change 14 (Housing and Business Choice) to the Christchurch District Plan

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STATEMENT OF PRIMARY EVIDENCE OF MICHAEL CHRISTOPHER ROSSITER ON BEHALF OFCHRISTCHURCH CITY COUNCIL

TRANSPORT ENGINEERING - PRIVATE WAYS AND VEHICLE ACCESS

Dated: 11 August 2023

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EXECUTIVE SUMMARY

1. My full name is **Michael Christopher Rossiter**. I am employed as Principal Transportation Engineer with Stantec NZ.

2. I have prepared this statement of evidence on behalf of the Christchurch City Council (the **Council**) in response to the submissions on the proposed amendments to the Transport Chapter in Plan Change 14 (**PC14)** to the Christchurch District Plan (the **District Plan**).

3. My statement of evidence addresses submissions on the following matters:

   (a) Minimum Requirements for Private Ways and Vehicle Access;

   (b) High Trip Generators;

   (c) Accessible Parking;

   (d) Loading Bays;

   (e) Garage Dimensions; and,

   (f) Emergency Vehicle Access.

4. Multiple submitters seek a reduction in the private way and vehicle access width requirements in Table 7.5.7.1. I oppose these submissions. In my opinion, the greater width requirements provide a balance between improving accessibility for all modes and safety at driveways while not requiring excessive areas of land.

5. The requirements for the minimum number of accessible parking spaces is based on the standards in NZS4121[1]. However, following the removal of minimum parking space requirements as directed by the NPS-UD, this creates a situation where accessible parking may not be provided because the number of standard parking spaces has been reduced or are not provided. However, this does not remove the need for accessible parking. In response to a submission on this matter, I have suggested an alternative approach for minimum supply requirements for residential developments.

INTRODUCTION

6. My full name is **Michael Christopher Rossiter**.

[1] NZS4121:2001 Design for Access and Mobility – Buildings and Associated facilities.

7. I hold the position of Principal Transportation Engineer at Stantec New Zealand Limited (**Stantec**). I have been in this position since 2013 and have been employed at Stantec (and Traffic Design Group (**TDG**) prior to its incorporation with Stantec) since 2006. Prior to joining TDG (now part of Stantec) in 2006, I was employed as a Principal Systems Engineer and Technical Manager with BAE Systems in England.

QUALIFICATIONS AND EXPERIENCE

8. I hold the academic qualifications of Bachelor of Science from the University of Exeter and Bachelor of Arts (Open) from the Open University.

9. I am registered as a Chartered Engineer with Engineering New Zealand. I have over 35 years engineering experience including 16 years' transportation engineering in New Zealand on a wide range of projects involving transportation engineering, transportation planning and assessment, analytical investigations and road safety audits. My role also include providing transportation engineering advice to district councils.

10. My relevant experience includes providing technical advice on the transport rules and standards within the proposed district plans for:

    (a) Queenstown Lakes District Council;

    (b) Waimakariri District Council;

    (c) Napier City Council; and

    (d) Carterton District Council in relation to the Wairarapa Combined District Plan.

11. I was engaged by the Christchurch City Council in 2022 to provide advice in relation to the drafting of the revisions to the Transport Chapter for PC14. My primary role was to provide comment on the draft changes proposed the Council and identify transport rules where changes to the existing plan would be appropriate to achieve better transportation outcomes with higher density residential development. A key focus of my discussions with the Council was improving pedestrian access for all levels of mobility, safer driveways and crossing design.

12. In preparing this evidence, I have taken into account the following documents:

    (a) PC14 submissions;

(b) National Medium Density Design Guide;

(c) AS/NZS 2890.1 Parking Facilities Part 1: Off-street parking;

(d) Waka Kotahi Pedestrian Design Guide; and

(e) FENZ Designers Guide to Firefighting Operations, Emergency Vehicle Access, F5-O2-FD.

13. I am authorised to provide this evidence on behalf of the Council.

CODE OF CONDUCT

14. While this is a Council hearing, I confirm that I have prepared this evidence in accordance with the Code of Conduct for Expert Witnesses Code of Conduct for Expert Witnesses contained in Part 7 of the Environment Court Practice Note 2023. The issues addressed in this statement of evidence are within my area of expertise except where I state that I am relying on the evidence or advice of another person. The data, information, facts and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

SCOPE OF EVIDENCE

15. My statement of evidence addresses submissions on the following matters:

(a) Minimum requirements for private ways and vehicle access;

(b) High trip generators;

(c) Accessible parking;

(d) Loading bays;

(e) Garage dimensions; and,

(f) Emergency vehicle access.

16. I address each of these points in my evidence below.

MINIMUM REQUIREMENTS FOR PRIVATE WAYS AND VEHICLE ACCESS

17. There are multiple submitters (S30, S89, S684, S685, S720, S762, S814, S823, and S842) seeking removal of the proposed amendments to Table 7.5.7.1 which sets out minimum width requirements for private ways and vehicle access.

18. The proposed amendments to the minimum formed width and minimum legal width requirements in Table 7.5.7.1 are intended to improve accessibility for all travel modes, improve pedestrian safety at driveways and achieve better alignment with the recent changes in design guides and standards such as:

    (a) National Medium Density Design Guide;

    (b) Pedestrian visibility splay requirements;

    (c) Universal access; and

    (d) Emergency vehicle access.

19. I comment on each of these design guides in turn and the implications on minimum width requirements for accessways.

National Medium Density Design Guide

20. The National Medium Density Design Guide was issued in May 2022 and sets out a range of design principles relating to site layout and access. This includes recommendations for minimum pedestrian path widths of 1.2 metres, locating parking away the street, ensuring driveways are designed for slow speed and can be shared by pedestrians and motor vehicles. The guide recommends provision of a minimum 3 metre wide accessway with 800 mm of planting on each side. This guidance could require a minimum legal accessway width of 4.6 metres, an increase of 1.6 metres compared with the existing District Plan requirement. The minimum sealed width requirement is 300 mm wider than the existing District Plan requirement for 1-3 units.

Pedestrian Visibility Splays

21. The District Plan requires visibility splays to be provided in accordance with Appendix 7.5.9 where the number of spaces served by an accessway is greater than 15. Appendix 7.5.9 of the District Plan states:

> *The visibility splay areas (as shown on Figure 11) are to be kept clear of obstructions in all cases for visibility reasons. Landscaping or other features may be contained within the visibility splay areas, as long as it does not exceed 0.5 metres in height.*

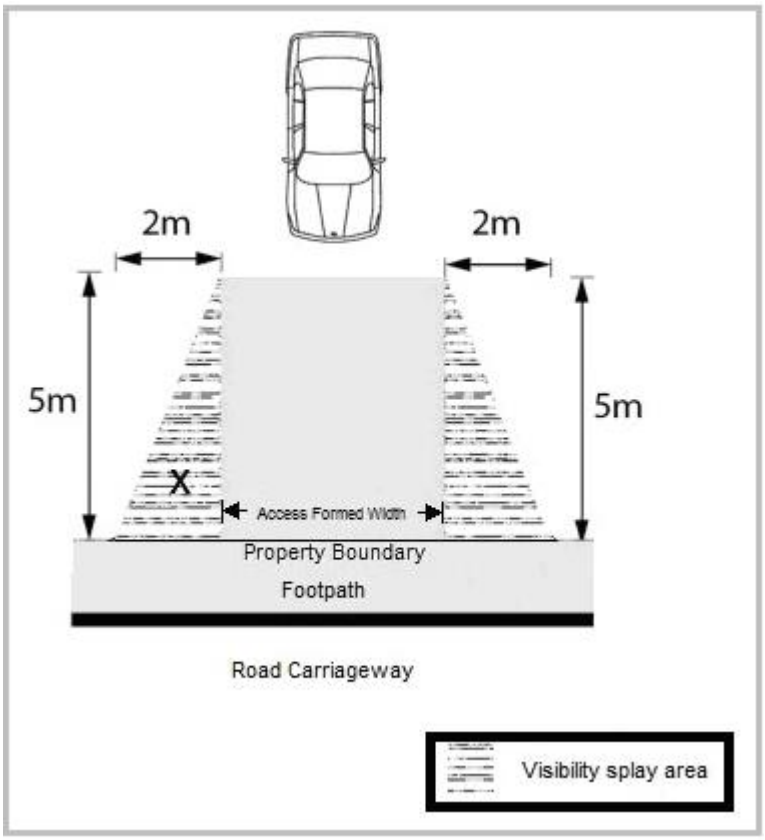

Figure 1: CCC Operative District Plan Transport Chapter Figure 11

22. To ensure that any required visibility splay does not cross any adjacent property, the formed width of the access would need to be offset by at least 2 metres from the property boundary.

23. Meeting this requirement could potentially require the legal width of an accessway to be up to 7 metres wide to ensure that there was no reliance on height controls within the adjacent.

24. Appendix 7.5.7 also sets out access design requirements. These include a requirement for clear visibility above 1 metre within a triangle measured for a width of 1.5 metres either side of the entrance and for a length at least 1.5 metres from the road boundary. To ensure that there was no reliance on height restrictions in an adjacent property, this requirement effectively requires a minimum legal width for the crossing of 6 metres.

25. In summary, accessways for 1-6 units formed to the minimum standards set out in the District Plan would not necessarily meet the visibility splay requirements. This would depend upon the location of any footpath with respect to the property boundary, the position of the driveway with respect to the property boundary and would need to be addressed on a case-by-case basis. Increasing the minimum legal width requirements in Table 7.5.7.1 will contribute to ensuring that larger

pedestrian visibility triangles are available without the need for height controls in an adjacent property.

Universal Access

26. The width of the NZS2890.1:2004 B99 design vehicle is 1.94 metres and 1.87m for the B85 design vehicle. The analysis of the Australia and New Zealand vehicle fleet which has been completed for the update of the standard indicates that vehicles are now longer and also wider than in 2004 at 1.9 metres for the B85 design vehicle and 2.1 metres for the B99 design vehicle.

27. The Waka Kotahi pedestrian planning guide suggests a width of 1.0 metres should be provided for an ambulant pedestrian and 1.2 metres for a wheelchair user. A cyclist would also require a minimum width of 1.0 metres. The planning guide also notes that a 1.0 metre path width would be sufficient to accommodate about 80 percent of wheelchair users.

28. **Figure 2** shows graphically the available space for a pedestrian or wheelchair user adjacent to a motor vehicle on a 3 metre wide accessway. Even with the vehicle occupying a 2 metre wide space on one side of the accessway, the clearance between the vehicle and pedestrian will be small.

29. A formed width for an accessway of 3 metres as recommended in the Medium Density Design Guide would be just sufficient for an ambulant pedestrian and 80 percent of wheelchair users to pass a B85 design vehicle. It would provide a constrained width for wheelchair users particularly if passing a B99 design vehicle. A formed width of 3.3 metres would be required to allow for all wheelchair users to pass a B99 design vehicle.

30. I consider that a formed width of 3 metres as recommended in the Medium Density Design Guide represents an absolute minimum for an accessway. This is wider than the existing minimum requirement in the District Plan for 1-3 units.

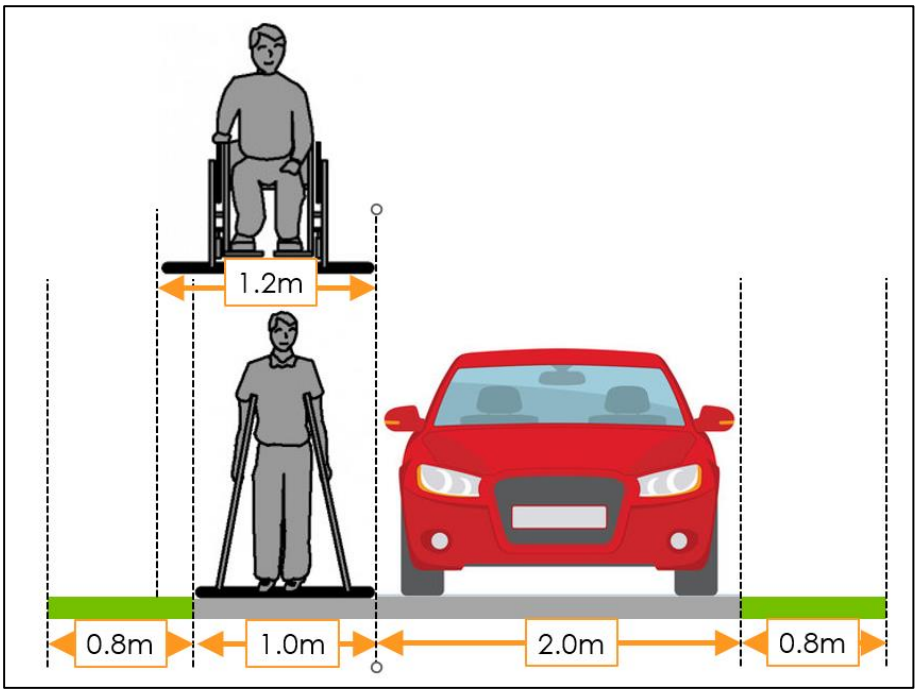

Figure 2: Active Mode Access

Fire and Emergency Vehicle Access

31. The design guide for emergency vehicle access requires a minimum carriageway width of 4.0 metres to provide sufficient space for door opening and equipment access on each side of a parked truck. This width will only be necessary where emergency access is not possible from the street. The design standard does note that the minimum width can be reduced to 3.5 metres at gates.

32. For general movement of an emergency vehicle, a 3.5m wide formed width would normally be sufficient but additional widening may be required if the accessway includes curves. The extent of any additional widening will be dependent on the curve radius and length of the curve.

Summary

33. **Table 1** provides a summary of accessway width requirements to meet the different design criteria. Under all the design criteria that I have considered, the minimum formed width and legal width necessary to provide for safe pedestrian movement and pedestrian sight triangles are all greater than in the current District Plan. Based on my review of these design requirements, I consider that it would be desirable to specify a minimum formed width for an access of 3.3 metres to provide for universal access and a minimum legal width of 5.0-6.0 metres to meet visibility splay requirements.

34. This represents significant widening compared with existing requirements but would contribute to improving access and reducing the potential for crashes at driveway. However, I am aware that does create a tension with the objectives of PC14 to enable greater development because it requires a greater amount of land to be allocated to vehicle access.

35. During the drafting of the PC14 amendments, a compromise widening requirement was adopted that reduced the total land requirement for access to support enabling of development while still offering some improvements to safety and accessibility.

Table 1: Summary of accessway requirements (1-6 units)

	Minimum Formed Width	Landscape	Minimum Legal Width
District Plan (PC14)			
1-3 units	~~2.7~~ 3.0		~~3.0~~ 4.0
4-8 units	3.0		~~3.6~~ 4.0
9-15 units	~~4.0~~ 5.0		~~5.0~~ 6.0
Medium Density Design Guide	3.0	2 x 0.8	4.6
Pedestrian Visibility Splay			
NZS2890.1 (Proposed)	3.0	2 x 1.5	6.0
CCC District Plan (1-3 units)	2.7	2 x 1.5	5.7
Universal Access	3.3	2 x 0.8[2]	4.9
Fire and Emergency Access	4.0	2 x 0.8[2]	5.6

36. Overall, I recommend that the submissions seeking retention of the existing minimum requirements for private ways and vehicle access should be rejected because this is inconsistent with the National Medium Density Design Guide and would represent a poorer outcome from a pedestrian safety perspective. Based on my review of access design criteria, I would support an increase in the minimum legal width requirement for 4-8 units of 4.6 metres as shown in **Table 2** because of the higher volume of vehicle movements that will occur at this type of driveway.

[2] Medium Density Design Guide minimum.

Table 2: Suggested Amendment to accessway requirements

	Minimum Formed Width	Minimum Legal Width
District Plan (PC14)		
1-3 units	~~2.7~~ 3.0	~~3.0~~ 4.0
4-8 units	3.0	~~3.6~~ 4.6
9-15 units	~~4.0~~ 5.0	~~5.0~~ 6.0

HIGH TRIP GENERATORS

37. A proposed amendment to the assessment matters for High Trip Generating activities in Policy 7.2.1.2 is to include the consideration of the extent to which a proposal incorporates measures to reduce greenhouse gas emissions from vehicular trips. I understand that this forms part of a package of measures to encourage greater use of active travel modes.

38. It is not the intention of the policy and rule to require detailed analysis of greenhouse gas emissions, but rather a more generic approach was expected, for example, by demonstrating what measures are proposed to promote use of travel modes other than private vehicles or promote use of vehicles that do not generate greenhouse gases such as electric vehicles. The drafting was deliberately non-specific about the types of measures to be considered so that it did not constrain options.

39. I consider that travel by all modes is something that should be included in an Integrated Transport Assessment (**ITA**), which must be prepared where consent is required for High Trip Generators. I accept that is often addressed only at a high level because achieving mode shift and influencing travel patterns will be beyond the control of a typical resource consent application. Often, it only becomes practical with much larger developments or subdivisions. In the context of the MDRS, I consider that this should be about increasing residential density close to public transport services, cycle routes, places of employment and not oversupplying parking to reduce the need for people to travel using a private vehicle. These are all matters that should be addressed in an ITA.

40. In my opinion, the addition of a requirement to assess emissions should fall naturally out of the overall effects assessment and should not add a significant cost to the production of an ITA. As such, I disagree with the submitters (S814, S823) who are opposed to this proposed change and recommend that the submissions are rejected.

ACCESSIBLE PARKING

41. Table 7.5.1.1 sets out the minimum number of accessible parking spaces to be provided on a site as a function of the number of standard parking spaces. Since the implementation of the NPS-UD removed minimum parking supply requirements, this creates a situation where no accessible parking spaces are required if less than 20 parking spaces are provided. In my opinion, this is not a desirable outcome in the context of MDRS where there will always be a need for some residents to have easy access to a parking space for mobility reasons.

42. The Waipapa Papanui-Innes-Central Community Board submission (S288) seeks compulsory provision for accessible parking. I support this submission and have investigated how this could be implemented.

43. I have not been able to locate any specific guidance for supply rates for accessible parking for residential development. However, I am aware that the issue of accessible parking supply rates has been addressed by the Kāpiti Coast District Council (**KCDC**) in Plan Change 1A to their district plan and also in Proposed Plan Change 79 to the Auckland Unitary Plan (**PPC79**).

44. The KCDC change was specifically introduced to establish minimum parking supply rates for accessible parking following the removal of minimum parking requirements. Table 3 shows their proposed minimum supply rates for multi-unit developments that could typically be expected with implementation of the MDRS.

Table 3: Accessible Parking Requirements – Kāpiti Coast District Council

Activity	Accessible parking spaces
Multi-unit residential	4-5 units: 1 space
	6-25 units: 2 spaces
	1 additional space for each 25 units thereafter

45. Although the s32 report for the KCDC plan change does not provide the analysis for the rates that have been adopted, the rule does require that an accessible parking space is available once four units are being developed and then gradually increases the supply rate requirement thereafter. I consider that a starting threshold of four units for requiring an accessible parking space is low but note that the supply rate above six units is very low and that a third space is not required until a development has 50 units.

46. The s32 report for PPC79 to the Auckland Unitary Plan (**AUP**) proposes a similar approach but with different thresholds to reflect their forecast that 10 percent of the New Zealand population in the future will have a mobility impairment.

Table 4: Accessible Parking Requirements – PPC79 to AUP

Activity	Accessible parking spaces
Residential Activity	10-19 units: 1 space
	20-29 units: 2 spaces
	30-39 units: 3 spaces
	1 additional space for each 10 units thereafter

47. Both approaches ensure that accessible parking spaces will be available as the size of the development and number of dwelling units increases. **Figure 3** provides a graphical comparison of the parking requirements.

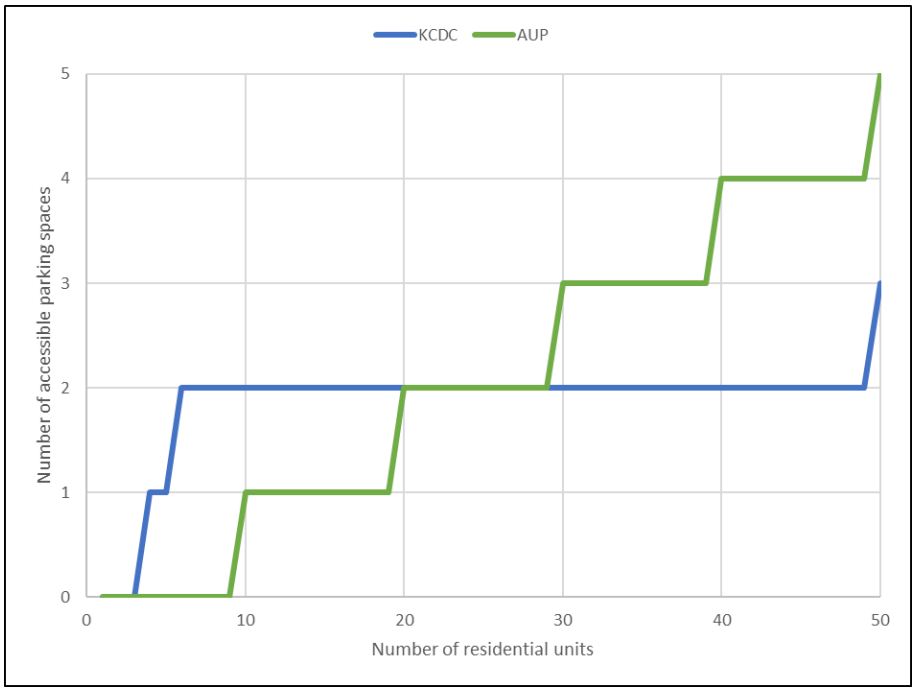

Figure 3: Accessible Parking Requirements

48. **Figure 3** shows that the KCDC approach has a rapid increase initially but then rises more slowly than the AUP approach. I consider that the AUP rule structure is potentially simpler and ensures that accessible parking spaces are provided at a consistent rate and at a rate that is consistent with the population mobility demands reported in the AUP s32 report.

49. I consider that there would be merit in adjusting the thresholds with the AUP approach so that one accessible space is required at a lower number of units and more in line with the KCDC approach. I consider that requiring one accessible space at a threshold of 7 or 8 units would be reasonable, that is a threshold that

reflects either more than 3 units per lot across two lots or more than 3 lots being developed for medium density housing.

50. A 2013 Disability Survey[3] referenced in the s32 report for PPC79 to the AUP found that 24 percent of the population had a disability with 40 percent of these being physical. This suggests that in 2013, 6 percent of the population had a physical disability, that is, about 1 in 16 people.

51. The 1:10 supply rate requirement proposed for the AUP is higher than would be required by the 2013 disability survey and anticipates an increased demand for accessible parking with an aging population. Since this creates a high demand for accessible parking spaces, I have also considered supply rates of 1:16 (~6%) and 1:12.5 (8%). **Figure 4** provides a comparison between the KCDC, AUP, a 6% and an 8% supply rate.

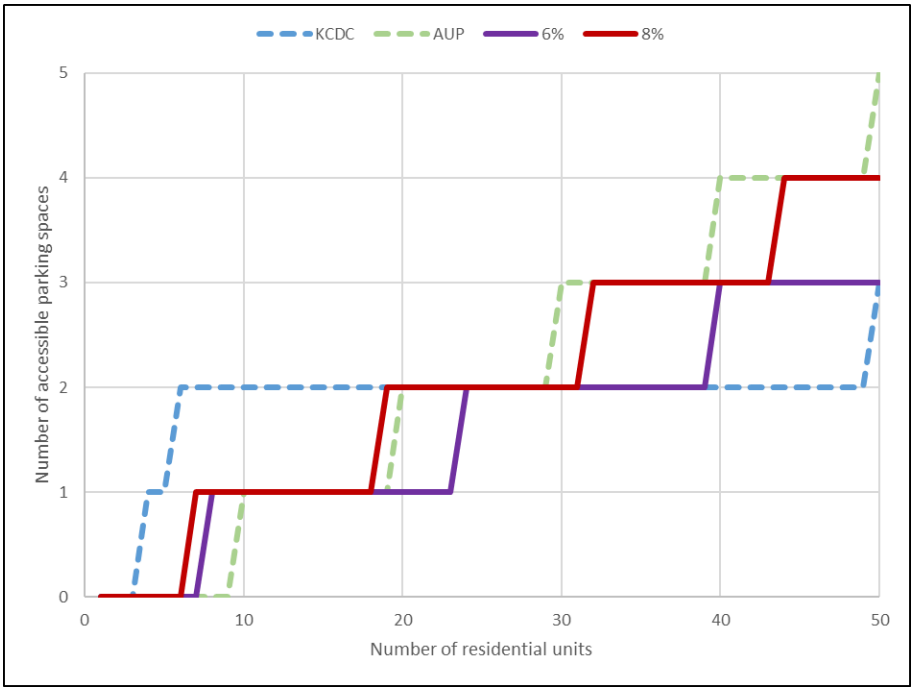

Figure 4: Accessible Parking Supply Rate Comparison

52. In my opinion, there is a risk that an over-supply of accessible parking spaces could lead to greater abuse of the spaces particularly where there may be limited parking available. While I accept that this will be an increasing demand for accessible parking spaces compared with the 2013 Disability Survey results, I consider that a lower supply rate than proposed for the AUP could be adopted which would provide more land for housing. Adopting a 1:12.5 rate would still

[3] An update to this survey is due in 2023.

provide nearly double the number of accessible parking spaces compared with the typical requirements prior to the removal of minimum parking requirements.

53. **Table 5** shows my recommendation for accessible parking space requirements and is based on a simple rounding rule with a supply rate of 1 space per 12.5 units. I would support a change to Table 7.5.1.1 to include a requirement for the minimum accessible parking supply rate of this form.

Table 5: Recommended Accessible Parking Requirements for PC14

Activity	Accessible parking spaces
Residential Activity	< 7 units: 0 spaces
	7-18 units: 1 space
	19 - 31 units: 2 spaces
	32 - 43 units: 3 spaces
	1 additional space for each 12.5 units thereafter

LOADING BAYS

54. PC14 introduces a requirement in Table 7.5.3.1 for a loading bay to be provided for a residential development comprising 20 or more residential units. This has been introduced as a practical recognition that with higher density development, there will be a greater need to cater for service vehicles and delivery vehicles. A threshold of 10 units was originally considered for requiring a loading area and would be in line with a similar requirement in the AUP. I understand that this was increased to 20 during the final drafting of the PC14 amendments.

55. The intent of this provision was to remove the need for service vehicles to stop within access lanes where they could obstruct movement of people, cycles or other vehicles.

56. Two submitters (S705 and 814) have opposed the inclusion of this requirement as being too prescriptive and have also raised a concern about requiring loading where parking is not required. I agree that the approach is prescriptive but this ensures that consideration is given to the provision of loading at the design stage. I acknowledge that there is no absolute threshold at which a loading space must be provided and the threshold proposed reflects engineering judgement at the drafting stage. I consider that the second concern is unwarranted because the loading requirements in Table 7.5.3.1 are only triggered under Rule 7.4.4.3 if standard parking is provided. On that basis, I recommend that the submission is rejected.

57. One submitter (S288) seeks compulsory provision of loading bays for residential development. While I appreciate the intent of the submission, particularly in highly developed areas, I consider that the proposed requirement provides an appropriate balance by requiring loading bays for large sites but not at sites with less than 20 units.

GARAGE DIMENSIONS

58. The district plan does not include any dimensional requirements for garage parking spaces. One submitter (S685) seeks the addition of dimensional requirements that would ensure that any garage could accommodate a B85 design vehicle.

59. The national standard NZS2890.1: 2004 for off-street parking does include recommended minimum dimensions for garage parking. It recommends a minimum internal width of 3 metres, length of 5.6 metres and minimum door width of 2.4 metres. The B85 design vehicle within the standard is 4.9 metres long and so the minimum length allows for the vehicle to be parked with 200-300 mm clearance from structures at the front and rear of the vehicle.

60. The draft update to the NZS2890.1 standard includes some minor updates to the garage parking requirements. It still recommends a minimum internal width of 3 metres but recommends a minimum length of 5.6 metres and minimum doorway width of 2.5 metres. This provides additional clearance at one end of the parked vehicle which would provide more space for a person to move from side of the garage to the other.

61. If minimum garage dimensions are incorporated into the district plan, I recommend that they adopt the latter dimensions as this better reflects the changes in the vehicle fleet that have occurred since the current standard was issued in 2004.

EMERGENCY VEHICLE ACCESS

62. The FENZ submission (S842) seeks changes to the pedestrian access policy in clause 7.2.1.9 and assessment matters in clause 7.4.4.27 to include specific reference to the emergency services. While I do not oppose the amendments, I am not aware of any specific design criterion for firefighting pedestrian access that would alter the pedestrian access requirements already proposed under PC14. In the absence of such criteria, it would not be possible for an applicant to provide an assessment of “whether the pedestrian access is suitable for use by emergency services” that is fundamentally different from the assessment against the general pedestrian access requirements. On that basis, I recommend that this part of the submission is rejected.

63. The FENZ submission also seeks changes to the private way and vehicle access requirements in Appendix 7.5.7.

64. I do not support the FENZ amendments to clause 7.5.7(c) and recommend that it is rejected. If a site has a combined vehicle-pedestrian access that complies with the Table 7.5.7, then this will accommodate emergency vehicle access requirements where the accessway is straight. In my opinion, the proposed amendment to require a pedestrian access to be formed to a vehicle standard will require excessive land and would not be consistent with enabling housing.

65. I also note that the District Plan does not set out carriageway or accessway widening requirements at curves because this represents a detailed design matter which is dependent upon the design width of the movement lane and radius of curve. I consider that these are matters that can be addressed at the detailed design stage through the Engineering Approvals process or building consent approval process. In my experience, emergency vehicle access requirements are typically considered at the concept design stage to ensure that a practical solution is possible in relation to clause 7.5.7(h) which requires a vehicle access to be "designed to be free of obstacles that could hinder access for emergency service vehicles". Vehicle tracking analysis software allows a design team to determine the extent of any widening required at any curve on an accessway to ensure that an emergency vehicle is able to get to within 20 metres of any required building entrance.

66. In my opinion, the inclusion of a rule requiring 6.2 metres of widening at a curve regardless of geometry could contribute to worse access arrangements for emergency vehicles. A 6.2 metre wide accessway provides ample space for light vehicles to pass another vehicle that is parked on the widened section of carriageway. Since council has no control over parking on private property, this could result in parked vehicles obstructing emergency vehicle access. I consider that the design of any required widening is site specific and that it is not appropriate to mandate a specific amount of widening without reference to the curve geometry.

67. I support the FENZ proposed amendments to clauses 7.5.7(h), 7.5.7(n) and the inclusion of Figure 7A because they provide greater clarity of what level of access is required.

68. I support FENZ's proposed increase in Table 7.5.7.1 to the minimum height clearance for emergency vehicle access in the Central City.

Dated: 11 August 2023

Chris Rossiter