Before the Independent Commissioners appointed by the Waimakariri District Council

In the matter of	the Resource Management Act 1991 (**the Act**)
and	
In the matter of	Proposed Waimakariri District Plan: Ohoka Rezonings (Hearing Stream 12D)
and	
In the matter of	Further submission by the Oxford Ohoka Community Board [submitter 62] to the Rolleston Industrial Developments Limited [submitter 160] and Carter Group Property Ltd [submitter 237] submissions to Rezone land at Ohoka

Brief of evidence of Andrew Metherell on behalf of Ohoka Community Board (as Further Submitter) - Transport

Dated: 13 June 2024

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Evidence of Andrew Metherell:

Introduction

1. My full name is Andrew Alan Metherell. I am a Chartered Professional Engineer, a Chartered Member of Engineering New Zealand, and am included on the International Professional Engineers Register. I hold a Bachelor of Engineering (Civil) with Honours degree from the University of Canterbury. I am also an Associate Member of the New Zealand Planning Institute.

2. I have more than twenty-five years' experience, practising as a traffic engineering and transportation planning specialist based in Christchurch. I am currently employed as the Christchurch Traffic Engineering Team Leader at Stantec New Zealand (Stantec), a global multi-disciplinary engineering consultancy. In this role I am responsible for providing transport engineering advice, assessment, and design for a wide range of activities.

3. I have had extensive experience providing transportation engineering advice and assessment for land development projects in the greater Christchurch area. Relevant to this project I am regularly involved in the planning, assessment, and design of the transport networks for residential, commercial, and industrial growth areas.

4. These projects include:

    4.1. expert transportation engineering evidence on behalf of Waimakariri District Council as a submitter on Plan Change 31 (Ohoka rezoning) to the Operative Waimakariri District Plan. As part of PC31 I prepared a brief of evidence and summary evidence for Waimakariri District Council (as submitter) assessing transportation matters. I also participated in expert witness conferencing on transport infrastructure and public transport topics;

    4.2. transport assessment and evidence for Applicants and submitters seeking residential, industrial, and large format retail rezoning of rural land as part of Selwyn District Plan Changes and as part of the Selwyn District Plan review;

    4.3. transport assessment for Plan Change 30 to the Waimakariri Operative District Plan to establish additional business zoning and a key activity centre at Ravenswood;

4.4. transport assessment for Plan Change 29 to the Waimakariri Operative District Plan to establish a revised residential zoning and retirement village on South Belt, Rangiora;

4.5. concept transport engineering design for the Northern Motorway southbound on-ramp / Tram Road interchange intersection and High Occupancy Vehicle lane;

4.6. transport evidence for a Plan Change to the Waimakariri District Plan to establish residential zoning on the western side of Kaiapoi;

4.7. transport assessment for various residential and commercial developments within Kaiapoi, Rolleston, Woodend, Ravenswood, and Pegasus;

4.8. Transport assessment and traffic modelling for Plan Changes and commercial and residential developments in the north of Christchurch including Northwest Belfast, Northeast Belfast, and Prestons;

5. I have extensive experience with development and application of traffic models at both large and small scales for the purpose of assessing traffic distribution and traffic effects of large scale landuse change associated with Plan Changes, through to assessing localised transport effects of development proposals and integration of development. This has included regional transport models such as development and application of the Christchurch Transport Model, localised transport network models using micro-simulation, and intersection models.

6. I am regularly involved in transport infrastructure design and assessment of transport infrastructure. I have carried out scheme design of the Little River (City End) Major Cycleway, road design particularly in new subdivisions throughout Christchurch and the Selwyn District, and arterial road upgrades and roundabout designs around Wigram to integrate development with the transport network. I have also led various roundabout and signalised intersection designs. I have conducted road safety audits of subdivision road networks, and applied safety risk assessments to transport networks as part of land development planning.

Code of conduct

7. In preparing my evidence I have reviewed and agree to comply with the Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. This evidence has been prepared in compliance with the Practice note. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses, which I will specify. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed.

Scope of evidence

8. Rolleston Industrial Developments Limited and Carter Group Property Limited (the submitters) have lodged submissions on the proposed Waimakariri District Plan seeking rezoning of rural land at Ohoka to urban zoning. The rezoning request is for the same land area as previously considered as part of Plan Change 31 (PC31) to the Operative District Plan.

9. The submitter proposes a large urban development of land at Ohoka enabling approximately 850 households, a 250 pupil primary school, and a local commercial area. This anticipated landuse activity is consistent with PC31.

10. I have been requested by Counsel for the Oxford Ohoka Community Board to provide a transportation review of the rezoning proposal at Ohoka. The primary scope of my evidence is to comment from a transportation perspective on the suitability of the site being rezoned for a large-scale urban development.

11. Compared with the PC31 Application, further assessment has been provided in the relevant transport briefs of evidence by the submitters experts and Council Officers. The general nature of the proposed rezoning request remains similar to that considered under PC31 from a transportation perspective.

12. In preparing the evidence I present now, I have reviewed and considered the following:
    - 12.1. The PC31 documents including the relevant transport related evidence, Joint Transport Witness Statements, and decision;
    - 12.2. The evidence of technical experts for the submitters as they relate to transport matters, or inputs to transport matters, in particular:

- Mr Nick Fuller – Traffic Effects and Transport Infrastructure
- Mr Simon Milner – Public Transport
- Mr Garth Falconer – Urban Design
- Mr Tim Walsh - Planning

12.3. The Council Officer s42A report by Mr Andrew Willis and supporting transport report by Mr Shane Binder.

13. The primary issues I have considered from a transportation perspective are:

13.1. The suitability of the scope of the Integrated Transport Assessment and evidence in addressing transport matters associated with the rezoning proposal;

13.2. Traffic distribution and potential transport network effects, including efficiency, safety, and suitability of infrastructure;

13.3. Availability of transport infrastructure and services to support transport modes that offer transport choice for future residents and workers, including by public transport, cycling, and walking;

13.4. Suitability of the location for a residential development of this scale, remote from other comparable and planned urban areas, and whether it can support good transport outcomes; and

13.5. Whether the proposed District Plan rule provisions and Ohoka ODP will enable good transport outcomes.

Summary of evidence

14. I have considered the transport assessment and related evidence provided by the submitter seeking rezoning at Ohoka, and Council officers.

15. Within my previous PC31 evidence I set out a range of concerns with the scope of transportation assessment undertaken by Mr Fuller as part of that process. I have read Mr Fuller's evidence and accompanying Integrated Transport Assessment (ITA) and note that there is additional information in the ITA. The additional information addresses some of my criticisms of the PC31 ITA and transport evidence. It also provides a

better understanding of the potential wider area transport implications of the proposed rezoning.

16. Ultimately though, the site development proposal is largely the same as that considered under PC31, and my overall concern with the ability to provide good transport outcomes with development of the scale proposed at this location is unchanged.

17. I have identified that the proposed rezoning site is likely to lead to higher average travel distances by private vehicle than in and adjacent to other urban residential areas in Waimakariri District.

18. The location of the site remote from the existing main urban centres[1] means that Ohoka is not well serviced by public transport, or cycling infrastructure. Pedestrian infrastructure is and will be very limited to the immediate site surrounds.

19. The location of the site in a predominantly rural area places a reliance on using rural roads for almost all trips. Traffic to and from the site will access and use of high speed rural roads. I consider that the existing level of road infrastructure is not sufficiently well developed in this area to safely or efficiently support the step change in traffic that will be generated.

20. At a network wide level, I consider there is a higher likelihood of adverse road safety outcomes with the proposed rezoning scenario compared with growth areas being located closer to the existing Waimakariri District urban areas.

21. I consider a suite of transport network improvements will be necessary to ensure the transport network can function safely and efficiently. There is significant uncertainty around funding and timing of those improvements. I consider it unrealistic at this stage to expect these will be funded by Council with contribution from development contributions in a way that aligns with development timing. Major intersection upgrades are also likely to require third party land which adds further complications to delivery of necessary improvements.

22. Whilst a bus service is planned to initially be funded by the developer, it will not support access by bus to Rangiora, a key travel destination for the site. The long-term funding and availability of a bus service is less certain, and may rely on reprioritisation of funding by ECan.

[1] Ohoka is approximately8km from Kaiapoi town centre, and 10km from Rangiora town centre

23. I understand that the rural cycle network currently planned by Council is unfunded, and in my opinion will not provide the level of service required to support cycling as a mode of travel to Kaiapoi and Rangiora. Instead, a higher grade of route than currently planned would most likely be necessary given the long distances involved.

24. In my opinion, the site is not well located for a large urban development and particularly so when compared with the transport characteristics of growth areas near the primary centres in the Waimakariri District.

25. Nevertheless, if the panel consider rezoning has merit then I consider a range of matters need to be addressed to support the integration with the transport network:

    25.1. Revisit the ODP layout for road connections, public transport provision, and walking/cycling connectivity;

    25.2. Provide greater certainty in the ODP / rules package around the necessary consideration and funding of infrastructure upgrades resulting from development. Those are required for safe and efficient functioning of the road network at acceptable levels of service. I consider that should be achieved by requiring upgrades to be in place ahead of development;

    25.3. Provide greater certainty of bus service funding, and investigation of connections to Rangiora to provide a level of service comparable to other urban centres;

    25.4. Change the classification of Whites Road to a Collector Road.

Existing Transport Environment

26. The Novo Group ITA appended as Attachment 1 to Mr Fuller's evidence describes the surrounding transport infrastructure and environment[2].

27. The site is separated from the large urban areas within the Waimakariri District, and as such relies on access routes via a combination of rural arterial roads and rural local and collector roads.

    27.1. Tram Road is a busy high speed rural arterial road connecting SH1 to Oxford. It has a history of injury crashes along its length, including at intersections and mid-block (between

[2] Mr Fuller Attachment 1, para 5-49

intersections). It is planned to have some upgrades to both the carriageway and some intersections in the future to provide improvements to safety.

27.2. Access to Tram Road from the site is reliant on Whites Road and to a lesser degree Bradleys Road, both of which are rural roads formed to a basic rural road standard aligned with the existing low traffic volumes.

27.3. The rural arterial Flaxton Road – Skewbridge Road – Ohoka Road corridor connects Kaiapoi and Rangiora. The ITA identifies replacement of the Skewbridge Road bridge is planned in the Long Term Plan, which has safety issues.

27.4. The site will rely on access to the Flaxton Road – Skewbridge Road route via Threlkelds Road and Mill Road, both of which are rural in formation and predominantly have a rural speed limit. The road standard is basic, aligned with the low traffic volumes.

27.5. Whilst there is some presence of crashes on the local road network connecting the site to the arterial roads, no specific upgrades of road carriageways are planned. I have previously noted as part of PC31 that the existing roadside environment of the local road network has a range of unprotected hazards including deep drains and bridges, minimal road delineation, and high speed intersections that increase the likelihood and potential injury consequence of crashes.

27.6. Localised areas of urban (60km/h) speed limit are provided in the vicinity of the existing Ohoka settlement, although road formations remain rural in nature.

28. The Ohoka settlement has some localised sections of road with footpaths. These do not provide connections beyond the immediate settlement. No cycle facilities are available to connect to the site.

29. The Council has prepared a Walking and Cycling Network Plan[3] to inform future development of a network of routes for cyclists and pedestrians between towns. As informed by the evidence of Mr Binder, the network plan has no funding commitment from Council.

[3] Mr Fuller Attachment 1, ITA Figure 20

30. There are no public transport services in the vicinity of the site, as set out in the ITA[4] and the evidence of Mr Milner[5]. There are also no ECan planned changes to the public transport network services that would improve accessibility at Ohoka, as previously set out in evidence to PC31 by Mr Len Fleete. Some school bus routes use roads in the area, although Mill Road east of Threlkelds Road is not used.

31. The analysis by Mr Fuller[6] indicates that intersections where the connecting roads join the arterial road network currently have some moderate delays, although not at a level that will cause travel time unreliability. The highest observed delays were at the right turn from Mill Road onto Ohoka Road, and crossing movements at the Tram Road / Whites Road intersection. The ITA sets out the models have been calibrated to observed conditions[7].

Proposed Development

32. The ITA and evidence of other experts for the submitters describe the layout and form of the internal transport network proposed by the ODP[8], and how that will integrate with the frontage roads. In my opinion, the existing and currently planned transport network is not of a form where the large scale of development planned can easily integrate without consideration of transport infrastructure and public transport improvements.

Site Access

33. The ITA[9] describes the proposed access to the frontage roads, which includes four intersections to Whites Road, two intersections to Bradleys Road, and one intersection with Mill Road. Mr Fuller has described that intersection formation will be subject to consideration through the subdivision process[10], and involve road safety audits[11]. He has provided indicative layouts[12] of new intersections onto Whites Road, Mill Road and Bradleys Road.

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[4] Mr Fuller Attachment 1, Para 42
[5] Mr Milner Figure 1
[6] Mr Fuller ITA within Transport Environment section
[7] In discussion with Mr Fuller, he informed me that the method of model calibration included comparing observed to modelled delays at the stop line, which excludes the additional delay reported for "geometric delay" (the delay associated with slowing down approaching the intersection, and speeding up after leaving the intersection). This is a typical method of model calibration in my experience although I have not had the full set of observed data to fully check the calibration.
[8] Mr Walsh Appendix 3
[9] Mr Fuller Attachment 1 para 52
[10] Mr Fuller para 52
[11] Mr Fuller para 84
[12] Mr Fuller Appendix 11

34. Whilst I appreciate these will be developed further in design, some examples of concerns I have in Mr Fuller's assessment of the positioning for ODP purposes include:

34.1. The design for the right turn bay on to the southern local road access on Whites Road[13] isn't reflective of the design requirements for an 80km/h speed environment. A taper of approximately 62m is shown whereas for an 80km/h speed a taper of 130m is required[14]. The much longer right turn bay required will have some additional impacts on existing access on the opposite side of Whites Road.

34.2. There is no equivalent design shown for the Whites Road Collector Road access adjacent to the Ohoka South Branch, which is in a constrained location next to an existing bridge. I expect that will limit the ability to provided widening for a right turn bay, or widening for left turns unless the bridge is widened. This could impact the location of the collector road intersection, which is a primary intersection and could have some unassessed effects on properties on the east side of Whites Road.

34.3. There is no demonstration of how the future cycleways / pedestrian paths will be provisioned for at the intersections. Based on the urban design concepts, I understand that they will generally be set back outside the road reserve which appears to be necessary.

35. In my earlier advice to PC31, I raised road safety concerns that the development will be serviced by a large number of intersections on high speed frontage roads that will retain a largely rural character. The rationale for having of all of the proposed intersections hasn't been discussed within the submitter evidence.

36. Mr Fuller anticipates a rural 80km/h speed limit on most of Whites Road and Bradleys Road[15]. Any crashes at the access road intersections will have a higher risk of serious injury outcomes where the rural speed limit applies, compared with an urban speed environment. The right turn bays indicated by concept access designs in the ITA are a secondary safe system treatment, and some elevated level of crash risk will remain

[13] Mr Fuller Attachment 1, Appendix 11
[14] NZTA Traffic Control Devices Manual Part 4 (Draft) Figure 15-3
[15] Mr Fuller Attachment 1, para 59

particularly for those turning from the development onto the frontage road. In the absence of a safe system audit at this rezoning stage, I expect that Council may as a standard Code of Engineering Practice requirement for subdivision require a safe system audit.

37. In this rural environment, there is a greater likelihood safe system recommendations could influence intersection design locations and form, the design speed environment, and I consider the ODP should anticipate that outcome.

Pedestrian Cycle Connectivity

38. The ODP includes an internal network of pedestrian / cycle links. Some of the connectivity shown across the streams within Mr Falconers illustrative masterplan[16] are not included in the ODP. Given the natural barrier the stream presents to connectivity, my preference would be the suitable level of connectivity to support walkable catchments are shown within the ODP, which from a transport perspective would also include some additional crossings. That walkable catchment would improve walking access to the likes of the local centre, school, and public transport.

Figure 1: Suggested additional Pedestrian Network Connections across Streams (locations indicative)

[16] Mr Falconer evidence, Appendix Design Report p17

39. Beyond the frontage roads, there is reliance on future unfunded connections by Council to support integration with the nearby rural settlements and other urban centres. As I describe later in my evidence, this does not provide any certainty that the site will be able to access a wider area pedestrian and cycle network in a timely manner.

Public Transport

40. The ODP does not show or describe the location of any public transport infrastructure.

41. Figure 25 of the ITA accompanying Mr Fuller's evidence sets out a planned bus route to be funded by the developer. The site termination point is not discussed, although it appears to terminate at the Collector Road intersection with Mill Road. The illustrative masterplan shown in the evidence of Mr Garth Falconer[17] shows a Park and Ride site at the commercial centre, and that appears to be the intended location. This should be clarified by the submitter.

42. In my opinion, a public bus service is most likely to maximise utilisation if access to bus stops are walkable from residential properties. At the frequency of service proposed, NZTA guidance is that bus stops should be within 400m of residential dwellings to support access and travel choice. The percentage of people who walk to and from public transport stops tends to drop off significantly beyond the 400m distance[18].

43. The ITA, evidence of Mr Milner, and urban design layout described in evidence of Garth Falconer have given minimal consideration to the accessibility of providing a bus route within the development, and whether that will influence utilisation of public transport. Instead, it appears there will be reliance on a Park n Ride site located at one end of the site. Whilst that will support some potential bus users, it does not support accessibility for the large proposed community.

44. To check the walkable catchment of a Park n Ride site at the local centre, I have estimated that less than 15% of the development area will be within the walkable catchment of the Park n Ride site. This is indicated in Figure 2 below, which applies a 300m crow fly radius as a proxy for a 400m walk distance via a reasonably well-connected walking network.

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[17] Mr Falconer Appendix 1 Design Report Page 11

[18] https://www.nzta.govt.nz/walking-cycling-and-public-transport/public-transport/public-transport-design-guidance/getting-to-and-from-public-transport/walking/

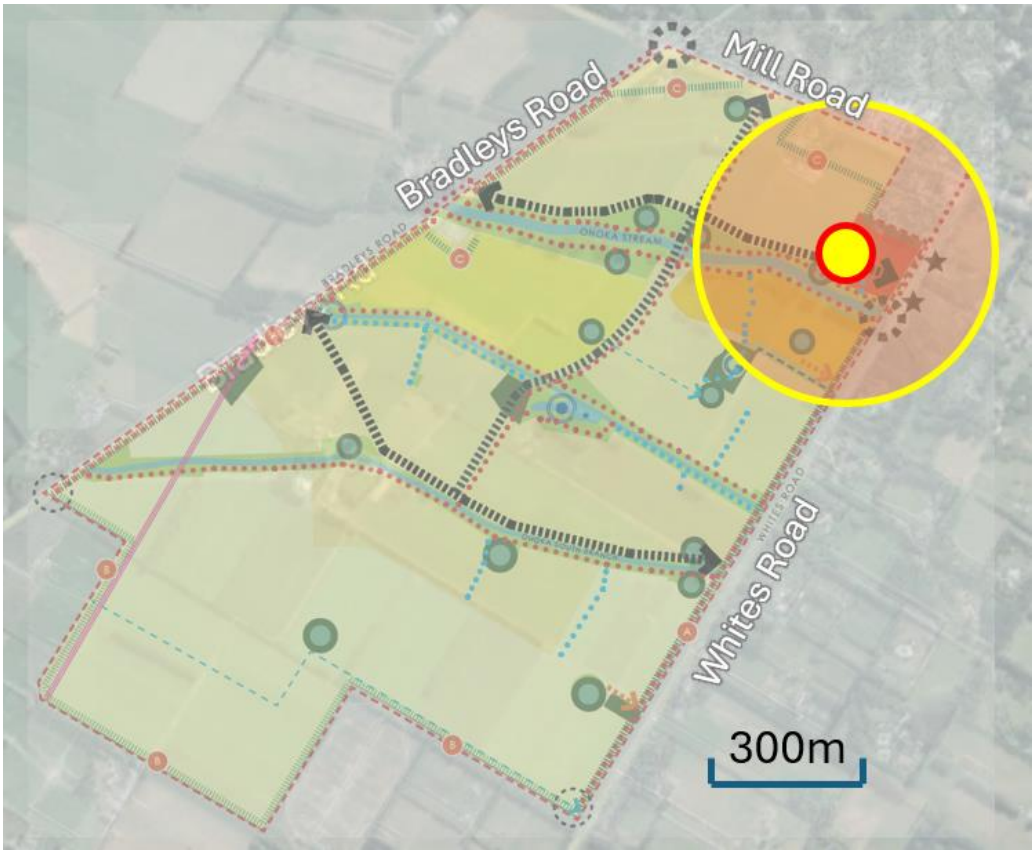

Figure 2: Walkable catchment to proposed public transport "Park n Ride" node (15% of development area is walkable)

45. I have considered the potential for the site to accommodate a bus route, such as if an extension was made between the local centre and Mandeville centre via Bradleys Road. The ODP diagram does specify a Collector Road network, and that road form would be expected to accommodate buses. Based on that layout, I expect that a maximum of 50% of the area would be accessible, as indicated in Figure 3.

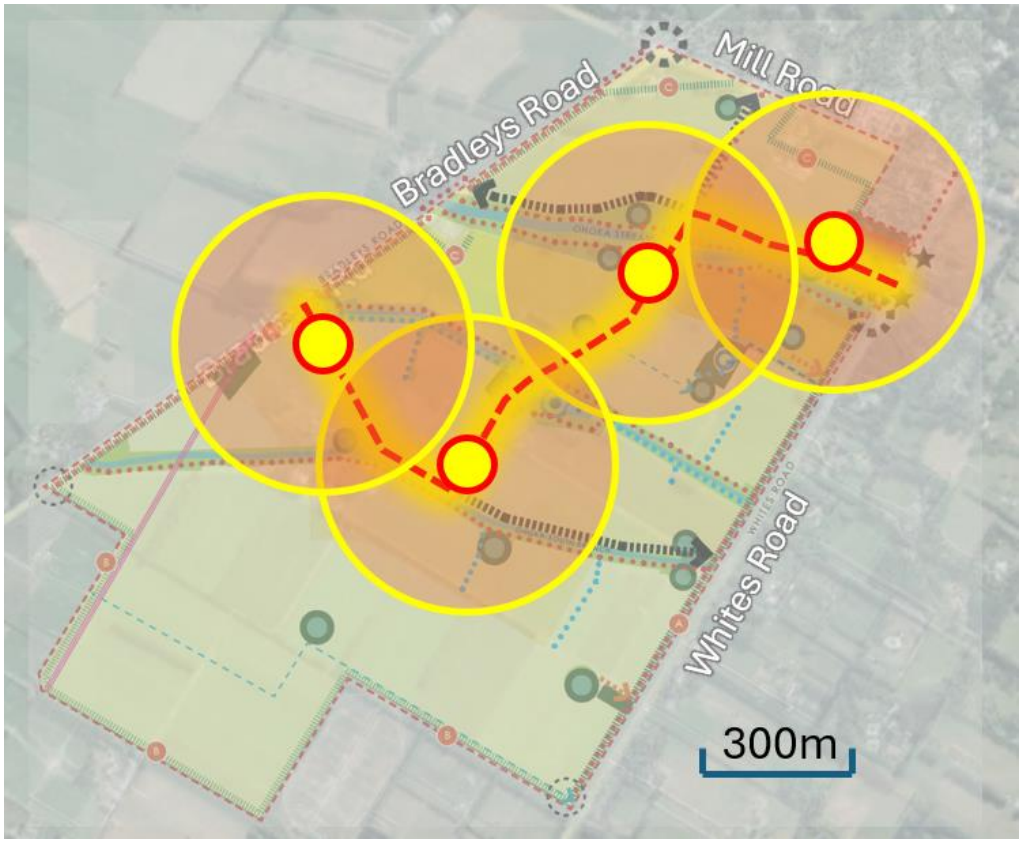

Figure 3: Walkable catchment for a bus route along the proposed collector road network (50% of development area is walkable)

46. The position of the southern Bradleys Road Collector Road connection appears to be limiting the walkable catchment in the south of the site. I consider the low proportion of the site within a walkable catchment of a potential bus route warrants a reconsideration of the ODP layout. An objective should be enabling a route through the site that achieves a high proportion of the dwellings having access to a possible bus stop within 400m. I consider the ODP should also retain flexibility for consideration of how a bus would terminate at the south end of the site, in case a bus service does extend that far. That includes provision of a turnaround area, with a suitable timing point and amenity for layover.

47. By better considering and locating bus infrastructure expectations at this stage, and providing for that on the ODP, it would support community acceptance of the presence of bus facilities within the residential development. It will also provide Council greater ability to assess suitability of the subdivision road network for provision or future proofing for a bus service.

Future Assessment Year and Traffic Growth

48. The ITA assesses intersection performance for a future year of 2033, being approximately 10 years in the future from when traffic counts were carried out. This is generally a suitable approach for considering most of the short – medium term potential transport network operational issues in the surrounding area. I understand that the growth in traffic on Tram Road and Flaxton Road – Skewbridge Road relates to a growth rate presented within my PC31 evidence and derived from the Christchurch Transport Model (CTM) forecasts.

49. Strategic transport planning of the greater Christchurch transport network often takes a longer-term view in assessing the potential long term future transport infrastructure requirements associated with growth, which may be planned but will not be realised in the shorter 10 year period. In that respect, the Christchurch Transport Model includes a 2028, 2038, and 2048 forecast year.

50. For large developments, particularly where an anticipated spatial plan is being varied significantly, it would be usual to consider a longer timeframe for understanding the strategic level effects of rezoning a large development remote from existing urban centres. That enables cumulative effects of growth associated with other planned or preferred growth areas to be more fully understood. This long term assessment has not been carried out by Mr Fuller.

51. My key point here is that longer term implications for the transport network of the proposed rezoning at Ohoka are currently not well understood based on the ITA provided. Mr Fuller instead relies on an assumption that if performance is forecast at 2033 to be poor at an intersection, it will need to be upgraded. In my opinion, a cautious approach to assessment of wide area effects and cumulative effect on future infrastructure requirements is warranted.

52. By way of example:

    52.1. Additional long-term growth planned around Rangiora will likely further increase traffic volumes on Flaxton Road – Skewbridge Road, affecting safety and efficiency of access from the Ohoka area.

    52.2. Additional long-term growth in Kaiapoi will likely influence the performance of the Tram Road and Ohoka Road motorway interchanges, which are strategically important connections

from the Waimakariri District. The need to accommodate the additional traffic from the west associated with the rezoning will impact performance at the interchange in a way that has most likely not been assessed by road controlling authorities.

52.3. Any additional enabled growth accessing the Tram Road corridor could have a cumulative effect in the long term on intersection performance and corridor safety, beyond that assessed by Mr Fuller.

53. As Mr Fuller has not applied any of the available long term traffic models in his assessment, this creates a high likelihood that the transport conditions he has assessed will not be reflective of conditions that could be expected beyond a 10-year period.

Suitability of Traffic Distribution Assessment

54. Mr Fuller[19] sets out the expected traffic distribution from the CTM, I understand informed by the evidence I produced for PC31 for a 2038 scenario. There are some differences in the percentage distributions between my PC31 evidence and Mr Fuller's Table 1. I understand the differences reflect an adjustment for removing local and internal traffic.

55. In my PC31 evidence, I noted that the period between the morning and evening peaks (the "inter" peak) may have a different traffic distribution, as there is greater weighting to non-work trips. I have investigated the outputs of the CTM for the inter peak period and provide an updated table of traffic distribution below.

Route / Direction	**CTM**		
	AM Peak	**Inter Peak**	**PM Peak**
Christchurch via Whites Rd / Tram Rd / SH1 (S)	41%	28%	36%
Kaiapoi via Mill Rd / Ohoka Rd (NE)	16%	19%	15%
Rangiora via Threlkelds Rd / Flaxton Rd (N)	23%	28%	28%
Local via Mill Rd (W)	3%	4%	3%
Mandeville / Oxford via Bradleys Rd (SW)	10%	11%	10%
Internal to Ohoka area	7%	11%	8%

Table 1: Modelled Traffic Distribution

[19] Mr Fuller Attachment 1, Table 15

56. Compared with the commuter peaks, this indicates that during the inter peak period, there is a lesser proportion of trips on Tram Road, and a slight increase in local trips, as well as a slight increase in proportion of trips to the Kaiapoi, and Rangiora town centres.

57. The interpeak pattern shows the importance of transport connections to both Rangiora and Kaiapoi, and locally. These are trips where a high level of travel mode choice is desirable, but not available at Ohoka.

Summary of Traffic Volume Changes

I consider Mr Fuller has not clearly summarised the extent of change in traffic volumes that will be experienced on the surrounding roads. Table 2 shows that the proposed rezoning will contribute up to 77% of all traffic on the surrounding local and collector rural roads that connect to the arterial road network, which is a significant proportion. Even on the existing arterial road network, contributions are high at up to 27% of all traffic.

Route / Direction	**Existing Traffic Volume**	**Indicative CTM Distribution of All Trips based on AM and PM**	**Traffic Distribution (based on trip generation 7,400vpd)**	**Total Traffic Volume (existing no growth + site)**	**RIDL site as % of Total Traffic Volume**
Tram Road (E)	7,800vpd	38%	2,850vpd	10,650vpd	27%
Whites Rd (S)	840vpd			3,690vpd	77%
Mill Rd (east of Threlkelds Rd) (NE)	750vpd (est)	15%	1,150vpd	1,900vpd	60%
Ohoka Rd (south of Mill Rd)	9,400vpd (est)			10,550vpd	11%
Threlkelds Rd (N)	1,710vpd	25%	1,850vpd	3,560vpd	52%
Flaxton Road	7,000vpd			8 850vpd	21%
Mill Rd west of Bradleys Rd (W)	1,000vpd (est)	3%	250vpd	1,250vpd	20%
Bradleys Rd (SW)	1,400vpd	10%	750vpd	2,150vpd	35%

Table 2: Forecast Traffic Volume Change with Plan Change

58. In my opinion, the step change in traffic volumes will alter the practical function of Whites Road, Threlkelds Road, and part of Mill Road. Whites Road will take on a strong Collector Road function, or even lower-level rural Arterial function. Similarly, Threlkelds Road which is already a Collector Road is likely to have a lower-level rural arterial function as a key connection between the expanded Ohoka area and Rangiora. Traffic volumes on these roads will be higher than other rural collector roads in the surrounding District. Mr Fuller has not addressed potential changes in road hierarchy which can have flow on impacts on how roads are accessed, and the level of infrastructure provided.

59. If the site was to be rezoned, as a minimum I consider the road classification of Whites Road will need to be changed from Local Road to Collector Road.

Influence of Generated Traffic on Transport Network Performance

60. Mr Fuller has carried out intersection traffic modelling[20] at a range of intersections connecting the site to the arterial road network. I note that his traffic distributions have assumed no traffic from the site will use Mill Road east of Threlkelds Road. The existing traffic counts at Mill Road / Threlkelds Road indicate that traffic will use that section of Mill Road between Threlkelds Road and Ohoka Road. Traffic modelling also indicates it may be a preferred route to Kaiapoi based on time and distance considerations.

61. Within **Attachment A** I have set out a summary of potential effects from a road capacity and safety perspective at various parts of the network, particularly connecting to the arterial road network. I have concerns that there is a heavy reliance on future unplanned upgrades to the road network to accommodate the step change in traffic generated by the development. The submitter proposes development contributions will be able to address the funding requirements. In my opinion, the likelihood of projects being able to be funded in this way is uncertain at this time.

62. In this case, and given the level of uncertainty involved in enabling development with supporting transport infrastructure, I consider a conservative approach is appropriate, where development is not permitted until the range of adversely impacted intersections and roads have been upgraded. That provides Council more certainty that a

[20] Mr Fuller Attachment 1 ITA Para 90-108

suitable funding arrangement can be achieved to implement necessary upgrades in a timely manner integrated with the timing of growth for this development and other planned development. It also provides greater certainty that the projects are able to be constructed within land and budget constraints. It also goes some way to addressing the issue of potentially stalled development discussed in the PC31 decision[21] if a more defined staging rule was included.

63. My reading of the ODP text included in Mr Walsh's Appendix 3 indicates there is ambiguity around requirement for and timing of road upgrades. By comparison, similar development area ODPs in the recently adopted Selwyn Partially Operative District Plan set out that no subdivision shall occur until scheduled upgrades are in place. In many of those Selwyn cases, the required upgrades are already planned in the next five years within the Long Term Plan.

64. If the rezoning submission were approved, I consider the ODP for the District Plan rules should more clearly set out that subdivision shall not be enabled until the following road upgrades have been completed:

    64.1. Roundabout at Tram Road / Bradleys Road

    64.2. Roundabout at Tram Road / Whites Road

    64.3. Roundabout at Flaxton Road / Threlkelds Road

65. The ODP includes the need for "consideration" of minor developer funded road improvements on connecting roads. I consider a more definitive requirement would be that the safety requirements for the surrounding local road network are considered through an integrated transport assessment of safety upgrades addressing timing and funding of planned upgrades, suitability of the road formation and alignment to accommodate additional traffic with reference to road function, carriageway width, road delineation, roadside hazards, and intersection safety. The roads subject to the assessment must include:

    65.1. Whites Road

    65.2. Bradleys Road

    65.3. Mill Road

    65.4. Threlkelds Road

[21] PC31 IHP decision, para 200, para 230, para 232

66. There is also large change in traffic volume proposed on Tram Road east of Bradleys Road, and Ohoka Road – Skewbridge Road – Flaxton Road. I consider a similar rule is necessary requiring an updated infrastructure and funding plan to be agreed with Council. The potential implications for those corridors relate to whether the proposed development location is suitable from a transport perspective, and I consider development should be restricted until the implications for road safety and capacity have been suitably assessed along the full corridor.

67. I also consider some aspects of the ODP wording should be deleted including the wording relating to works being "required regardless of whether the Development Area is developed" and that "all works relating to Council road assets will be funded, in part, by development contributions". As the works are generally not in the Long Term Plan, I understand that Council would not be able to take development contributions for the purpose of those projects.

Public Transport Connections

68. I have considered the public transport evidence of Mr Milner. There is a change in the proposed approach to public transport compared with PC31, with a proposal and ODP provision for a bus route between the site and Kaiapoi as the development establishes. Mr Milner[22] suggests this will be funded by the developer if funding is not available from public authorities, although that is not included in the ODP. During the period of funding outlined by Mr Milner, this will provide some accessibility for those needing or wanting to use a bus as an alternative to private vehicle use.

69. Concerns I still have with the proposed level of service for public transport, are as follows:

    69.1. The road safety suitability of the route shown by M Milner[23] has not been assessed by Mr Fuller, noting it uses low volume local roads outside the scope of the ITA.

    69.2. The route that may be required to extend a service within the site[24] has not been considered, as the proposal appears to be limited to a predominantly Park n Ride service. As I described earlier, I consider a public bus service in an urban area should

[22] Mr Milner para 30
[23] Mr Milner Appendix 3
[24] Mr Milner para 31

be planned that provides for a walkable catchment for most dwellings. It is unclear if the service frequency can still be supported if the bus route extends through the site to maximise the walkable catchment. I note from the schedule proposed by Mr Milner (his Appendix 1) there is very little margin for delays with two minutes available to turnaround at each of Ohoka and Kaiapoi.

69.3. My traffic model assessment indicates more than 25% of generated traffic will be to and from Rangiora. The proposed route to Kaiapoi involves a significantly extended route to Rangiora that is unlikely to support mode change for those movements. By comparison the main urban centres of Rangiora, Kaiapoi and Ravenswood/Woodend/Pegasus, are able to connect to each town without a significant diverted route[25].

69.4. The proposed basis for using a "mid-sized" bus is not set out, and may cap the available mode change achievable when compared with other urban centres. It is also unclear whether the availability of a public bus service could impact the Ministry of Education provision of a school bus service to Kaiapoi. If that did occur, then capacity of the proposed bus service would be reduced as students may be required to use the public service.

69.5. Beyond the 10-year period of developer funded service, ECan funding will need to be reprioritised to serve the Ohoka development potentially at the expense of or at higher cost than improving services to the more efficient routes serving the other urban areas. Typical public transport policy is to respond to demand associated with development. However, ultimately, ECan would need to advise on the likelihood and cost-effectiveness of such a service being continued.

Cycling Connections

70. I consider the cycle routes to Kaiapoi and Rangiora would be an integral requirement for the development to support travel mode choice, given the challenges with safe cycling on the existing rural road network in the area. In addition, an off-road connection to Mandeville via Bradleys Road will be necessary.

[25] Mr Milner Figure 1

71. I acknowledge that Council has proposed a walking and cycling network plan 2022[26] with a possible off-road network in the area which includes "Grade 2" unsealed paths connecting Ohoka to Rangiora and Kaiapoi. The quality of path associated proposed (Grade 2) and distance to urban areas will restrict the attractiveness of cycling as a mode of transport.

72. In my opinion this will warrant reconsideration of whether the existing strategy is sufficient to accommodate the demand and desire to provide for cycling as a mode of travel. A Grade 1 facility would in my opinion be preferred as they provide a "critical link" between main towns. They are facilities that have an asphalt surface and provide the highest level of comfort, and is suitable for novice users and longer distances. Routes on rural roads require safe separation from high-speed traffic with safe road crossings. Further investigation would be required to determine if this standard of facility is achievable.

73. Mr Binder[27] has advised that necessary infrastructure is not planned to be delivered by Council in the foreseeable future, even though the walking and cycle network plan exists.

74. On that basis, and given the uncertainty involved, I consider a rule with specific requirements to ensure a cycle connection between Ohoka and Kaiapoi and Rangiora is in place would be appropriate. That will enable further consideration of the development timing with respect to cycling infrastructure and funding timing.

75. A means to achieve assessment would be through an integrated transport assessment matter addressing timing and funding of the connections, and suitability of the cycleway formation and route to promote safe and efficient connections that support use of cycling as a mode for trips between the site and Kaiapoi, Rangiora and Mandeville.

Comparison of Vehicle Travel Characteristics with Established Urban Areas

76. I note that the s42A report includes an assessment[28] of vehicle travel based on outputs from the Christchurch Transportation Model. As part of PC31 I provided some similar analysis which I repeat here, based on insights from the CTM on the length of travel and urban area self-sufficiency for residential zones in different urban areas.

[26]https://www.waimakariri.govt.nz/__data/assets/pdf_file/0016/136330/Walking-and-Cycling-Network-Plan-Recommended-Network-Plan.pdf
[27] S42A report: Mr Binder memo to Andrew Willis, Para 10
[28] S42A report Appendix G Section 4.3

77. I have analysed average trip length for zones in the Waimakariri District, and also the modelled population to employment ratio for each town. The table below shows a summary of these statistics based on the 2038 landuse and travel demands that were in the CTM:

Urban Centre	**Ratio Employment (people) to Population (people)**	**Average Trip Length Residential Zones[29]**
Ohoka	0.03	17.1km
Kaiapoi	0.27	12.5km
Rangiora	0.37	10.1km
Pegasus/Ravenswood/Woodend	0.09	15.5km

78. It is apparent that the combination of low employment and general location of the Ohoka development contributes to longer average trip lengths which influence vehicle kilometres travelled in the wider transport network.

79. The Pegasus/Ravenswood/Woodend area also has lower modelled employment ratios, although there are large areas of recently zoned commercial land at the key activity centre that will contribute to increasing self-sufficiency over time.

80. The lower travel distance outcomes for the established urban centres are generally consistent with the centres based approach that greater Christchurch authorities have sought to achieve to minimise travel distance and provide travel mode choice for residents.

Conclusions

81. I consider the site subject to the proposed rezoning request at Ohoka is not well located for a large urban development when compared with the transport characteristics and outcomes expected for growth near the primary centres in the Waimakariri District.

[29] This is an indicative statistic based on averages of zones without substantial employment, modelled for future year AM period outbound, and PM period inbound.

82. Nevertheless, if the panel consider rezoning has merit, my evidence has also made a range of transportation related recommendations to alter the rezoning proposal that I consider are necessary. These include:

82.1. review of the ODP transport connections within and connecting to the site,

82.2. more clearly addressing the need for (and timing of) an integrated approach and funding plan to the substantial infrastructure requirements to support road safety and efficiency, cycling, walking, and public transport service provision,

82.3. Review the road classification of Whites Road to make it a Collector Road.

Date: 13 June 2024

Andrew Metherell

Attachment A: Summary of Road Infrastructure Improvements Required

Route / Direction	Intersection efficiency	Intersection safety	Upgrade Requirements and provision	Potential District Plan response
Tram Road / Bradleys Road	Not modelled in existing form, acceptable with future roundabout form.	Already identified as required a safety upgrade, provides an alternative safe intersection to access Tram Road	Road safety upgrade already proposed by Council, which will be a suitable treatment.	Restrict development until a roundabout upgrade completed. Assessment could then consider if a lesser level of upgrade can support staged development
Tram / Road / Whites Road	Restricted capacity, generating high delays	Intersection with high speed arterial, step change in traffic volumes with development	Road safety upgrade will be necessary, and also likely a capacity upgrade – roundabout would address both these requirements.	Restrict development until a roundabout upgrade completed. Assessment could then consider if a lesser level of upgrade can support staged development
Mill Road / Bradleys Road	Acceptable performance with a basic layout	Not assessed	Change in traffic volumes warrants review of intersection treatments such as edge treatments, roadside hazards, need for localised widening	Reference suitability of layout as a matter for assessment in subdivision
Mill Rd / Whites Road	Acceptable performance with a basic layout	Not assessed	Change in traffic volumes warrants review of intersection treatments such as edge treatments, roadside hazards, need for localised widening	Reference suitability of layout as a matter for assessment in subdivision

Route / Direction	Intersection efficiency	Intersection safety	Upgrade Requirements and provision	Potential District Plan response
Flaxton Road / Threlkelds Road	Restricted capacity, generating high delays	Intersection with high speed arterial, step change in traffic volumes with development	Road safety upgrade will be necessary, and also likely a capacity upgrade – roundabout would address both these requirements.	Restrict development until a roundabout upgrade is completed. Assessment could then consider if a lesser level of upgrade can support staged development
Mill Road / Threlkelds Road	Acceptable performance with a basic layout	Roadside hazards and need for localised widening should be assessed	Potential need for localised widening, lighting, road delineation, roadside hazard management	Reference the need to address intersection modifications as a matter for assessment in subdivision
Mill Road / Ohoka Road	Not assessed, based on PC31 expert conferencing outcomes expect capacity concerns	Restricted sight lines on the inside of a high speed road next to a bridge, generating safety concerns if a step change in traffic occurs	Likely requires some restriction of traffic movements alongside improved safe access at other intersections on the Flaxton-Skewbridge-Ohoka corridor.	Prior to development consider a more in-depth investigation of mitigation required to manage the increased safety risk at the intersection.
Tram Road SH1 Interchange	Over-capacity in short term, no long-term cumulative effect assessment	Likely related to increased queuing extent in a rural environment	Unclear whether upgrades are feasible of if Waka Kotahi would support changes to the strategic interchange	Consider a more in-depth investigation of mitigation alongside Waka Kotahi prior to any approval to develop the land

Route / Direction	Intersection efficiency	Intersection safety	Upgrade Requirements and provision	Potential District Plan response
Tram Road Intersections between Whites Road and SH1	Not assessed, based on other intersections being over capacity, high likelihood that the step change in traffic will exacerbate capacity concerns	Step change in through traffic likely to increase safety risk on high speed arterial road	Potential need to carry out a more major change at some intersections and along the corridor to support safe and efficient access as a result of the step change in traffic volumes on Tram Road	Restrict development until there is an understanding of the impact of development on Tram Road as a result of the step change in traffic volumes, and improvement plan is clearly provided
Connecting Road Links (Whites Road, Bradleys Road, Threlkelds Road, Mill Road)	Collector road volumes can be accommodated with minimal impact on road performance	Not assessed by Mr Fuller, expect an adverse change in safety risk / outcomes if the existing road form is not modified to a level suitable for the step change in traffic	Likely increased need to provide route delineation improvements, treat roadside hazards, consider speed management measures	Reference suitability of layout of these connecting rural roads as a matter for assessment in subdivision