BEFORE THE HEARING PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Proposed Plan Change 17 to the Waipā District Plan – Hautapu Industrial Zones

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SUPPLEMENTARY STATEMENT OF EVIDENCE OF MICHAEL TURNER HALL

(TRANSPORT)

Dated 26 May 2023

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INTRODUCTION

1. My name is Michael Turner Hall. I am a Professional Engineer and am currently employed at CKL NZ Limited (**CKL**) where I am the Transportation Engineering Manager.

2. In early 2022 I was engaged by Kama Trust to assess the transportation matters related to the potential further subdivision and industrial development within the land area described as Area 6. That assessment formed part of the evidential basis for what became Plan Change 17 (**PC17**).

CODE OF CONDUCT

3. I am familiar with the Code of Conduct for Expert Witnesses (Environment Court Consolidated Practice Note 2023) and although I note this is a Council hearing, I agree to comply with this code. The evidence I will present is within my area of expertise, except where I state that I am relying on information provided by another party. I have not knowingly omitted facts or information that might alter or detract from opinions I express.

SCOPE OF EVIDENCE

4. I previously provided a statement of evidence dated 13 March 2023 on behalf of Kama Trust addressing the transportation matters relevant to PC17 (**primary evidence**). My primary evidence was prepared at a time when the Hautapu Landowners Group (**HLG**) submission seeking a deferred industrial zone on their land was deemed out of scope.

5. Since that time, I have been advised that the HLG submission is now within scope, and therefore the evidence that HLG presented to support the deferred industrial zone will now be heard by the Panel. Accordingly, this evidence responds briefly to the evidence of Mr Inder dated 13 March 2023

filed on behalf of HLG, and then updates the Panel on my key transportation findings following expert witness conferencing.

EXECUTIVE SUMMARY

6. Mr Inder's concern that the internal road on the Kama Trust land was needed to access the HLG land in order to avoid connections off Peake Road is no longer valid. There are no engineering reasons why the cul-de-sac cannot be extended to the HLG land and the exact design can be confirmed at a later stage.

7. Mr Inder's concerns regarding corridor capacity constraints have been addressed in expert conferencing and the updated traffic assessment prepared by Stantec was agreed to be a sufficient and suitable sensitivity test.

8. I have undertaken detailed modelling of the Allwill Drive intersection. Modelling of the base case shows negligible congestion and queuing at the intersection. With the additional volumes associated with the development of Area 6 there is no material increase in congestion that would warrant signalisation. Levels of service remain either A or B, which is high.

9. Adding the development of the HLG deferred industrial zone shows that the intersection has reached the point of flow breakdown in the evening peak for the right turn movement out of Allwill Drive. The morning is also showing signs of reaching capacity with LOS E for the same right turn movement.

10. Based on these findings, it is my opinion that the trigger for requiring the signalisation of the Allwill Drive / Hautapu Road intersection should not be related to the Area 6 sites but instead should relate to the deferred

industrial zoning within the HLG land (assuming that this zoning is accepted as part of the Plan Change). The trigger relating to the signalisation being required once Allwill Drive connects to Road 1 is also still valid as this would notably increase volumes on Allwill Drive.

11. Overall, it is my opinion that pedestrian and cycling demand from within Area 6 is unlikely to warrant signalisation of the Allwill Drive / Hautapu Road intersection.

12. Policy 7.3.4.9 within Section 2.2 of the proposed Plan Change seeks to establish industrial activities to allow for existing activities within the Carter's Flat Commercial zone to relocate to Area 6. Requiring the signals at Allwill Drive to be completed prior to development occurring within Area 6 does not align with this policy as it may delay the enablement of industrial land use in Area 6 and frustrate relocation of activities within Carter's Flat.

RESPONSE TO MR INDER

13. I note that matters have moved on since Mr Inder lodged his evidence dated 13 March 2023. Nevertheless, there are a number of points I seek to address and clarify.

14. First, the concerns regarding the proposed cul-de-sac within the Kama Trust land no longer have any basis. Mr Inder noted that the internal road on the Kama Trust land was needed to access the HLG land in order to avoid connections off Peake Road. Kama Trust has confirmed that the internal road on its site can be extended to the HLG land if a deferred industrial zoning is approved, and the land is ultimately uplifted to industrial zone at some stage in the future. There are no engineering reasons why the cul-de-sac cannot be extended to the HLG land and the exact design can be confirmed at a later stage. Accordingly, Mr Inder's access concerns fall away.

15. Secondly, Mr Inder raises concerns regarding the corridor capacity constraints within Hautapu. Within the traffic assessment of PC17 prepared by Stantec, Appendix D of the Section 42A report, additional assessment was undertaken which included some vehicles using Peake Road to the west of Area 6. Through the traffic conferencing session, it was agreed by all experts that this assessment was a sufficient and suitable sensitivity test for evaluating the potential effects on the transportation network. Given that Mr Inder agreed with the suitability of this assessment, these concerns also fall away.

CONFERENCING

16. As part of expert conferencing, most of the provisions have been agreed with only one matter outstanding. This relates to the future signalisation of the Allwill Drive / Hautapu Road intersection and whether this would be triggered by future development within Area 6. This statement of evidence outlines my opinion that development within Area 6, as currently proposed, does not need to be dependent on these signals being completed and would only be required once Allwill Drive is connected to Road 1 as identified within the Structure Plan or as part of any development within the deferred industrial zone as proposed by HLG.

KEY ISSUES – ALLWILL DRIVE CAPACITY ANALYSIS

17. I have prepared a SIDRA model of the existing Allwill Drive / Hautapu Road intersection in order to identify whether additional development within Area 6 will result in significant changes to the existing performance of the intersection. Figure 1 shows the modelled layout of the intersection.

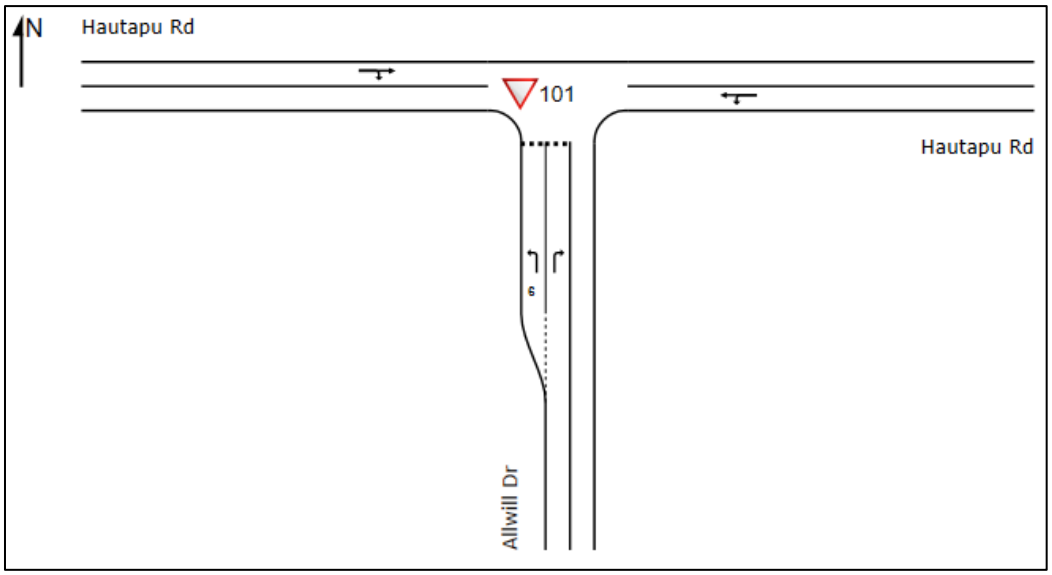

Figure 1: Modelled Intersection Layout

18. From the Integrated Transportation Assessment (**ITA**) that CKL prepared as part of the original assessment of the Kama Trust site, Hautapu Road was reported as carrying 2,500 vehicles per day (**vpd**) which equated to 250 vehicles per hour (**vph**) in the peak on the estimation that peak hour volumes represented 10% of daily volumes. More recent traffic volume data from the Mobile Road database, the same database used to inform traffic volumes within the ITA, states that Hautapu Road now carries 4,502vpd which equates to 450vph in the peak hour. These latest volumes are higher than those included within the CKL ITA.

19. The Mobile Road dataset also reports that 19% of vehicles on Hautapu Road are heavy vehicles. I have adopted this percentage for all turning movements in my assessment of the Allwill Drive / Hautapu Road intersection.

20. The Mobile Road database states that Allwill Drive carries 319vpd which equates to 32vph in the peak. I have also undertaken a first principles review of Allwill Drive to identify the maximum number of trips that could be generated prior to Allwill Drive connecting to Road 1.

21. As was noted in the CKL ITA, Harrison Grierson had previously prepared an assessment for the Hautapu Structure Plan area where a trip generation rate of 20 trips/hr/ha (land area) was adopted. This rate was adopted when assessing the effects of the Kama Trust site and was considered appropriate by the experts during the conferencing. I have adopted this rate to determine the maximum number of trips that could be served by Allwill Drive.

22. Allwill Drive provides a road frontage to nine sites being 43-55 Allwill Drive and 57 Hautapu Road with a total combined land area of 4.64ha. Based on the rate of 20 trips/hr/ha, this equates to 93 trips in the peak hour. This value is approximately three times greater than the reported values from the Mobile Road database and is therefore considered to be appropriately robust.

23. Section 7.1.2 of my ITA included inbound and outbound distribution of trips for an industrial activity where 87% of trips were inbound in the morning and 82% outbound in the evening. I have adopted the same rates for this assessment where inbound trips would be southbound on Allwill Drive and outbound tips would be northbound. All trips using Allwill Drive have been conservatively assessed as heading to/from the east.

24. From the Harrison Grierson assessment, traffic volumes on Hautapu Road were split 32%/68% eastbound/westbound for the morning peak and 67%/33% for the evening peak. The same ratios have been used when determining the eastbound/westbound split of existing traffic on Hautapu Road.

25. Based on the above considerations, **Figure 2** and **Figure 3** show the overall turning volumes for the base case scenario, that is no development within Area 6 and the theoretical maximum number of trips on Allwill Drive.

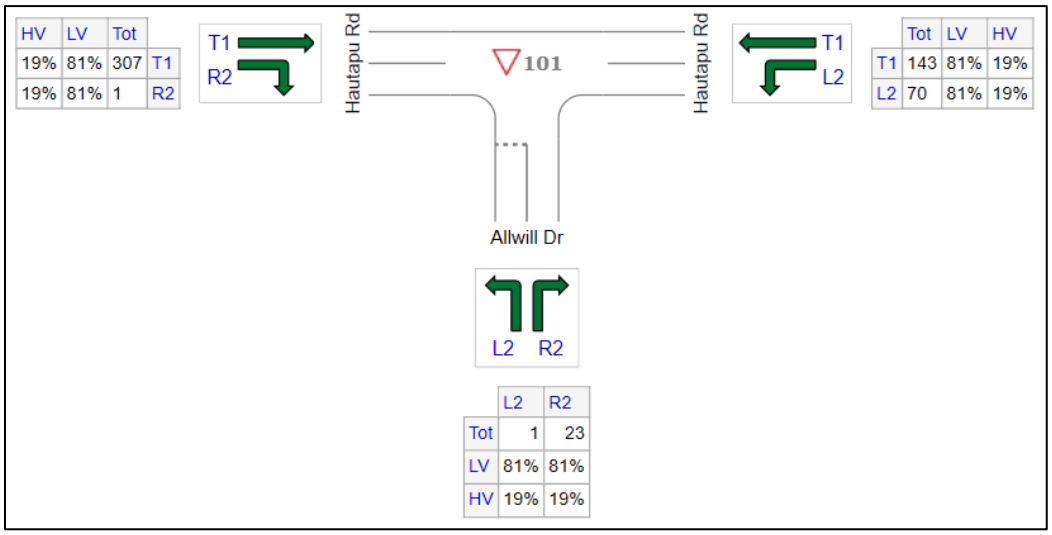

Figure 2: AM Peak Turning Volumes - Base Case

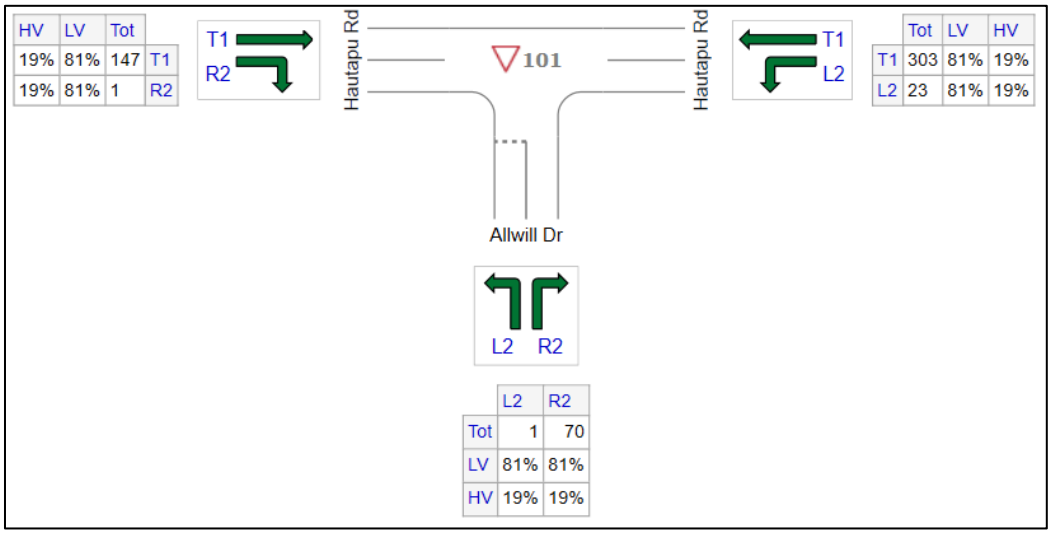

Figure 3: PM Peak Turning Volumes - Base Case

26. The summary of modelling results from the base case scenario are presented in Table 1.

Approach	Movement	AM Peak			PM Peak		
		Ave. Delay (s)	LOS	95% Q(m)	Ave. Delay (s)	LOS	95% Q(m)
Allwill Dr (south)	Left	5.3	A	0.0	6.1	A	0.0
	Right	8.0	A	1.0	8.0	A	2.9
Hautapu Rd (east)	Left	4.8	A	0.0	4.8	A	0.0
	Through	0.0	A	0.0	0.1	A	0.0
Hautapu Rd (west)	Through	0.0	A	0.1	0.0	A	0.1
	Right	5.0	A	0.1	6.1	A	0.1
All Vehicles		**1.0**	**NA**	**-**	**1.3**	**NA**	**-**

Table 1: Allwill Drive Intersection SIDRA Results – Base Case

27. The above results show negligible congestion and queuing at the intersection with LOS[1] A throughout. For priority intersections, an LOS rating is not provided as the worst movement is usually the governing case for determining whether an intersection is performing at appropriate levels.

28. I have added the traffic volumes associated with the expected full development of the Kama Trust site onto the base case above to identify the effects of additional development on the existing intersection layout. As outlined in the ITA, the Kama Trust site is expected to generate some 398 trips in the peak hour with all trips heading east from Area 6 along Hautapu Road. The results from this modelling are presented in Table 2.

[1] LOS = Level of Service and is a qualitative measure to indicate performance where LOS A represent free-flowing conditions and LOS F represents flow breakdown.

Approach	Movement	AM Peak			PM Peak		
		Ave. Delay (s)	LOS	95% Q(m)	Ave. Delay (s)	LOS	95% Q(m)
Allwill Dr (south)	Left	7.5	A	0.0	6.6	A	0.0
	Right	14.5	B	1.8	14.9	B	5.6
Hautapu Rd (east)	Left	4.9	A	0.0	4.8	A	0.0
	Through	0.1	A	0.0	0.1	A	0.0
Hautapu Rd (west)	Through	0.0	A	0.1	0.0	A	0.1
	Right	7.7	A	0.1	5.6	A	0.1
All Vehicles		**0.8**	**NA**	-	**1.3**	**NA**	-

Table 2: Allwill Drive Intersection SIDRA Results – With Kama Trust Traffic

29. The above results continue to show that there is unlikely to be any significant congestion to this intersection as a result of the Kama Trust site being fully developed.

30. As a further test, I have also considered the full development of the HLG land north of the Kama Trust site. The overall land area of both the Kama Trust and HLG land is approximately 40ha. When adopting the rate of 20 trips/hr/ha, this equates to a total of 800 trips in the peak hour. The modelling results for this scenario are presented in Table 3 below.

Approach	Movement	AM Peak			PM Peak		
		Ave. Delay (s)	LOS	95% Q(m)	Ave. Delay (s)	LOS	95% Q(m)
Allwill Dr (south)	Left	13.5	B	0.1	7.1	A	0.0
	Right	42.6	E	4.7	52.3	F	15.9
Hautapu Rd (east)	Left	5.0	A	0.0	4.8	A	0.0
	Through	0.3	A	0.0	0.1	A	0.0
Hautapu Rd (west)	Through	0.0	A	0.4	0.0	A	0.2
	Right	30.5	D	0.4	5.7	A	0.2
All Vehicles		**1.2**	**NA**	-	**2.9**	**NA**	-

Table 3: Allwill Drive Intersection SIDRA Results – With Kama Trust and HLG Traffic

31. The above results show that the intersection has reached the point of flow breakdown in the evening peak for the right turn movement out of Allwill Drive. The morning is also showing signs of reaching capacity with LOS E for the same right turn movement.

32. Based on these findings, it is my opinion that the trigger for requiring the signalisation of the Allwill Drive / Hautapu Road intersection should not be related to the Area 6 sites but instead should relate to the deferred industrial zoning within the HLG land (assuming that this zoning is accepted as part of the Plan Change). The trigger relating to the signalisation being required once Allwill Drive connects to Road 1 is also still valid as this would notably increase volumes on Allwill Drive.

KEY ISSUES - SAFETY ANALYSIS

33. I have also considered the safety effects on pedestrians and cyclists of the signalisation of the Allwill Drive intersection. While the signals assist in supporting traffic volumes associated with the future development anticipated on the southern side of Hautapu Road, there is also a potential benefit provided by providing a controlled location for pedestrians and cyclists to cross the road.

34. At present, there is a shared path that runs along the eastern side of Victoria Road that currently terminates at its intersection with Hautapu Road. There is no current pedestrian infrastructure on the western side of Victoria Road. The cycle lanes on Victoria Road south of the SH1 interchange terminate at the northern extent of the interchange.

35. The bulk of residential land within Cambridge is located to the southeast of Area 6 and therefore it is likely that anyone walking or cycling to the site would use Victoria Road given this is the most direct connection to those residential areas. Given that Area 6 is on the northern side of the road and that the only pedestrian path is on the eastern side of the road, there would be no reason for people to cross Hautapu Road at Allwill Drive but

rather stay on the same side of the road as it goes around the corner where it transitions from Hautapu Road to Victoria Road.

36. Cyclists travelling from Area 6 towards Cambridge would likely use the shared path or cycle on-road. Cyclists to Area 6 from Cambridge are likely to use the shared path up to the interchange and can then either cross at the interchange to use the shared path or continue cycling on-road, sharing the carriageway with other vehicles. Adding a signalised crossing location at Allwill Drive is unlikely to affect how cyclists would travel to or from Area 6.

37. I note that the structure plan includes a new shared path on the western side of Victoria Road north of the SH1 interchange. It is reasonable to assume that this would be constructed at the same time as Road 1 given that this path integrates with Road 1 to connect to the wider Structure Plan area. There is no trigger as to when this new path would be provided however given that this path is unlikely to be completed prior to Road 1 and that the signalisation would be required once Road 1 is connected to Allwill Drive, it is likely that a signalised crossing at Allwill Drive would be provided by the time the path is also provided.

38. The future land uses within the area south of Hautapu Road are expected to be industrial in nature. It is therefore unlikely that there would be any attractions for people working within Area 6 to walk or cycle to the southern side of the road. Hence there is unlikely to be any additional demand created for pedestrians or cyclists crossing Hautapu Road near Allwill Drive as a result of development within Area 6.

39. I conducted a search of the Waka Kotahi Crash Analysis for all crashes that had been reported on Hautapu Road between Victoria Road and Peake Road including a 50m radius around intersection on this stretch of road over the last five-year period. The search found that five crashes had been reported, none of which resulted in any injuries. Four crashes were rear end crashes, three at Victoria Road and one on Peake Road, and the other

crash was due to a vehicle travelling at excessive speed on the corner outside the dairy factory. No crashes involved pedestrians or cyclists.

40. Overall, it is my opinion that pedestrian and cycling demand from within Area 6 is unlikely to warrant signalisation of the Allwill Drive / Hautapu Road intersection.

KEY ISSUES - POLICY ANALYSIS

41. Policy 7.3.4.9 within Section 2.2 of the proposed Plan Change seeks to establish industrial activities to allow for existing activities within the Carter's Flat Commercial zone to relocate to Area 6. Requiring the signals at Allwill Drive to be completed prior to development occurring within Area 6 does not align with this policy as it may delay the relocation of activities within Carter's Flat.

42. As part of the expert conferencing session, Mr Apeldoorn expressed the opinion that having the trigger relating to the Allwill Drive signals ensures that additional assessment is carried out if the signals have not been constructed. It is my opinion that the analysis within this evidence sufficiently demonstrates that the signals are not required to support Area 6 as currently proposed but would be required to support the deferred industrial zoning as proposed by HLG. By changing the trigger to relate to the deferred industrial zoning, this reduces the risk for additional analysis and potential delays to relocating activities within the Carter's Flat area and therefore better aligns with proposed Policy 7.3.4.9.

43. During the expert conferencing session, it was also discussed whether an ITA could be prepared at subdivision stage for Area 6 to assess the effects of the signalised intersection not being completed. It was not clear from the planning experts whether an ITA would technically be required depending on the hypothetical consenting strategies related to subdivision. However, I consider that my analysis sufficiently addresses an appropriate trigger point for when additional analysis for development

would be required should the signals not be completed at that time and the HLG land is accepted within PC17. Removing the signalisation trigger related to Area 6 as currently proposed and relating it to the deferred industrial zone sought by HLG therefore removes the risk of additional delays to development being completed and therefore better aligns with Policy 7.3.4.9.

44. I am also aware that there is likely to be a private developer agreement between the Area 6 developers and Waipā District Council. Removing the necessity for the Allwill Drive intersection to be signalised prior to development enables flexibility for both the future developer and Council in this agreement to avoid conflicting with Policy 7.3.4.9. However, relating the trigger to the deferred industrial zone ensures that development is not able to continue unabated without sufficient infrastructure being provided.

CONCLUSION

45. I have assessed whether the intersection between Allwill Drive and Hautapu Road is required to be signalised prior to development being completed within Area 6. It is my opinion that signalisation is not required for Area 6 as currently shown on the Structure Plan but would be required if the HLG deferred industrial zone is to be uplifted to become an enabled industrial zone. Assuming the Plan Change is approved, it is my opinion that this allows industrial activities to relocate from Carter's Flat in accordance with Policy 7.3.4.9 without having to wait for additional infrastructure or assessment to be completed.

Michael Turner Hall

26 May 2023