BEFORE THE INDEPENDENT HEARINGS PANEL

UNDER the Resource Management Act 1991 (RMA)

AND

IN THE MATTER of an application by Onoke Heights Limited for resource consents for a 93 lot residential subdivision on Dip Road, Whangarei

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STATEMENT OF EVIDENCE OF DEAN SCANLEN
TRANSPORT
31 OCTOBER 2023

MAY IT PLEASE THE INDEPENDENT HEARING PANEL

INTRODUCTION

1. I am an independent traffic, transport and access engineering specialist based in Whangārei. I have practiced in this discipline for more than 35 years since graduating with a Bachelor of Engineering degree, with first-class honours, from Auckland University in 1985. I am a chartered professional engineer, a chartered member of Engineers NZ and a member of the Engineers NZ transportation group. I regularly update my knowledge and skills through attendance at formal courses, private reading, research and review of revised guideline documents and standards. I recently successfully completed the course "Safe-Systems Audit" by Safe System Solutions, so am well versed in the engineering of transport systems to maximise their safety for all users.

2. My past work has involved the provision of services relating to traffic, transport and access engineering for major residential subdivisions and housing developments, commercial developments and work for public institutions including schools, tertiary institutions and churches.

3. I carried out the assessment of traffic and transport effects of the proposed subdivision known as "Onoke Heights" at 47 Dip Road, Te Kamo, Whangārei, on land legally described as Section 1 SO 65970 ("The proposal"). My findings are contained in a report entitled "Subdivision; 47 Dip Road, Whangārei; Integrated Transport Assessment" and dated 24 November 2021. I refer to that document in this evidence as "the ITA". I have appended the summary of my findings from the ITA.

4. My recommendations included the location of the connection point to Dip Road. Connections north of the proposed point do not have complying sight distances towards the north.

5. In February 2022, I also responded to a request for further information from the Whangārei District Council (**Council**).

6. As a result of this work, the Council consents engineer and Northland Transportation Alliance have accepted that the traffic and transport effects of the proposed subdivision will be less than minor.

CODE OF CONDUCT

7. While this is a Council level hearing, I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 and have complied with the Code of Conduct in preparing this statement of evidence. Unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express. Where necessary, I have qualified my findings and conclusions.

8. I have not relied on the evidence of any other experts except as expressed in accepted literature.

SUMMARY OF EVIDENCE

9. My evidence covers all traffic, transport and access engineering aspects and effects of the proposal. It focuses on matters raised in submissions and the report prepared by the council's reporting planner under s42A (RMA).

10. I have carefully evaluated the key traffic and transport-related concerns expressed in the submissions on this proposal and respond to them in this evidence.

11. The proposal will almost certainly reduce the traffic on Dip Road south of the subdivision access connection point to that road. This will occur because the new internal roads link to existing roads both east and west of the site and will provide a shorter and quicker route to most destinations from existing and future development northwest of the site. The road that will be most affected by the traffic – Tuatara Drive, is of a suitable width and the traffic safety risk on it will remain adequate without traffic calming. The Three Mile Bush Road/Tuatara Drive/Crawford Crescent roundabout will remain suitable in its current form even with further (future) development in the catchments of existing roads beyond the site.

12. I concur with the conclusions in the s42A report and Council consent engineer's reports relating to traffic and transportation matters. I agree with the proposed transportation conditions.

PURPOSE AND SCOPE OF EVIDENCE

13. This evidence covers all traffic, transport and access engineering aspects of the proposal and the anticipated consequential effects. It focuses on matters raised in submissions and the report prepared by the Council's reporting planner under s42A. Where the matters have already been addressed in the ITA, I provide a cross reference to the relevant location and do not address the matter in detail.

14. The matters I address in this evidence include:

    (a) Impacts on Dip Road, especially during peak periods for Hurupaki school and the need for a footpath north of the Dip Road access connection;

    (b) Suitability of Tuatara Drive, especially with regard to its width, the speed of traffic, safety of residents and potential congestion;

    (c) Speed and sight distance in relation to the Three Mile Bush Road/Tuatara Drive intersection (a roundabout), especially with vehicles travelling west on Three Mile Bush Road;

    (d) Cumulative effects – particularly the potential impact of future development in the catchments of the roads beyond the site; and

    (e) Use of the subdivision roads as a shortcut.

15. Submitter Shaughan Anderson seeks improvements to parking for the Onoke reserve walking track. All parts of the subdivision are within easy walking distance of the reserve, so will not increase the parking demand at it significantly, if at all. This is an existing issue that will not be significantly exacerbated by the subdivision, so I do not address it in this evidence.

IMPACT ON DIP ROAD, ESPECIALLY DURING PEAK PERIODS FOR HURUPAKI SCHOOL

16. My original assessment found that the net effect of the subdivision will almost certainly be a reduction in the traffic on Dip Road south of the site, including the section that fronts Hurupaki School. I have not seen anything that changes this conclusion, so I maintain that the subdivision will have a positive impact on the traffic in the locality of the school.

17. In any event, I do not see evidence of significant harm occurring in relation to transport to and from Hurupaki School. I have checked in the *CAS* crash database for the crash history in the vicinity of the school since the start of 2018. Two crashes have been reported, but neither occurred during times of drop off and pick up of pupils from the school. Furthermore, both crashes involved the loss of control of a single vehicle, not a collision with a person on foot or on a bicycle.

18. One incident has been reported involving a school pupil walking to school. It occurred near the Three Mile Bush Road/Te Puia Street intersection, which is 65 metres east of the intersection with Dip Road. The child was crossing Three Mile Bush Road, was hit by an eastbound vehicle and suffered a minor injury. The subdivision will generate no more than a negligible increase in the through traffic on this part of Three Mile Bush Road, most likely none at all.

19. I also note that the entrance to Hurupaki School is between Three Mile Bush Road and Iti Street. Within that section of Dip Road – a length of 210 metres, there is a speed hump and the intersection with Iti Street is a small roundabout. So that section is already a "slow street" and its safety can probably only be improved further by reducing the traffic on it, as I expect this subdivision to achieve.

20. I finally note that there is an existing walkway along Dip Road north of the proposed subdivision connection. While it is unsealed, it is completely separate from the road and is more than adequate for most people.

SUITABILITY OF TUATARA DRIVE

21. The specific concerns raised about Tuatara Drive include the safety of people using it, including pedestrians and children playing on it, plus its capacity for the additional traffic.

22. Further to my assessment in the ITA, I have recently carried out general research into the influence of the widths of various road types on the "social cost"[1] of crashes on roads between intersections. The social cost of crashes is controversial as a measurement tool, especially where fatal

[1] Calculated using per-crash costs given in the *Monetised Costs and Benefits Manual*, v1.6, Waka Kotahi April 2023.

crashes are concerned. Nevertheless, it is the best indicator that I know of, of the level of harm that is occurring on our road networks.

23. This research was assisted by the recent release of spatial speed limit data by Waka Kotahi for all roads in the nation[2]. In combination with spatial road data[3], I have been able to apply this to create accurate maps of roads of each speed limit. I then searched the *CAS* crash database for injury-causing crashes that are likely influenced by the width of the roads, across the search areas[4] in the most recent 5 calendar years (2018 to 2022), eliminated crashes that cannot have been related to the midblock road width[5] and then read each relevant crash into the map spatially. My mapping software has recently added a tool that enables the extraction of data from road centrelines and its application to any point including crash data[6].

24. Once I had assigned the relevant data to the relevant crashes, I wrote it back into a spreadsheet, calculated the total social cost of the crashes then standardised those by vehicle-kilometres travelled (VKT) on the various ranges of road widths.

25. Tuatara Drive is 8.2 metres wide kerb-to-kerb and has a 50 km/hr speed limit. I have refined the data from the broader study for roads with that speed limit and in the width range 8.0 to 8.4 metres (which I refer to in this evidence as “representative roads”).

26. There are nearly 800 kilometres of representative roads within the search area, with total usage close to 1.4 million vehicle-kilometres per day. Of those, 162 kilometres, with total usage close to 560,000 vehicle-

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[2] In the form of polygons that enclose the roads within speed limits ranging from 10 to 110 km/hr It is available for free download from the “National Speed Limit Register” at https://opendata-nzta.opendata.arcgis.com/datasets/NZTA::national-speed-limit-register-nslr/about

[3] From https://www.nzta.govt.nz/about-us/open-data/national-road-centreline-data-request

[4] For roads in width ranges relevant to Tuatara Drive, the north island except Auckland and Taupo. This was necessary to ensure adequate statistical confidence. Auckland and Taupo district have not provided the relevant data to the open dataset so could not be included in any of the analyses.

[5] Crashes resulting from family harm incidents and/or intentional harm (including assault with a vehicle), police pursuits or incidents involving vehicles departing from a driveway, side road or other intersection. All “midblock” crash types and movements have been included.

[6] This was necessary because crash reports in *CAS* do not include the widths of roads.

kilometres per day, already carry at least the level of traffic I expect on Tuatara Drive at full subdivision development – 1,500 movements per day.

27. This research has shown a number of things relevant to Tuatara Drive:

    (a) With sealed urban roads wider than 5.4 metres, there is not a significant correlation between, nor a large variation in, the standardised social cost of crashes and the width. As such, there is unlikely to be any significant benefit in widening Tuatara Drive.

    (b) The standardised social cost of crashes on the representative roads that carry at least 1,500 vehicle movements per day, is only a little over one-third of the typical rate for urban roads wider than 5.4 metres. This is, at least in part, because no fatal crashes have been reported on that subset of representative roads[7].

    (c) Much greater harm, per vehicle kilometre, is occurring on the less busy roads within the representative width range. In fact, the standardised social cost of crashes on all representative roads is higher than the average for sealed urban roads wider than 5.4 metres.

28. I have also taken a random sample of nearly forty sections of the representative roads, totalling 11.3 kilometres and all with traffic of at least 1,500 movements per day, and determined which are already "slow streets". Only five of those sections, totalling 1.2 kilometres, were slow streets.

29. The lower-than-average rate of harm on representative roads with traffic of at least 1,500 movements per day, is despite a high proportion of them not having active treatments to reduce vehicle speeds.

30. I acknowledge that the subdivision will increase - anticipated to more than double, the traffic on Tuatara Drive. However, my recent work, as refined in relation to Tuatara Drive, shows that this risk is not necessarily proportional to the increase in traffic. In any event, the risk will almost certainly remain well within limits experienced on other roads and generally accepted.

[7] And fatal crashes heavily dominate crash social costs. According to Waka Kotahi, the social cost of an average fatal crash is nearly 19 times that of an average serious-injury causing crash and nearly 180 times that of an average minor-injury causing crash.

31. As such, I maintain that the effect of the additional traffic on Tuatara Drive, both generated and enabled by the subdivision, will be less than minor (risks and effects well within acceptable limits) without traffic calming.

32. Furthermore, traffic calming devices, especially humps or speed tables, have negative impacts, especially an increase in noise for nearby residents. As such, I typically advise caution when considering the installation of such devices. Given the assessment I have carried out and described above, I do not consider such devices to be necessary nor appropriate for Tuatara Drive.

33. I note that only one crash has been reported on Tuatara Drive since the start of 2018. It involved a vehicle colliding with a parked car after reversing out of a driveway, with no injuries resulting. It is highly unlikely that slow-street devices would address such a crash.

34. I finally comment that the Whangarei District Plan does not require active traffic calming on urban roads. The 2022 engineering standards specify design in accordance with the "safe-system approach", to achieve "safe-system speeds", but my investigation clearly shows that this is not necessary on Tuatara Drive.

SPEED AND SIGHT DISTANCE IN RELATION TO ONE APPROACH TO THE THREE MILE BUSH ROAD/TUATARA DRIVE ROUNDABOUT

35. The sight distance for vehicles entering this roundabout from Three Mile Bush Road might not meet the standard recommended in accepted guidelines[8]. However, monitoring I carried out of the roundabout, as input to the ITA, also showed that most – 74%, of the existing traffic from Tuatara Drive travels to/from the Te Kamo CBD. That traffic turns left at the roundabout and is not in conflict with the traffic entering the roundabout from Three Mile Bush Road (east). The visibility restriction is not relevant for traffic that turns left.

36. I expect an even higher proportion of traffic generated and diverted by the subdivision to turn left at this roundabout[9].

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[8] For example AUSTROADS, although I have not carried out a detailed assessment to confirm this.

[9] In fact, significantly higher – I expect at least 95%. This is because the subdivision provides a link to Dip Road and most trips to/from destinations west of the roundabout will use Dip Road.

37. Furthermore, no crashes have been reported in relation to the left turn out of Tuatara Drive since at least the start of 2018. I acknowledge that the subdivision will increase the frequency of all turns out of Tuatara Drive but, given the high proportion that will turn left and the absence of reported incidents in relation to that turn, I consider this effect to be less than minor (risks and effects well within acceptable limits).

38. The visibility through the northeastern corner of the roundabout cannot be improved because of a solid fence on the boundary of the private property at that corner. This could be addressed with at least one speed control device. However, as with Tuatara Drive, such a device will potentially have negative impacts, especially an increase in noise for nearby residents. Given the absence of recent incidents and the expected very small increase in the, already infrequent, relevant movements as a result of the subdivision, I do not recommend measures to address this.

CUMULATIVE EFFECTS

39. I have addressed this comprehensively in the ITA, see sections 5.3 and 6.1. I found that the intersections and other roads beyond the site have more than adequate capacity for the subdivision traffic and expected increases as a result of other (future) development in the catchments of the roads, as enabled by the Whangarei District Plan.

USE OF THE SUBDIVISION ROADS AS A SHORTCUT

40. I acknowledge in the ITA that subdivision “Road A” and Tuatara Drive will provide a shorter and quicker route for some trips between existing development and common destinations and, as such, will divert some traffic from existing roads (including Dip Road south of the new intersection with Road A).

41. My detailed assessment included the effect of diverted traffic and I also evaluated the potential effect of future development, especially of vacant land zoned low-density residential, around the northern end of Dip Road. I concluded that the road network has more than adequate capacity to cope with all of this traffic and I have not seen anything in submissions or the s42A report that changes this conclusion.

REPORTING PLANNER'S REPORT (s42A, RMA)

42. I agree with the sections of the s42A report that address traffic and transport effects and the conclusions that arise. I also support the draft conditions in the report of the Council's consents engineer (Ms Jo Floyd).

CONCLUSION

43. My overall conclusion remains that the existing road network is adequate for the traffic generated by this subdivision and that, as such, its effects will be less than minor. I have not seen anything in either the submissions nor the s42A report that changes my opinion.

DATED this 31st day of October 2023

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Dean Scanlen

Appendix: Summary of findings of the original ITA
(24 November 2021)

It is concluded that the proposed new links, including footpath and pedestrian links and the internal subdivision access are suitable, fit for their intended purpose and will meet all relevant provisions of the Whangarei District Plan.

At full subdivision development, traffic generation totalling 800 movements is expected on an average day. Walking trips are expected to be frequent and a significant proportion of all trips. The use of bicycles will remain well below that of private cars for many years at least, but is expected to increase significantly with the advent of affordable e-bikes and ongoing future improvements to public offroad cycling and shared paths.

The subdivision will only increase the usage of Tuatara Drive to less than one-third of its capacity, and will decrease the traffic on Dip Road south of the subdivision. The intersections and other roads beyond the site have more than adequate capacity for the subdivision traffic and expected increases as a result of other (future) development in the catchments of the roads, as enabled by the Whangarei District Plan.

The design maximises opportunities for walking by providing safe linkages to the existing footpath on Dip Road, Hurupaki school and other local attractions. In particular, there is an existing footpath along the site (eastern) side of Dip Road, of which the section south of the new intersection is proposed to be upgraded to a concrete path and connected to the existing concrete footpath[10]. A continuation of the footpath along the southern side of Road A will link to the existing footpath on the eastern side of Tuatara Drive. It is less than a 1 kilometre walk to the nearest public bus stop and the design provides a continuous link to that and all other walkable local attractions.

A combination of carefully designed internal road alignment including the minimum suitable carriageway widths and other measures that will provide a calming effect on drivers, will ensure safe speeds and minimal exposure for pedestrians crossing the roads. Inset parking bays are proposed, at a rate of one parking space for each 2.3 lots, to minimise the risks associated with parking

[10] Which is ends at the culvert crossing near the southern corner of the site - at RAMM 420 metres.

spillover into locations in which there is insufficient space for parking and/or other streets.