

**BEFORE THE NEW PLYMOUTH DISTRICT COUNCIL
INDEPENDENT HEARING COMMISSIONERS**

IN THE MATTER the Resource Management Act

AND

IN THE MATTER of a request for Private Plan Change NPDC PLC18/00048
by Oakura Farm Park Limited to rezone land at Oakura
within the New Plymouth District

**STATEMENT OF EVIDENCE OF ANDREW SKERRETT ON BEHALF OF OAKURA
FARM PARK LIMITED**

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INTRODUCTION

1. My full name is Andrew David Skerrett.
2. I am a civil engineering consultant at AMTANZ Ltd, a local consulting firm.
3. I have a Bachelor of Civil Engineering from the University of South Wales (UK). I am a member of the Institution of Civil Engineers (UK). I have 30 years of experience as a civil engineer. For the past 22 years I have practised here in New Plymouth and have been involved in resource consent applications for a range of projects, including roading projects, residential subdivisions, educational and medical developments.

CODE OF CONDUCT FOR EXPERT WITNESSES

4. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. This evidence is within my area of expertise, except where I state that I am relying on another person, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

SCOPE OF EVIDENCE

5. My evidence will cover:
 - (a) Traffic impact assessment;
 - (b) Submissions;
 - (c) Officers report.

6. I confirm that I have read and are familiar with the submissions, officers' reports and any proposed consent conditions relating to traffic.

EXECUTIVE SUMMARY

7. My evidence concludes that the proposed development can be designed to ensure the traffic effects from the proposed plan change can be sufficiently mitigated.
8. In the ultimate situation when both the plan change and Oakura West FUD are developed, a suitably designed roundabout will be able to accommodate the predicted traffic flows and that there is sufficient room for it to be developed within the existing road reserve.
9. The underpass will provide a valuable connection under the highway for walkers, cyclists and horse riders and will eventually provide a link through the esplanade reserve towards the beach.
10. The traffic volumes on State highway 45 towards New Plymouth will increase significantly over time but the current configuration can accommodate this gradual increase in volume.
11. The new access onto State highway 45 is a beneficial option, it improves circulation within the plan change area, reduces traffic on Upper Wairau Rd and provides a better potential access point for the future development of the Oakura West FUD.

Traffic Impact Assessment (TIA)

12. The TIA is based on a yield of 399 lots and the traffic generated at a rate of 8.5 trips/lot/day (measured currently on Upper Wairau Rd) with a sensitivity analysis based on NZTA's 10.4 trips/lot/day. It also included the potential effects if the Future Urban Development Oakura West Area was also fully developed at a similar yield rate and trip generations. It also made

an allowance for further growth on Upper Wairau Rd. I consider the number of lots used in the assessment to be in excess of the likely yield due to the land topography and hence the traffic volumes can be considered at the high end of that likely to be generated.

13. The future flows were based on a 10 year time frame, but in reality I believe it would take substantially longer for the developments to reach full development. However, it is a reasonable attempt to show the ultimate impacts if all the developments were to occur.
14. The NZTA's trip generation figure is based on "Research Report 453 - Trips and parking related to land use November 2011". This shows that for residential developments there was some variation in trip generation by sub-groups of houses, divided between household size or car ownership, within each of the surveys, but it was not determined why this variation occurred. The 85th percentile figure of 10.4 trips/day per household was recommended as an appropriate figure for design and assessment purposes when considering the full range of households within a city. However, there are many suburbs where a lower figure is appropriate and suitable rates per household may need to be selected in different urban areas. Car ownership did not appear to be the sole dictator of household trip making e.g. for households with 1.8 cars, the trip rate varied widely, from about 4 to 13 trips per household per day.
15. The surveys showed that lower trip generation rates were typically found in more rural subdivisions. Surveys near Queenstown and Christchurch found daily rates of between 6 and 8 trips per household which could reflect an increase in trip linking, which tends to occur when the primary employment trip is longer, than say 15-20 minutes, as with households located on the outskirts of an urban area or here in Oakura.

16. NZTA themselves have been known to depart from their guideline. For example, for a plan change in Whanganui NZTA's consultant based their evidence on a generation rate of 8 trips/lot/day.
17. In order to validate the trip generation rates I have reviewed traffic count data from 55 residential cul de sacs around New Plymouth which provide a daily trip generation/lot range of between 3.8 and 14.6, which is not dissimilar to the range previously mentioned. The 85th percentile figure from these sites is 9.5 trips/lot/day. In the survey set there were two cul de sacs located in Oakura which generated rates of 6.2 and 8.7 trips/lot/day. I am therefore confident that the approach taken in the TIA, based on a trip generation rate of 8.5 trips/lot/day, adequately predicts the likely levels of traffic generation for the proposal.
18. The TIA assumed that all the traffic generated from the proposal would utilise Upper Wairau Rd and that generated by the Oakura West FUD area would utilise Lower Wairau Rd in every trip during the peak hours.
19. The TIA demonstrated that the intersection of Wairau Rd and State highway 45 (South Rd) level of service (LOS) would drop to a level D if the proposal is considered in isolation. If the other potential increases in traffic are taken into account the Level of Service drops to an F with unacceptable delays.
20. To mitigate these effects a roundabout is proposed to be constructed which improves the ultimate performance to a LOS B. The roundabout would also address residents' concerns regarding the speed of traffic on the highway by acting as a traffic calming measure.
21. The roundabout would also potentially have a positive effect in terms of safety as cross roads typically perform less well for the crossing movements. However, roundabouts tend to have a negative impact on

more vulnerable road users. It is proposed that a pedestrian underpass is installed under the highway to the south of the intersection to provide an alternative means of crossing the highway.

22. Meetings with NPDC and NZTA regarding the roundabout and underpass were positive with NZTA viewing it as a positive method of accommodating future growth and providing a traffic calming feature on the entry to Oakura. NPDC again saw the benefits for addressing future growth on Wairau Rd and the opportunity to provide access for walkers and cyclists through the underpass. Hence, the discussions around cost sharing and I note NPDC has included a line item in its 10 Year Plan 2018-28 for funding of these facilities.

Submissions

23. The submissions to the proposed plan change raised a number of areas of concern regarding traffic impacts. There is no doubt the traffic volumes will increase significantly on Upper Wairau Rd, but I believe there is sufficient seal width to cater for the increased traffic flow. The volumes are likely to be similar to Carrington St north of Hori St.
24. Concerns were also raised regarding the traffic volumes on State highway 45 and again there is sufficient capacity to cater for the volumes predicted, which are of a similar volume to that which currently exists on State highway 45 near Lawry St in New Plymouth.
25. I think it is important to bear in mind that if the FUD areas in the current district plan were developed they could potentially generate flows on State highway 45 (east) of between 12,100 and 13,000 vpd. The plan change would see this increase to between 14,700 and 16,000 vpd. Without the development of the Oakura West FUD the plan change would see traffic volumes of between 11,200 and 11,900 vpd. I see the highway having sufficient capacity to accommodate this growth.

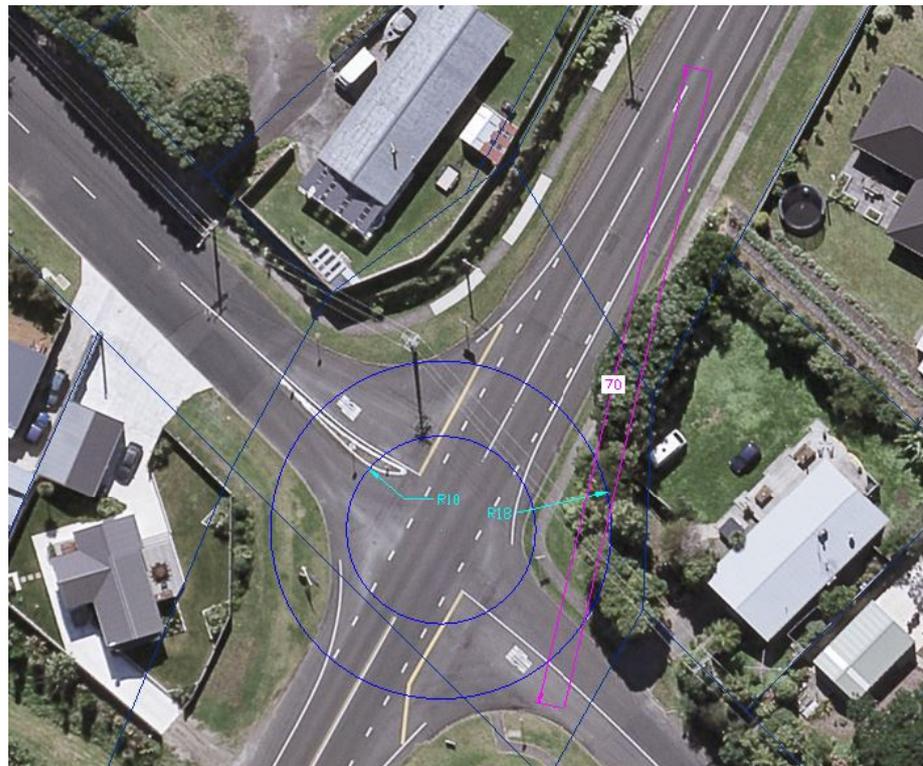
26. There were concerns raised regarding the roundabout being sufficiently large to cater for heavy goods vehicles. The indicative roundabout shown in the TIA has an internal radius of 10m and circulating width of 8m which complies with Austroads design guide and is, in my opinion, sufficient to cater for the State highway traffic. It is considerably larger than other roundabouts in New Plymouth which typically have a 10m radius centre island and 3 – 4m circulating widths e.g. the Brooklands Rd/Hori St/Upjohn St and Carrington St/ Brooklands Rd / Tarahua Rd roundabouts. Concerns were also raised regarding the grade of the approach from the north (New Plymouth side) and whilst it is steeper than one would ideally like, it is not unacceptable.
27. A number of submitters raised concerns regarding access to the school. A short report was prepared (Appendix C) on this issue and submitted as additional information to the application. The report indicated the intersection of Donnelly St and State Highway 45 currently performs satisfactorily and will cater for the potential growth in traffic if the same turning proportions are used as current. A site inspection covering the afternoon pick-up time indicated queues of up to 8 vehicles occurred for a short period of time but were dissipated within a 15 min period. The increased traffic will increase these queues and one method of addressing this is to complete the paper road between Butlers Lane and Hussey St to provide an alternative route to the highway.
28. A number of submitters suggested that an access to the proposed Wairau Estate, in addition to the access off Upper Wairau Rd, should be provided off State Highway 45. This was raised again in the pre-hearing meetings. A study of this option was undertaken (Appendix B) and submitted to council. We found that a suitable location is available although the undulating nature of the highway means that whilst vehicles remain visible for the required sight distance for 100kph design speed in each direction the road surface disappears from sight. Road safety considerations would be improved if a reduced speed of 80kph was adopted.

29. The additional access will divert traffic flows from Upper Wairau Rd. In order to assess the change in traffic flows a split based on the distance from each lot to the intersection of State highway 45 and Wairau Rd was used with the traffic taking the shortest route. The Wairau Rd intersection was then modelled for the morning peak hour in SIDRA and it showed the LOS for the right turn movements were at a LOS C, which is acceptable and a roundabout is therefore not required for to maintain efficient traffic circulation.
30. The location of the new access also potentially provides a better access point off the highway to the Oakura West FUD area. This ultimately could potentially take the form of a roundabout located on SH45 serving residential development either side.
31. In order to address the concerns regarding the speed of traffic into Oakura we recommend the implementation of an 80kph speed zone from west of the new access back into the 50kph zone.
32. At the time of writing this evidence we have not received feedback from NZTA on the proposed access, but we will be able to discuss and provide feedback to the commissioners following the expert conferencing that is due prior to the hearing.

Officer's report

33. I have read the Officers S.42A report dated 31 May 2019. I agree with the conclusion in Para 13.58 that traffic, parking and access effects can be effectively managed through the implementation of a combination of the various methods being considered.
34. Councils' traffic advisor has raised a number of issues which I'd like to address. Most of these can be resolved through the detailed design process prior to sub-division consent being granted.

35. A concern has been raised regarding the sight distance to the eastern quadrant of the roundabout requiring additional land to be taken. For an arterial route with a 50kph approach speed Austroads Part 4b requires a sight distance of 70m to allow vehicles to be able to judge a 5 sec gap to enter the roundabout. The following image shows that this is achievable without taking land. It should also be noted that there is room within the road corridor for the roundabout to shift to the north providing further sight distance if required.



36. A concept design of the roundabout has been prepared by McKinlay Surveyors and is attached in Appendix A of my evidence. This shows that there is sufficient room within the existing road corridor for the provision of footpaths on all four quadrants.
37. The design concept in Appendix A also shows the connections between Wairau Rd and the proposed underpass. The connections are all contained within the highway reserve, esplanade reserves or the proposed plan change area. In order for the paths to be constructed some retaining

structures may be required. But it should be able to be constructed without requiring land from third parties.

38. Councils' traffic advisor has raised concerns regarding the proposed new access onto State Highway 45 in terms of the visibility. I believe the requirements of Austroads can be met; however, this would need to be confirmed with a detailed topographical survey of the road the results of which may indicate adjustment to the highway vertical elevation over a short distance to the south of the site is required to achieve guidance sight distance.

Conditions

39. TBC following the outcome of scheduled conferencing on traffic matters.

CONCLUSION

40. I believe the information provided demonstrates that in the ultimate situation when both the plan change and Oakura West FUD are developed a suitably designed roundabout will be able to accommodate the predicted traffic flows and that there is sufficient room for it to be developed within the existing road reserve.
41. The underpass will provide a connection under the highway for walkers, cyclists and horse riders and will eventually provide a link through the esplanade reserve towards the beach.
42. Both NZTA and NPDC both saw benefits in the proposed solutions and indicated this with the discussion around shared funding of their construction.
43. The traffic volumes on State highway 45 towards New Plymouth will increase significantly but the current configuration can accommodate this.

44. The new access onto State highway 45 is a beneficial option, it improves circulation within the plan change area, reduces traffic on Upper Wairau Rd and provides a better potential access point for the future development of the Oakura West FUD.

Dated 17 June 2019

Andrew David Skerrett

