

IN THE MATTER of the Resource Management Act 1991 (“RMA” or “the Act”)

AND

IN THE MATTER of a submission by **AMBURY PROPERTIES LIMITED** in respect of the **PROPOSED WAIKATO DISTRICT PLAN** pursuant to Clause 6 of Schedule 1 of the Act seeking the rezoning of land at Ohinewai

SUMMARY STATEMENT OF CAMERON INDER IN RESPECT OF TRAFFIC AND TRANSPORTATION IN PREPARATION FOR EXPERT CONFERENCING

1. INTRODUCTION

- 1.1 My name is Cameron Beswick Inder. I am a transportation engineer and the Transportation Engineering Manager at Bloxam Burnett & Olliver (BBO). I have 20 years’ experience in transportation and traffic engineering matters associated with resource management, including effects assessments for resource consents, Plan Changes and District Plan Structure Plans.
- 1.2 I also have experience in the design of traffic infrastructure and facilities, road safety engineering, traffic calming, urban design, subdivision design, and traffic modelling. I have been advising Ambury Properties Limited in relation to traffic and transportation issues to its submission seeking a rezoning of land at Ohinewai.
- 1.3 I managed the preparation of the Integrated Transport Assessment (December 2019, and updated in May 2020) in relation to the Ohinewai proposal and have had several discussions with representatives of the Waikato District Council and the New Zealand Transport Agency in relation to traffic planning and potential traffic effects.
- 1.4 I will be presenting expert evidence at the hearing of the Ohinewai submissions. That evidence is due in July 2020. In the meantime, this

statement has been prepared in preparation for expert conferencing in relation to traffic and transportation that has been scheduled for 22 and 23 June 2020, in compliance with the direction from the Hearing Panel that APL is to provide a summary of its position on the topics that are to be the subject of expert conferencing.

Scope of statement

- 1.5 As a basis for expert conferencing, this statement will:
- (a) Identify what I see as being the key issues for determination in relation to traffic and transportation and set out my expert opinion on that issue and the reasons for my views (Section 2);
 - (b) Set out my key conclusions (Section 3).

Expert Witness Code of Conduct

- 1.6 I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court Consolidated Practice Note (2014) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my statement I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2. KEY ISSUES RELEVANT TO TRAFFIC AND TRANSPORTATION AND MY OPINION ON THESE ISSUES

- 2.1 I have worked with Mr Olliver and others to identify the key issues that need to be determined in relation to traffic and transportation matters for the proposed plan change. The key issues are those that I understand are not agreed, based on the s42A report and discussions with other parties. The purpose of this section is to set out the issues and then my expert opinion in relation to that issue, including the reasons for my opinion.

Transportation models

Issue

- 2.2 The key issue here is whether the transportation models (Waikato Regional Transportation Model (WRTM) with performance evaluations using SIDRA), including their underlying assumptions and validation as used in the Updated ITA, are an appropriate representation of what can be expected to occur in future.

My opinion and reasons

2.3 In my opinion, these models do provide an appropriate representation of what can be expected to occur in future for the following reasons:

- (a) The WRTM's baseline traffic volume projections include all known permitted and anticipated land use developments within the Waikato region. Unlike undertaking an effects assessment on the basis of trip generation and distribution first principles, the WRTM incorporates the effect of these other developments on the performance of the Waikato Expressway (WEX), the Ohinewai Interchange and the local road network affected by the trip generation associated with the Ohinewai Structure Plan (OSP) area.
- (b) Furthermore, the WRTM includes all planned road construction/upgrade projects of influence in the region such as the Huntly and Hamilton sections of the WEX. The corresponding change in travel behaviour/ travel patterns as a result of these planned road projects and the effect on the performance of the transportation network are incorporated within the WRTM.
- (c) The WRTM does not include other forms of transportation such as rail (including freight and passenger rail), public transport, walking and cycling. On this basis, the WRTM is considered to provide a conservative estimation of the trip generation associated with the OSP area as there is no reduction in road trips for other transport modes.
- (d) The 2013 Base Year WRTM (2,500 zone WRTM) was not initially well calibrated for the OSP area on the basis that the traffic volume projections for 2021 were significantly lower than the actual observed average daily traffic (ADT) volumes along the section of the WEX through Ohinewai, Te Kauhwata and Huntly in 2018. As a part of this assessment, the WRTM was recalibrated using 2018 traffic data for the expressway in proximity to Ohinewai from the NZTA's TMS website as well as new surveyed volumes at the on-and off-ramps and some local roads in August and December 2019 as calibration input data. The resulting 2018/19 "pseudo" base year model was considered to be sufficiently calibrated for purposes of the rezoning proposal as the modelled traffic volume figures generally reflected the observed/counted traffic volumes;

furthermore, the GEH statistic¹ showed that there is a good match between the modelled and observed hourly traffic volumes.

- (e) Given the likely interaction of the OSP area with the neighbouring townships, the validation area for the 2018/19 base year model was expanded to include Te Kauwhata and Rangiriri in the north, and Huntly in the south. This ensured that the local as well as wider transportation effects of the rezoning proposals were assessed.
- (f) From there, the proposed OSP land-use was input to the model to identify the projected future traffic volumes and trip distribution on the local network at Ohinewai.

Trip generation rates

Issue

- 2.4 Are the trip generation rates adopted in the Updated ITA from the WRTM for the industrial, residential and commercial components of the Ohinewai Structure Plan appropriate?

My opinion and reasons

- 2.5 In my opinion, the trip generation rates adopted are appropriate for the following reasons:
- (a) The WRTM based trip generation rates for the industrial, residential, and commercial components of the OSP area generally reflect trip rates specified by widely adopted trip generation manuals and related reports². With the exception of the residential component of the OSP area, the WRTM predicts higher trip rate figures for the key land use activities within the OSP area compared to these trip generation manuals and reports.
 - (b) Furthermore, when compared to the trip rates derived from WRTM based effects assessments for similar mixed land-use plan change projects³, the WRTM based trip generation rates for the various land use activities within the OSP area were found to be comparable.

¹ The GEH Statistic is a formula used in traffic engineering, traffic forecasting, and traffic modelling to compare two sets of traffic volumes.

² These include the Institution of Transportation Engineers (ITE) Trip Generation Manual's employment-based and GFA-based trip rates, the RTA Guide to Traffic Generating Developments, the New Zealand Trips and Parking Database, and the NZTA Research Report 453 (Trips and parking related to land use).

³ Including the consented Ruakura Plan Change project, and the approved Te Awa Lakes rezoning.

- (c) On the basis of the above, the WRTM's trip generation rates are considered to provide a conservative estimation of the prediction trip generation for the OSP area.

Trip adjustment factors

Issue

- 2.6 Is the adjustment factor for a mixed use development (interval vs external trips) as predicted by the WRTM based assessment for the OSP area, appropriate?

My opinion and reasons

- 2.7 In my opinion, the WRTM's trip adjustment factor of 20-25% internal trips is not appropriate for the following reasons:
 - (a) The residential and commercial components (with the exception of the discount factory outlet centres) of the OSP area were intended to:
 - (i) Firstly, serve and support the industrial components of the OSP area and Ohinewai West, and
 - (ii) Secondly, serve the local neighbouring communities (Huntly, Hamilton, Te Kauwhata, etc.).
 - (b) The low internal trips figure from the WRTM (20%-25%) was related to the model being gravity based; this means that a large employer like the proposed Sleepyhead factory attracts trips from all nearby external zones with housing, and because of the much larger size of these external housing zones, more trips are assigned to them than the houses that are adjacent to the employment. This is evident from the origin-destination (O-D) outputs from the WRTM which indicate a more significant attraction to/from these neighbouring communities (including communities located within a 30km radius from the OSP area, e.g. Pokeno, Pukekohe, south Hamilton) than to the internal residential zones within the OSP area. Given the proximity of the residential component to the industrial/commercial components, and because the housing will all be new, and a high level of amenity is planned for residents in the OSP area, I would expect there will be a stronger trip attraction between the internal residential zones and the industrial/commercial components external residential zones.

- (c) Furthermore, the gravity-based model does not consider site-specific factors such as housing affordability, the type of housing or the attractiveness of the community as a place to live.
- (d) On that basis, it is my opinion that the WRTM over-estimates the external proportion by households and I anticipate that the external proportion of trips will more likely be in the region of 60% to 70%. Nonetheless, for a conservative assessment, the WRTM's internal vs external trip figures were applied.

Trip distribution

Issue

- 2.8 Are the assumptions in relation to the trip distribution from the WRTM, which has more trips assigned south than north, reasonable?

My opinion and reasons

- 2.9 In my opinion, these assumptions are reasonable for the following reasons:
- (a) An assessment of the future population and employment growth projections for both major and minor centres located within a 30km radius of the OSP area showed that future growth within the Waikato region is projected to be more towards the south, with approximately 80% of the overall growth in the district expected along the southern population centres such as Huntly and Hamilton City.
 - (b) The location of the proposed development is such that it will form part of the larger Huntly community. On this basis, a larger proportion of the trip generated by the proposed development will travel south to Huntly.
 - (c) The trip distribution generally reflects the existing travel patterns observed at the Ohinewai Interchange derived from 2019 traffic survey data collected within the vicinity of the OSP area.

Impacts on the surrounding road network

Issue

- 2.10 Are the impacts of the Ohinewai Structure Plan development on the operation of the surrounding road network, including the Waikato Expressway, acceptable?

My opinion and reasons

2.11 In my opinion, the impacts of the Ohinewai Structure Plan development on the operation of the surrounding road network are acceptable for the following reasons:

- (a) The effects assessment concludes that the effects of the OSP development traffic on the surrounding road network will be more than minor if no mitigation is planned for in terms of intersection capacity and improved safety, and convenient connectivity for walking and cycling trips to Ohinewai West and Huntly. With the implementation of the recommended mitigation measures as outlined in the ITA, the effects of the OSP development traffic on the network will be appropriately mitigated to a minor and acceptable level.
- (b) Sensitivity testing confirms that the proposed mitigation measures are robust and will remain appropriate for various realistically possible trip generation and distribution assumptions.
- (c) The effects assessment further confirms that sufficient capacity will remain for other potential developments within the Ohinewai area on the basis that the effects assessment was based on the WRTM's conservative estimation of the OSP developments traffic generation and internal vs external trip estimations.

Issue

2.12 Is the surrounding transport network able to accommodate additional heavy traffic projected to be generated by the industrial and commercial components of the Ohinewai Structure Plan if the rail siding was not constructed?

My opinion and reasons

2.13 In my opinion, the transport network will be able to accommodate additional heavy traffic projected to be generated by the industrial and commercial components of the Ohinewai Structure Plan if the rail siding was not constructed for the following reasons:

- (a) Given that the WRTM based assessment does not account for rail-based freight trips (effectively all freight trips were modelled as trips on the road network), the effects assessment already shows that the proposed mitigation measures will be able to accommodate

the heavy vehicle traffic projected to be generated by the industrial and commercial components of the OSP.

- (b) In reality, the implementation of the rail siding will effectively help to reduce traffic capacity and operations effects at the Ohinewai Interchange and the intersection of Tahuna Road and Lumsden Road, over that demonstrated in the ITA and subject to the proposed mitigation.

Need for capacity-related upgrades

Issue

- 2.14 The Updated ITA concludes that no capacity-related upgrades to the Ohinewai interchange are required based on the WRTM trip generation and distribution. Is this a reasonable conclusion?

My opinion and reasons

- 2.15 In my opinion, it is reasonable to conclude that capacity-related upgrades to the Ohinewai interchange are not required on the basis that:
- (a) Despite the conservative trip generation predictions in the 2041 WRTM, the effects assessment show that capacity-related upgrades for the Ohinewai Interchange will not be required.
 - (b) Sensitivity testing for various realistically possible trip generation and distribution alternatives showed that the existing interchange configuration has sufficient capacity to operate without adverse effects that are anything more than minor.
 - (c) Capacity upgrade solutions at this interchange involve significant infrastructure works that will be both complex and expensive to achieve. The updated ITA demonstrates that the effects of the total development traffic are likely to be no more than minor, and therefore such upgrades are not justified.

Public transport accessibility

Issue

- 2.16 Are the proposals to enable future public transport accessibility appropriate?

My opinion and reasons

2.17 In my opinion, the proposals to enable future public transport accessibility are appropriate on the basis that:

- (a) The proposal of an interim bus stop on Tahuna Road would allow for a bus service to be provided at an early stage of development, ensuring that public transport becomes an integral part of the transport options for residents and workers from day one.
- (b) Both the interim and long-term public transport proposals offer ease of access for current and future users and a convenient and quick route to minimise delays to the services.
- (c) WRC has since clarified (post updated draft ITA) that it would be possible to add a PT stop at Ohinewai near or within the development, utilising the existing off-peak service between Hamilton and Pukekohe and/or the existing limited frequency peak service between Te Kauwhata and Hamilton.

Lumsden Road realignment

Issue

2.18 Is the realignment of Lumsden Road to provide for the rail siding and associated level crossing acceptable?

My opinion and reasons

2.19 In my opinion, the proposal to realign Lumsden Road to provide for the rail siding and associated level crossing is appropriate on the basis that:

- (a) The introduction of the level crossing on Lumsden Road needs to be seen in the context of the overall urbanisation of this section of road, associated with the OSP development. The urbanisation works will result in lower operating speeds on the section between Balemi Road and Tahuna Road from that which currently exist. With the envisaged future speed limit (60km/h) for this urbanised section of Lumsden Road, together with the geometry of the approach curves and provision of safety barriers and street lighting, plus appropriate advanced warning signs and markings, the associated safety risks are considered to be appropriately mitigated.
- (b) The rail crossing would, however, only be established once 50% of the manufacturing factory and 50% of the light industrial land is developed (development Year 6)– at this point, the area

surrounding Lumsden Road will be urbanised. This will avoid providing out of context curves on the road.

- (c) An independent road safety audit (RSA) of the concept design of the road realignment and level crossing identified only moderate and minor concerns that have been addressed in the updated design drawings in the updated ITA report, together with the RSA and designer responses.

Walking/cycling connections

Issue

- 2.20 Are the proposed local road and walking/cycling connections to and within the Ohinewai Structure Plan area appropriate?

My opinion and reasons

- 2.21 In my opinion, the proposed local road and walking/cycling connections to and within the Ohinewai Structure Plan area are appropriate on the basis that:

- (a) The extensive walking and cycling network within the OSP area would ensure that future residents are provided with convenient, efficient and safe off-road connections between the residential, commercial and industrial precincts such that active mode travel will be a viable and attractive alternative to car-based travel within the OSP.
- (b) The walking and cycling network includes shared paths within the public open spaces, paths on one or both sides of the internal road network, and a walking/ cycling corridor through the business area connecting the neighbourhood centre (convenience retail) to the future PT hub and service centre.
- (c) The preferred walking and cycling connection between the OSP and Ohinewai West (Primary School and the old village) will be a new purpose-built shared path bridge located approximately 315m south of the Ohinewai Interchange. This will span both the North Island Main Trunk Railway and the SH1 Expressway to provide a safe and efficient grade separated solution. The location provides the most direct and convenient connection to the primary school and south to Huntly, and shortest bridge span of the two options considered (the alternative was located north of the Tahuna Road overbridge). The

route / connection is in line with the anticipated predominant pedestrian/ cyclist desire lines. (For completeness, some privately-owned land is required for the path approaches on both the eastern and western sides of the expressway; however, affected landowners have provided their in principle support to the land being obtained for the new bridge connections).

- (d) The NZ Transport Agency has confirmed in principle that a new pedestrian bridge can be established over the SH1 expressway in the preferred location, subject to design conditions and approvals including that the bridge could be removed temporarily if significant over-dimension loads need to pass through, and for future maintenance purposes.
- (e) In terms of walking and cycling connections south to Huntly, there is a sufficient amount of redundant sealed surface in the carriageway of Ohinewai South Road that could be reallocated to accommodate a 2.5m wide segregated shared path on the east side of the sealed surface, while still providing two narrowed lanes for traffic (3.3m wide each) and a 0.3m wide sealed shoulder on the west side. A concept plan of this proposed arrangement is included in the updated ITA, and includes a design for connecting the shared path to a potential shared path on the river stop bank for connection to Huntly. This concept design has been Road Safety Audited, and all identified issues addressed in the updated ITA.

Transportation infrastructure improvement triggers

Issue

- 2.22 Are the transport upgrade triggers for the Ohinewai Structure Plan appropriately aligned with the development staging plan?

My opinion and reasons

- 2.23 In my opinion, the transport upgrade triggers for the Ohinewai Structure Plan are appropriate on the basis that:
- (a) The triggers associated with each improvement are related to safety improvements associated with the subdivision and/or development of specific land use areas/ activities, as well as increasing demand as development stages are completed and the need for people to travel is induced.

- (b) The proposed improvements relate to the associated number of trips (vehicles, public transport commuters and walking and cycling trips) that are expected to be generated and distributed on the surrounding road network as the site is progressively developed.

Internal road network

Issue

- 2.24 Are the proposed internal road network and cross sections for the Ohinewai Structure Plan area acceptable?

My opinion and reasons

- 2.25 In my opinion, the proposed internal road network and cross sections for the Ohinewai Structure Plan area are appropriate on the basis that:

- (a) The internal roads are configured in a grid-network formation based around the site's geotechnical constraints, connectivity between the different land use areas, and connection to the existing external road network.
- (b) The street hierarchy has been designed to be logical, intuitive with a high degree of internal connectivity, and legible. The configuration avoids the need for heavy commercial traffic to use the residential streets while at the same time providing a high degree of connectivity between the land uses, including for active transport such as walking, cycling, e-scooters, etc.
- (c) The proposed road typologies have been guided by the provisions in the District Plan as well as the New Zealand Standard for Land Development and Subdivision Infrastructure. While the residential typologies do not fully comply with the standards set out in the Proposed District Plan in terms of providing a narrower road reserve width, the narrower width (16m) is considered appropriate for the reasons described below:
 - (i) There is limited land that is developable due to significant geotechnical issues and stormwater management and treatment requirements associated with the site being near a significant wetland. The costs associated with stabilising the marginal areas of land is high, so the 'good ground' areas of land need to be used as efficiently as possible for the purpose intended. In this regard, the narrower road

reserve width of 16m for access streets is proposed to support the development of medium density housing. The operational purpose and function of the residential road classes (primarily being for property access) is not expected to be unduly impacted by the reduced road reserve width. Such widths for residential access streets have been successfully implemented in recent developments in Hamilton City.

- (ii) The proposed cross-section elements align well with the road design standards set out in NZS 4404:2010 for a local road providing primary access to housing. In addition, all services, pedestrian facilities and road furniture can be adequately accommodated within the road reserve.
- (iii) As described in the Urban Design Assessment report for the Ohinewai rezoning, the reduced width will promote safer vehicle speeds and thus a safer and more user-friendly environment to support the viability of active mode travel for internal short trips.

Implications of the development of the Ohinewai Lands Ltd land zoning

Issues

- 2.26 Are there any transport implications if the OLL land is identified in the District plan for possible future development?

My opinion and reasons

- 2.27 In my opinion, the OLL proposal being identified in the District plan as possible future development does not cause any transport implication on the OSP. OLL will however have to provide their own transportation assessments at the relevant time for any proposed Plan Change, and if necessary, depending on the activity types and level of travel generated, plan and provide for any infrastructure upgrades to mitigate the related effects.
- 2.28 The capacity of the Tahuna Road / Lumsden Road roundabout could be potentially adversely affected by the OLL proposal, and similarly, so too could the Ohinewai Interchange intersections. Contributions to safety and

capacity upgrades may be required from OLL depending on the level of effects anticipated at the time of assessment.

Implications of the Shand Properties Limited proposed land zoning

Issue

- 2.29 Are there any transport implications if the SPL land is zoned Country Living?

My opinion and reasons

- 2.30 In my opinion, the SPL proposal is likely to result in localised transport effects with the OSP approved, in the following way:

- (a) Safe and efficient walking and cycling connectivity will be required between the SPL site and proposed OSP walking and cycling path over the expressway and railway, and proposed shared path on Ohinewai South Road.
- (b) The safety of active and vulnerable transport modes crossing Tahuna Road near its intersection with Ohinewai South Road requires appropriate consideration and assessment that takes account of the increased traffic volumes associated with OSP and pedestrian / cycling demands from SPL. Safety effects will need to be acceptably avoided or mitigated.

Adequacy of district plan provisions to deal with traffic effects

Issue

- 2.31 Do the proposed plan provisions developed by BBO adequately address any potential adverse transport effects?

My opinion and reasons

- 2.32 In my opinion, the proposed plan provisions are appropriate on the basis that they specifically target the recommended connectivity, safety, and capacity infrastructure provision as anticipated travel demand increases, to avoid or mitigate the assessed associated effects.

3. CONCLUSION

- 3.1 For the reasons outlined above, and as a result of my broader analysis, there is in my professional opinion no reason on the basis of traffic or

transportation effects why the rezoning of Ohinewai should not be approved as proposed, subject to the plan provisions proposed.

Cameron Inder

29 May 2020