MEMORANDUM

HARRIES
TRANSPORTATION ENGINEERS LTD.

To:	Sunfield Fast Track Expert Panel	**From:**	Brett Harries
cc:		**HTE File:**	epa01
cc:		**Date:**	11 November 2025
Re:	**Transportation Peer Review**		

1 Introduction

1.1 Name, Qualifications, and Code of Conduct

1. My Full name is Brett Harries.
2. I am a Director of Harries Transportation Engineers Limited.
3. I hold a Bachelor of Civil Engineering degree from the University of Auckland (1982), and have 42 years' post-graduate professional experience as a practicing specialist traffic and transportation engineer. During my career I have primarily focused on designing and assessing the traffic and transportation aspects of developments of all kinds, including residential, retail, employment, recreational and institutional.
4. I am a NZ Chartered Professional Engineer, an APEC International Professional Engineer, a Fellow of Engineering New Zealand, a Fellow of the Institute of Transportation Engineers (USA), a Life Member of the Association of Consulting and Engineering (NZ), and an Associate Member of the NZ Planning Institute.
5. I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023 (Code of Conduct for Expert Witnesses), and that I have complied with the Code of Conduct in preparing this memorandum.

1.2 Purpose

6. The purpose of this memorandum is to provide a peer review of the transportation-related aspects of the Sunfield proposal by reference to the Sunfield Fast Track process documents (including the application documents, Auckland Council's section 67 Memo, Comments from the various parties who have responded to the Application, and the Applicant's response to comments). To assist with context, I visited the site and its environs on Thursday 23 October 2025.
7. In undertaking this review, I have primarily focused on the following areas of consideration as requested by the Expert Panel:
   a) The appropriateness of the scope of the transport assessments.
   b) The appropriateness of the modelling methodology.
   c) The validity of the modelling assumptions.

d) Any requirement for sensitivity analysis.
e) Areas of agreement/disagreement between experts.
f) Issues on which decisions are required by the Fast Track Panel.

8. Within those areas of consideration, the topics examined primarily (but not exclusively) include:

a) Trip generation and modelling
b) Effects on the external road network
c) Road safety
d) Public transport
e) Walking and cycling
f) Internal transport infrastructure
g) Parking
h) Construction traffic
i) Integration with the Mill Road NoR

2 Over-arching observations

9. The proposed Sunfield development is, by any measure, a large one. Some key statistics provided in the Integrated Transport Assessment ("ITA") as prepared by Commute Transportation Consultants include:

a) 3,400 homes plus 600 retirement units giving a total of 4,000 residential units.
b) 400,000 m² of employment, healthcare and education buildings (noting however, that the employment 'zone' land area will be decreased by about 78,000 m^2 to 322,000 m^2 as a consequence of the Mill Road Stage 2A ("MRS2A") Notice of Requirement ("NoR").[1]
c) A 7.5 ha town centre.
d) A school.
e) Permanent employment for 11,000 people within the Sunfield development.

10. This proposal is unique in that the Applicant intends the achievement of a concept that is described as a 15-minute sustainable neighbourhood. As part of achieving that concept, it is intended that:

a) Car parking availability on-site will be significantly constrained as a means of reducing the opportunity for travel by car.
b) In order to further reduce the need for travel by car, the development will incorporate many of the activities that would otherwise generate demands for external travel such as employment, school, medical facilities, retail, food and beverage, and retirement villages. The intention in this regard is to 'internalise' travel demands, thereby reducing the need for travel on the external road network.

[1] Commute Comments Response Report s5.2.3 on p22 re Item 16 – 'Mill Road Effects'

c) The travel demands that are generated, both internally and externally, are proposed to be met by a new frequent bus service (Sunbus) that will both circulate on an internal loop road within the site, and will link to the Papakura and Takaanini rail stations.

d) Supplementing the Sunbus will be an internal layout that is intended to make walking, and use of other active modes such as cycling and scootering, both convenient and attractive. With the proposed layout of roads, lanes, walkable permeability within the site, and ready connectivity to the Sunbus loop, the concept of achieving internal (non-car) travel times between any two activities within the development of not more than 15 minutes appears to be potentially realisable in practice.

11. The parking restraints that are anticipated to discourage car ownership, and hence to discourage the default use of cars for routine travel demands, are proposed as follows:

a) Only one in ten residential dwellings will be provided with an exclusive on-lot parking space;

b) Residential visitor parking will be provided at a ratio of one space per ten dwellings;

c) Residential shared cars and separate parking for them will be provided at a ratio of one space per 11.5 dwellings.

d) Office parking will be provided at a maximum of one space per 300 square meters (sqm) of office space.

e) Employment activities such as manufacturing / warehouse / industrial will have parking provided for at a maximum of one space per 500 sqm.

12. In general, and as described in the ITA, these parking rates will result in car parking supplies that will be about 10% of those typically anticipated for the activities proposed under normal circumstances. (It is noted that no information is provided regarding parking for other proposed activities such as retail, education, etc.)

13. Through the combination of on-site parking constraint, provision of frequent and convenient Sunbus circulation, and connectivity to rail, an on-site layout that encourages walkability and use of active modes, and an on-site activity mix that achieves a level of self-sufficiency that will assist to internalise travel demands, the Sunfield development is intended to be capable of achieving a uniquely high level of transportation sustainability, which in turn should assist to manage its external traffic impacts.

14. Sunfield's transport sustainability objective is admirable, and is in general alignment with Auckland's transport policy directions regarding the achievement of a more sustainable transport future. However, as the first development of its kind in New Zealand, and given its scale and location in an outer suburban location where existing non-car transport options are inherently limited[2], any adverse transportation

[2] Currently, the only realistic means of non-car travel to the site consist of bus routes 372, 365, and the proposed 364 route. However, all these routes require walk distances between the nearest bus stops and the site that are either at the limit of, or beyond, a convenient walk distance.

impacts that occur beyond those anticipated by the ITA due to misalignment between base travel assumptions and what occurs in practice, will be amplified by the combination of scale, complexity and context of the proposed development.

15. Given that a development of this nature is unique, with no known domestic or even international exemplars, this peer review is necessarily focused on the extent that confidence can be had in the assumptions made and the analyses undertaken, with the objective of ensuring that the Expert Panel is sufficiently informed regarding the risks of either miscalculated outcomes or unintended consequences.

3 Appropriateness of the scope of the ITA

16. I consider that the ITA has been properly scoped and prepared, and addresses the matters that should be considered when assessing a development of this nature.

17. It is noted that the ITA did not initially address the Mill Road ("MRS2A") Notice of Requirement ("NoR"), because it was not known of at the time of preparation of the ITA. The implications of MRS2A have however, been subsequently addressed and agreed with New Zealand Transport Agency ("NZTA"). Otherwise, there are no other relevant transportation matters that have not been addressed by the ITA.

18. Having said that, there are some areas of the ITA that were addressed, but could have been addressed in more depth. Of particular note in this regard are the management, control and implications of any potential off-site parking spillover into adjacent neighbourhoods.

4 The appropriateness of the modelling methodology and validity of modelling assumptions

19. For the nature and scale of the proposal, and its inherent complexities (including activity mix; constrained parking; lack of effective existing non-car transport support; and the use of the proposed Sunbus service), the nature of the modelling initially undertaken in the ITA was adequate, albeit somewhat rudimentary.

20. However, any concerns regarding the rudimentary nature of the initial modelling undertaken were dispelled with the later ability to utilise the more sophisticated NZTA SATURN model as developed by the Auckland Forecasting Centre ("AFC") for assessment of the MRS2A NoR.

21. One of the key inputs into any model is trip generation. As will be described in more detail in Section 5 to follow, the initial modelling undertaken tested what I consider to be an ambitiously low trip generation total of 1,112 vehicles per hour ("vph"). Had this trip generation total been taken forward, I would have been concerned as to its robustness, particularly in the absence of any sensitivity testing of higher values.

22. This concern was ameliorated by the adoption of what appears to be an agreed higher trip generation total of 3,000 vph. I am significantly more comfortable with the 3,000 vph trip total than I was with 1,112 vph as originally proposed.

23. While the use of the AFC model enables an enhanced understanding of future road network effects, I consider that there may be two areas where more detailed modelling assessment may have assisted, i.e. relating to:

    a) Testing of the implications of the high volume of Sunbus trips that will be likely between the site and the Takaanini and Papakura rail stations (especially if Ohmio Automation shuttles which currently operate as 20 seat vehicles are used as described in the application).

    b) Testing in relation to the local road network effects that would be associated with the loop road diversion onto Cosgrave Road (given that there appears to be some uncertainty as to if and when the loop road is made continuous).

24. Overall however, an appropriate level of confidence can be had regarding the use and outcomes of the AFC model.

5 Trip Generation

25. As previously noted, the ITA determined the trip generating potential of the completed development to be 1,112 vehicles per hour.[3] This figure was arrived at by considering:

    c) The constrained residential parking rate of 1 space per 10 households with some internalisation of trips will result in a peak hour trip generating potential that will be 20-25% of 'typical', resulting in a residential trip component of between 400 and 640 vph. Working backwards from the end result suggests that the 'typical' residential trip rate as adopted is 0.5 trips per household. It is noted that this is at the lower end of the 0.5-0.65 trips per household range that is applied to "medium density residential flat buildings" in the 2011 'RTA Guide'[4], and is below the more recent value of 0.68 trips per household per the 2025 update to the RTA Guide[5].

    d) For trip generation due to the office and warehouse distribution employment activities, the ITA again assumes that the parking constraint to 10% of normal, along with internalisation of trips (i.e. residents who also work in the employment activities), will result in a peak hour trip generating potential that will be 20%-25% of typical, resulting in a employment trip component of between 394 and 545 vph.

    e) With the medical facilities, it is again assumed that parking constraint to 10% will lead to a significantly reduced trip potential that is 15-20% of typical resulting in a medical trip component of between 100 and 134 vph.

26. Adding the above three main activity types results in a total peak hour range of between 894 and 1329 vph. Rather than conservatively adopting the upper end of that range as might normally be expected, the ITA has then averaged the range to

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3 ITA s9.1.1.1, pp 35-38

4 Roads & Traffic Authority of New South Wales (Now Transport for New South Wales) "Guide to Traffic Generating Developments" Version 2.2, 2011

5 Transport for New South Wales "Guide to Transport Impact Assessment" Version 1.1, 2025

get 1,112 vph which it has then adopted as the trip total for its assessments of road network functionality.

27. It is further noted that the ITA also describes an analysis of peak trips by undertaking a "mode share analysis".[6] Even notwithstanding some rather ambitious assumptions about mode share (as are noted below), this analysis resulted in a peak hour trip generating potential of 1,271 vph, which is near to the upper end of the range determined using discounted trip rates. This should perhaps have led to reconsideration of adopting the average of the range based on trip rates.

28. As noted, the mode share analysis includes several ambitious assumptions that would have been worthy of further consideration and testing in the ITA, particularly as some have quite significant potential implications.

29. Of particular note in this regard is the assumption that 50% of all employees in Sunfield will also live in Sunfield. The ITA refers to Sunfield providing permanent jobs for over 11,000 people.[7] With 3,400 'working' households (i.e. 4,000 minus the 600 retirement units), for 50% of the workforce to be resident implies an average of 1.62 residents from every household to be employed within the Sunfield site. While not impossible, it does seem a particularly ambitious assumption.

30. Given the practical unlikelihood of achieving anywhere near 50% internalisation of employment, the demand for external travel generated by the employment activities will inevitably be appreciably higher than considered by the ITA, and in this regard is considered one of the key risk areas when determining:

    a) The ability of the external road network to accommodate the greater extent of Sunfield-generated traffic than has been assumed, especially with regard to the 'doubling' effect associated with employees who are dropped off and/or picked up, (i.e. as 'kiss-and-drop'; taxi or Uber) thereby generating a two-way trip as distinct from a one-way trip if parking on-site.

    b) The effectiveness and capacities of the Sunbus services to/from the Papakura and Takaanini rail stations. Even if accommodating just another 1,000 employee trips in a peak hour, that is the equivalent to 25 full 40-seater buses, or 50 full 20-seater Ohmio Automation shuttles.

    c) The implications of any residual parking demands generated by employment activities (that are unable to be met by the 10% parking provided on-site and by Sunbus travel), on surrounding residential areas. Even if assuming that 50% of employees live on-site (which as noted, appears to be an unrealistically high proportion), it would be fanciful to suggest that all the remaining 5,500 employees will have the means and/or opportunity to use the Southern Train to then link with the Sunbus service to Sunfield. Inevitably, many will prefer, or have no choice other than, to park off-site in surrounding residential areas, the extent of which has the risk of being non-trivial.

31. It is further noted that the ITA provides a 'sensitivity calculation' that considers a smaller proportion of travel by public transport, and a commensurate increased

6 ITA s9.1.6, pp 37-38

7 ITA s5.1, p20

proportion of travel by car.[8] This sensitivity analysis results in peak hour trip generating potential of 6,000 vph. However, this calculation appears to have been provided for interest only, as there is no subsequent sensitivity analysis of that trip total on the surrounding road network.

32. While it is accepted that predicting travel demands for a development that has no exemplar in New Zealand is a particularly difficult task, the fact that it is so difficult and uncertain would seem to make it all the more important that all input assumptions are thoroughly tested by way of meaningful sensitivity testing. This was not the approach of the ITA however, where what would seem to be overly ambitious assumptions have been simply adopted, thereby resulting in the testing of projected traffic demands that sit close to the bottom end of the values considered.

33. In my opinion, the adoption of 1,112vph for network assessments carries a high degree of risk of being an under-estimate of what might ultimately occur in practice.

34. In response to what appeared to AT to be the adoption of an under-estimated level of generated traffic demand, AT engaged Beca to undertake a review of the ITA which included a review of trip generation.[9] The Beca review of trip generation made reference to a recognised methodology that involves reference to published trip rates that were then adjusted downwardly to address trip-linking and trip internalisation. The Beca methodology resulted in peak hour total traffic demands of 3,041 vph in the morning peak, and 3,100 vph in the evening peak.

35. Having compared the ITA and Beca trip generation methodologies, I consider the Beca calculations to be more credible, and will carry less inherent risk of having been under-estimated. In my opinion, the values that have been arrived at are more likely to compensate for:

    a) Residents who do not follow the Sunfield concept, and who own vehicles and generate car trips to and from Sunfield by parking off-site in adjacently surrounding residential streets, (i.e. producing outbound trips in the morning peak and inbound trips in the evening peak);
    b) Employees who for a range of reasons choose not to, or who do not have the opportunity to, make use of the Southern Train and/or Sunbus for travel to/from work, and instead drive a car and park off-site in adjacently surrounding residential streets, (i.e. producing inbound trips in the morning peak and outbound trips in the evening peak); and
    c) Residents and employees who generate two-way car trips in both the morning and evening peak hours as either kiss-and-drop, taxi or Uber.

36. I note that while the Beca calculations of peak hour trips result in generated traffic demands that are 1,900 vph higher than the trip rate adopted in the ITA, it is about 3,000vph less than the ITA's sensitivity calculation of 6,000 vph.

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8 ITA s9.1.7, p38

9 Appendix A 'Trip Rate Methodology' of Annexure 3 of Auckland Transport's Specialist Memo prepared by Beca, 30 July 2025

6 Network Modelling

37. The ITA modelling of the effects of its generated traffic calculations was undertaken by distributing its calculated peak hour traffic demands to intersections surrounding the Sunfield site using predominantly 'engineering judgement'. I note that the traffic distribution that was produced assumes that the internal loop road is a complete one, whereas I understand that completion of the loop is not a certainty, and that it may in fact require use of 'external' intersections at Cosgrave Road / Parahau Road / Road 4 and Cosgrave Road / Walters Road / Hamlin Road (Road 6), and hence a potentially different external distribution of traffic demands as a result.

38. With reference to the allocation of vehicle trips onto the road network, the ITA refers to having examined a 'worst case scenario'. However it was not possible to reconcile that statement with the distributed traffic flows that are illustrated in its Figures 9-2 and 9-3, which if I have interpreted correctly, appear to show total traffic demands into and from the Sunfield site that are less than calculated as the generated traffic demand (for example 911 vph shown in Figure 9-2 (AM Peak hour) which is 18% less than the calculated trip generation total of 1,112 vph).

39. Notwithstanding this discrepancy, the distributed traffic demands have been analysed for individual intersections surrounding the site, with each intersection being analysed discretely using the intersection analysis package SIDRA. From those analyses, nine intersections were identified as requiring either development if new, or enhancement if existing. The MRS2A NoR was not known at the time of this modelling, so its implications were not included the assessments undertaken.

40. While the SIDRA modelling of the intersections immediately surrounding the site is useful, it does not include every intersection within the sphere of potential influence of the development, (especially as applies to Airfield Road, Old Wairoa Road and Clevedon Road).

41. With the NZTA assessments of MRS2A NoR, a more sophisticated SATURN transport model of the area was developed by the AFC. The opportunity was therefore taken to include the Sunfield development in that modelling.[10] The Beca peak hour trip total (nominally 3,000vph) for the Sunfield development was subsequently adopted for inclusion in the traffic modelling. I consider the use of the Beca calculated trip generation total to be a more appropriate level of demand to be assessed in the modelling. It is a demand volume that still retains a significant level of constraint (being 50% of Commute's 6,000 vph 'sensitivity' trip generation calculation), while carrying an inherently reduced level of risk of unintended consequences.

42. I consider the spatial extent of the AFC model to be sufficient to establish the road network impacts of the proposal.

43. Having reviewed the 16 intersections that were analysed by Commute in more detail using the AFC model and SIDRA, I am comfortable that with the proposed upgrading to the intersections that require upgrading, the road network in general

[10] Annexure 1 to Auckland Council Specialist Memo by Beca (30 July 2025); and "Modelling Memo – Sunfield / Mill Road Stage 2 NOR" attached to Commute "Specialist Comments Response" 14 October 2025

will retain an appropriate level of service following completion of Sunfield alongside MRS2A.

44. I do however, have two caveats in relation to the network modelling:

    a) It does not include the effects of Sunbus movements, either along Alfriston Road and Clevedon Road, or on Cosgrave Road. I note that Sunbus travel on the external road network could be comparatively significant, especially if the smaller Ohmio Automation 20-passenger shuttles are used, (which will require double the number of bus movements than have been assessed in the ITA). In particular, no consideration appears to have been given to the implications of the internal loop road not being able to be completed as intended. If the loop road remains discontinuous, there will be a significant addition of turning vehicles, including all bus movements, at the Cosgrave Road / Walters Road / Hamlin Road (Road 6) intersection, and the Cosgrave Road / Parahau Road / Road 4 intersection.

    b) It does not include modelling at interim stages, particularly at the development trigger points for:

        - the Sunbus,
        - significant intersection upgrades, or
        - preparation of a new ITA[11].

        I note in this regard that there would appear to be little, or no, science behind any of the trigger points from the perspective of road network impacts, (rather, the upgrades appear related to the number of proximate dwellings to be constructed).

7 Road Safety

45. Based on the plans currently available, it is apparent that appropriate consideration has been given to road safety within the development, both in terms of the intended layouts and use of internal roads (including the separated bus way), and in terms of the movement of pedestrians, cyclists and other micro-mobility users. With regard the latter point, the layout proposes good permeability by way of off-road laneways and pathways that in the main will enable good separation of active traffic movements from vehicular traffic movements.

46. The safety of road users external to the site will in the main be addressed by the various new and upgraded intersections as described by Commute.[12]

47. However, the safety of pedestrians and cyclists on the external road network associated with the Sunfield development has been only superficially considered, especially in relation to cycle travel between Sunfield and the Papakura and Takaanini rail stations and town centres.

[11] 890 dwellings per proposed Condition 114; the various dwelling triggers per proposed Conditions123 and 176; and especially the 1,350 dwelling trigger per proposed Condition 123A

[12] Commute “Modelling Memo” dated 14 October 2025 as attached to Commute “Specialist Comments Response”

48. In relation to external pedestrian travel and cycling, the proposed conditions[13] refer only to upgrading the footpath along the northern side of Old Wairoa Road site frontage; and the provision of 'active mode facilities' on Cosgrave Road between Walters Road and Clevedon Road. Both these works are on the immediate site frontage and do comparatively little to assist active mode road users to connect with activities beyond the site.

49. In this case the active mode connections to Papakura and (to a lesser extent) Takaanini will be crucial, particularly since:

    a) the majority of residents and employees will not have the ability to drive to/from Sunfield;

    b) The existing and proposed bus routes in the vicinity (routes 372, 365 and 364) are not within convenient walk distance of the site, and certainly not within walking distance of the employment areas, and have limited practical capacity (i.e. maximum of 40 people once every half-hour). In terms of walk distances to the nearest bus stops, from the closest residents they are about 400m for Route 372; about 570m for Route 364; and about 1.7km for Route 365, (noting that these are the minimums – most residents will be further). The walk distances from the nearest points within the employment area are about 1.5km for Route 372; about 1.6km for Route 364; and about 2.7km for Route 365.

    c) The Sunbus will not be operational until 890 dwellings have been constructed.[14]

50. Clearly, the need for good quality and safe active mode travel to / from Papakura (and to a lesser extent Takaanini) are not just peripheral 'nice-to-haves', they are fundamental to the transportation acceptability of the development. I therefore agree with the various observations made by Auckland Council and AT that the ITA and the proposed conditions are deficient in not addressing active mode connections to / from Papakura and Takaanini.

51. I therefore recommend that the conditions should also include, from the outset of occupation of either residential or employment developments on the site, a greater degree of cyclist safety and coherency, at least to the Papakura Train Station. As a minimum, and from the outset, it is suggested that the active mode measures as listed below will be necessary to meaningfully address external travel demands.

    a) Traffic calming on Old Wairoa Road to lower speeds in order to improve cyclist safety.[15]

    b) Upgrade, in consultation with AT, the southern side of Airfield Road from the northern-most corner of the site to the northwestern corner of 139 Airfield Road.[16]

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[13] Proposed conditions 123 and 176

[14] Proposed conditions 123 and 176

[15] Per the ITA recommendation s7.1.2, p31, (last bullet point near bottom of page)

[16] Per AT recommendation, Annexure 7 of Auckland Council Specialist Memo (Neil Stone), para 107, p22; and para 49(b) p13

c) Upgrade of active mode facilities on Cosgrave Road between Airfield Road and Clevedon Road[17] (i.e. not just between Walters Road and Clevedon Road as per the 15 October 2025 draft conditions)

d) Investigate and undertake, in consultation with AT, the achievement of meaningful enhancements to cycling coherency and safety between the site and the Papakura Rail Station;

e) Investigate and confirm with AT the cycle storage capacity at the Papakura Rail Station.

8 Internal Transport Layout

52. It is apparent from a 'big picture' transport planning examination of the plans provided, that the overall layout provided will achieve good levels of permeability and accessibility. For closer examination of the details in relation to geometric design and safety, I defer to the Technical Note prepared by Martin Peake of Progressive Transport Solutions.[18]

53. Most internal traffic will be carried by the proposed loop road that is generously dimensioned, and includes 3.5m traffic lanes in each direction (with each direction separated by a flush median in the parts of the loop road that will be used by industrial traffic), a separated two-way bus carriageway, a separated cycleway, footpaths, and berms.[19] At the detailed design stage, it will be necessary for further thought to be given to the loop road intersections with other roads, as designing signalisation for what are in essence side-by-side two-way roadways will be particularly difficult to achieve without severely compromising either efficiency and/or safety.

54. Further, (and as previously noted), it appears that there is some uncertainty regarding if / when a portion of the Loop Road between Hamlin Road (Road 6) and proposed Road 4 can be constructed. If that portion of the Loop Road cannot be constructed, it will require a deviation out onto Cosgrave Road. As noted, the ITA does not appear to have considered the effects of such a deviation on either the performance of the two intersections onto Cosgrave Road; nor on the efficiency and attractiveness of the loop, especially when used by buses. Intuitively, it would seem that with the deviation, bus capacity within the loop will be compromised by the inevitable platooning of buses that will be associated with any turning delays at the two Cosgrave Road intersections.

55. The Loop Road is intended to be supported by a network hierarchy of residential Collector Roads, Local Roads, Laneways, Commonly Owned Access Lots and Jointly Owned Access Lots. These will provide high levels of permeability within the site that would appear to be appropriate to the character of the neighbourhoods and the intended constrained use of cars.

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[17] Per AT recommendation, Annexure 7 of Auckland Council Specialist Memo (Neil Stone), para 49(e), p13

[18] Auckland Council Specialist Memo – Annexure 2 – Progressive Transport Solutions Limited

[19] ITA s5.2.1, pp 20-23.

56. Permeability for active modes is provided throughout, at levels that are suitable for a high-density residential neighbourhood.

57. It is noted that the memo prepared by Martin Peake includes a number of comments regarding internal active mode safety[20]. These include in relation to:

    a) Improved and more crossing facilities, especially on Road 1, Road 2, Road 5 and Road 6;

    b) Crossing facilities at all bus stop locations;

    c) Separated cycle paths in preference to shared cycle and pedestrian paths;

    d) Separated paths on Road 6 to provide consistency with the facilities on Walters Road'

    e) Use of signalised crossings on Road 6 in preference to the currently proposed zebra crossing;

58. I concur with the above recommendations.

59. It is also noted that the specialist memo prepared by Neil Stone of AT identifies some additional internal active mode links that are worthy of further consideration. These are illustrated in his Figure 4.[21] I concur with his recommended additions.

9 Parking

60. Parking constraint within the development (along with the Sunbus service) is one of the two key levers available to the Applicant to achieve the vision of a 15-minute sustainable neighbourhood.

61. Parking constraint on the scale proposed in this case has never been attempted before in New Zealand. Smaller scale developments have been implemented, but generally in locations that are immediately adjacent to, and/or highly integrated with multiple high capacity and efficient transport systems, such as occur within town centre / city centre locations or within transit oriented / transit adjacent developments.

62. As noted, in this case, the non-car transport options available are very limited by comparison, (other than the proposed Sunbus service which is intended to commence following the development of 890 dwellings). With the highly constrained ability to travel by car due to the parking constraints on-site, and with the only meaningful means of alternative travel being largely confined to the Sunbus service, there will consequently be a significant risk of residents and employees parking where not intended, being either internal on-site in areas where they should not park, or in neighbourhoods (predominantly residential) adjacent to the site.

63. Any off-site parking in adjacent neighbourhoods would in effect result in the undesirable externalisation of parking impacts and consequences to the detriment of neighbouring areas. While it is acknowledged that the Unitary Plan has removed

[20] Auckland Council Specialist Memo, Annexure 2 – Progressive Transport Solutions Ltd Memo - Martin Peake, 29 July 2025, section 5.3

[21] Annexure 7 of Auckland Council Specialist Memo (Neil Stone), p11

requirements for parking minima, it is assumed that its intent was not to externalise parking demands to the detriment of others.

64. With regard to on-site parking beyond designated parking spaces, a response provided within the Section 67 Response Tracker[22] lists the measures available to the applicant to manage parking within the site, including 'design-led restrictive pavements', road marking and signage, and 'enforcement' by Residents Societies and Incorporated Societies.

65. With regard to parking beyond the site, it is at this stage impossible to predict what the quantum of any off-site parking demands might be. However, given that the on-site parking supplies for 4,000 dwellings and the 5,500 employees (at least) who will not be living on-site, will be provided at 10% of 'normal', it is inevitable that there will be some level of demand for off-site parking, and that it has the potential to be significant.

66. The ITA has addressed the potential for off-site carparking[23], and acknowledges that potential with the statement:

> "*With a significantly constrained parking provision there is a strong possibility of residents (and potentially workers) parking in existing residential area outside Sunfield and then walking / taking the public transport available to / from Sunfield to their car.*"

67. The ITA identifies the area as shown below[24] as being most susceptible to off-site parking, and notes that:

> *"These areas will need to be monitored to ensure no residents from Sunfield park off-site.*
>
> *In this regard it is noted that:*
>
> - *Covenants (or similar) can be placed on Sunfield homeowners / residents with regards to parking (i.e. not having a car); and*
> - *There are measures such as resident parking schemes that can be implemented by Council to ensure only local residents park in the areas shown in* [the diagram below]*."*

22 Auckland Council Specialist Memo, Annexure 25: Section 67 Response tracker, item 2.3.1

23 ITA, s12.3, pp72-73

24 ITA Figure 12-1 from s12.3, p73

68. The ITA identifies two proposed mitigation measures to address the potential for externalised parking impacts as follows:

    a) Covenants on homeowners / residents to require that they do not own a car.

       However, it is anticipated that this will likely to be largely ineffectual as a mitigation against off-site parking, and certainly almost impossible to enforce. It would also do nothing to prevent any employees from the Sunfield site from parking on-street.

    b) Resident parking schemes in areas surrounding the site.

       However, resident parking schemes are not favoured by AT. The Section 67 query from AT in this regard noted that:

       "AT does not consider that implementing parking management in neighbouring suburbs as a result of the high level of spillover parking is viable. It is also not an easily supported solution for AT. The following is also noted by AT:

       a) Parking restrictions within the Site and adjacent neighbourhoods would require significant resources for AT to continually enforce (and physically maintain). Essentially the Applicant will require AT to ensure the feasibility of the Applicant's proposal with regard to the proposed lower car ownership. This approach is generally not supported by AT.

       b) AT can also note that the proliferation of parking restrictions can lose its adherence value over time as resident becomes overwhelmed and frustrated by significant number of parking rules.

       c) The legality and enforceability of banning car ownership is also questioned. This also does not seem to be a condition of the proposal due to sheer number of infringements.

d) Limited consideration is given to factors such as rain, wind or people requiring medical visits that make it difficult to walk or access amenities/bus stops if car ownership is only at 10%.

e) Plan Change 79 is now operative and the applicant should include an assessment against its provisions."

69. It appears to be common ground that despite the Sunbus service, off-site parking has a high probability of occurring. In my opinion however, given that covenants on residents (even if possible) would likely be ineffectual to avoiding off-site parking; that any such covenants will do nothing to manage employee parking; and that AT is unlikely to impose, maintain and enforce a resident parking scheme over such a large area, then some other measures will be necessary to ensure that the likely externalisation of parking demands due to deliberately low on-site parking supplies does not impact on surrounding neighbourhoods.

70. When considering both resident-based and employee-based potential parking demands, it is reasonably possible that the extents and durations of off-site parking may be significant, meaning that the impacts to neighbourhoods within the area shown in the diagram above will be potentially significant.

71. In this regard it is known from the now numerous, and much less substantial, examples in Auckland of on-site parking under-supply generating off-site parking effects, that those situations do cause angst for neighbours, and do adversely impact on amenity within the affected neighbourhoods.

72. Currently there are no conditions proposed to address off-site carparking. Accordingly, in order to ensure that off-site parking due to the Sunfield development will not detrimentally impact on residents of surrounding areas, it would seem prudent that a condition is imposed that requires off-site parking monitoring within the area shown in the diagram above. The monitoring would require baseline measurements prior to any occupation of the Sunfield site, then regular monitoring at progressive stages of development.

73. Should it be found that adverse on-street parking impacts are occurring within neighbourhoods, then practical measures to address those impacts will need to be identified and implemented by way of an ITA. Some suggested wording for the condition is provided as proposed Condition 112D in Section 15 below.

10 Public Transport

74. As previously noted, the existing site could not be described as being efficiently or effectively serviced by public transport.

75. There are two existing, and one proposed bus routes that operate in the area, (being routes 372, 365 and 364). As described in paragraph 49 above, they are significant walk distances away from the site, most especially when considering walk distances to/from the employment area. These bus routes generally operate at half-hourly headways using 40-seater buses. Their ability to carry large passenger numbers is therefore very limited. It is also noted that they do not operate 24-hours/day, with generally no services provided between midnight and 5am. In relation to the Sunfield proposal, these services would at best provide a

mildly effective feeder to and from the Papakura and Takaanini rail stations and town centres.

76. The rail stations at Papakura and Takaanini are both on the Southern Line. The Southern Line serves a comparatively narrow corridor between Pukekohe and the Auckland CBD via Manukau City, with a link available to Auckland Airport from Manukau City. Typically, the trains do not operate between midnight and 5am (although night hours are extended at weekends).

77. The existing bus and rail services working together (i.e. with transfers), will provide a moderate level of regional access. Wider access to the region would generally require further transfers within Auckland's CBD. For most people within the southern region however, unless they already enjoy good accessibility to the Southern Line corridor, they would likely describe public transport accessibility to the Sunfield site as being poor. In this regard the subject site contrasts with locations where high levels of parking constraint could work well, such as in a city centre / city fringe location where there are usually multiple transport options with multiple routes that provide access to multiple destinations in a more convenient and efficient manner.

78. The proposed Sunbus will assist with public transport accessibility, but only insofar that it will provide a higher capacity link between the Sunfield site and Takaanini and Papakura. To access the Southern Line, it will still require a transfer. Transferring between services is recognised as one of the impediments to regular public transport use.

79. The extent that the Sunbus service can make travel between the Sunfield site and rail stations easy, efficient and attractive is dependent on a number of factors, some of which are uncertain at this stage. These factors include:

    a) Frequency and capacity. Based on 40-passnger vehicles, the ITA refers to 400m headways between buses, (equivalent to one every 36-seconds). If however, Ohmio Automation 20-seater shuttles are used, this would require a 200m headway (one every 18 seconds) to achieve the same capacity. (It is noted that these are based on what is anticipated for the ultimate development - interim operations would obviously be less than described).

    b) Whether a public facility. If the Sunbus service is available to the public, this may influence capacities and travel times.

    c) If an autonomous vehicle fleet is utilised, whether it will be subject to any particular restrictions or controls, (such as a maximum speed for example).

    d) Whether the Sunfield internal loop road remains discontinuous or not. This will affect travel times on the loop because of two signalised intersections that will have to be negotiated.

80. Overall, it is considered that the Sunfield site, even with the Sunbus being fully operational, will achieve a reasonable, but not overly high level of regional public transport accessibility.

11 Travel Demand Management Plan

81. Section 11.5 of the ITA describes the possibility of a Travel Demand Management Plan ("TDMP") for the employment activities.[25] It describes:

> *"The Travel Plan could be continuously updated and refined based on changes in the area (e.g. changes in bus routes, congestion area), and could consider methods such as minimising freight / deliveries to the area during times of peak network congestion.*
>
> *As detailed earlier in the assessment, it is envisaged that a key part of the Travel Plan would be the requirement for 75% of the movements relating to the warehouse distribution operation to be confined to off-peak only (being the hours outside of Monday to Friday 7-9am and 4-6pm).*

82. The recommendation for a TDMP was carried through to the draft Conditions of Consent as Condition 130 as follows:

> *"A Travel Plan shall be required for each business within the Employment Precinct and Town Centre Precinct. The Travel Plan shall set out the measures that each business will employ to:*
>
> *a. Maximise the use of active transport modes, public transport, carpooling, ride sharing and micro-mobility.*
> *b. Minimise private vehicle trips and private carparking availability.*
> *c. Promote 75% of vehicle movements relating to warehouse distribution operations to be confined to off-peak hours only (i.e. outside the hours of 7-9am and 4-6pm Monday to Friday).*
>
> *Each travel plan is required to be submitted to the Council prior to the occupation of the building for each business."*

83. I agree that business within the Employment and Town Centre precincts should be required to produce a TDMP, but not in the form as described by proposed condition 130.

84. In this regard I note that TDMP's can sometimes be useful, but usually only to a point. Most typically, they are produced as a sustainability tick-box exercise; and then promptly put in the bottom drawer and forgotten about.

85. My experience of effective TDMP's when individual businesses have no real ownership of the overall outcomes being sought is that measurable targets / defined outcomes are necessary; there must be regular or even continuous monitoring and measurements against those targets; they should be independently reviewed; and review recommendations made if targets are not achieved must be enforced by defined actions and/or consequences.

86. The draft Condition 130 achieves none of these characteristics. Indeed, the only potentially measurable target was proposed in the ITA as a requirement that 75% of the movements relating to the warehouse distribution operation to be confined to off-peak only (being the hours outside of Monday to Friday 7-9am and 4-6pm), whereas this was watered down in the draft Condition 130 to promoting that target.

87. If TDMP's are to be utilised, (as I believe they should), they need to spell out clearly what transport sustainability targets are being sought, how they will be achieved, who and how they will be measured, who will assess / review them against the

[25] TAI, s11.5, pp70-71

targets (preferably Council), and what actions will be taken by whom if the targets are not achieved. This will be quite important for the warehouse distribution operations, who should have the targets as already referred to as enforceable requirements.

88. With other activities within the Employment Precinct and Town Centre Precinct, the travel plans should be primarily (but not exclusively) focused on employee travel.

12 Construction Traffic Management

89. Construction traffic management is addressed in Section 13 of the ITA. It is understood that an access road for construction-related vehicles will be provided from the Cosgrave Road frontage of the site. As the site is a large one that will be constructed in stages, it is anticipated that construction activity will occur internally, with little need for off-site construction effects.

90. It is noted that draft conditions 20 and 21 refer to the requirements of a construction traffic management plan. I am comfortable that the conditions address the matters that require to be addressed.

13 Summary of Transportation Risks and Issues

91. In essence, the proposal anticipates a new town within an outer suburban area of South Auckland. The transportation objective of the 'new town' is to encourage its transportation sustainability by constraining the ability for residents and employees to travel by car, encouraging travel by active modes and its own bus service, and by providing complementary activities within the development that assist to internalise its own travel demands. In principle, and from a broad transportation planning perspective, this concept is admirable and in line with current transport policies for achieving a more sustainable transport outcome for Auckland.

92. Having said that, the mechanisms for achieving the desired transportation vision carry the risk of being overly ambitious, and prone to potential outcomes that could not only impact on the overall success of the development, but more concerningly generate adverse impacts on the surrounding community.

93. It is considered that the key risks associated with the development are as follows:

    a) Upon completion, if the non-car travel options are not sufficiently attractive to residents, and if vehicle ownership by residents cannot be adequately controlled, then the associated risk is that carparking will occur in surrounding neighbourhoods to the enduring detriment of those communities.

    b) Upon completion, if the combined abilities of the Sunbus and trip internalisation are insufficient to off-set the demand for employee car travel to/from the site, (noting that employment activities that will likely dominate external travel demands), then those employees who do not live on-site or in close proximity, or who do not have the ability to get access to the Southern Line, will either have to drive to/from work, or be dropped off (which results in a double vehicle trip). There is a more than reasonable probability that

the 10% parking supply for employment activities will be insufficient to off-set these additional external car travel demands. The associated risk is that carparking will occur in surrounding neighbourhoods to the enduring detriment of those communities.

94. Staging risks relate primarily to activity mix balancing within the approximately 15-year development period. If there are significant mis-alignments in the balancing of activities, (especially as relates between residential and employment), and/or an imbalance between generated transport demands and available transport provisions, this could either lead to greater private vehicle use than anticipated, and/or a poorly-functioning development. This risk relating to travel expectations and car use may be difficult to reverse at a later stage. By way of one example of this, if dwellings are developed ahead of employment, then residents of those dwellings are inevitably going to find employment elsewhere, thereby removing them from the pool of residents that will assist to internalise trips as employment activities do come on-stream.

95. On-site risks associated with internal overspill and/or internal illegal parking in residential areas appears to have been well addressed.

96. On-site risks associated with internal overspill employment parking have been less thoroughly examined, but is anticipated to be addressable (albeit at the risk of parking in nearby off-site residential neighbourhoods) by way of design measures such as apply in residential areas, and possibly employment agreements.

97. There is also the potential interim parking and travel demand issue associated with employment activities being developed prior to the Sunbus becoming operational. If this was to occur, then it may require some additional measures in order to manage the additional travel and parking demands that will be generated. The existing bus routes will simply not suffice, both from a capacity perspective, and because they will be too remote from the employment areas to be of any practical use (the nearest bus stop will be 1.5km). The interim measures might involve either a shuttle service for employees, and/or more on-site parking.

98. On-site risks associated with traffic management and control, active mode movement and safety, and overall transport capacity appear reasonably well thought through at this stage, but will require further input in association with AT as designs are further developed and refined. The matters described in the Auckland Council Specialist Memo – Annexure 2 provides a good starting point [26]. Three particular areas that I consider will inevitably need close examination include:

    a) Pedestrian safety, especially at desire-line crossing points.

    b) The need for intersections on the Loop Road to safely and efficiently handle the separate two-way bus lanes and general traffic lanes, (i.e. essentially side-by-side two-way roads).

[26] Auckland Council Specialist Memo – Annexure 2 – Progressive Transport Solutions Limited (Martin Peake), 29 July 2025

c) The possible implications to Sunbus efficiency and intersection capacity on Cosgrave Road associated with the possibility that the Loop Road remains discontinuous.

99. Off-site risks in relation to road network capacity, particularly in relation to key intersections, have been addressed by the latest intersection assessments that utilise the AFC model. I am comfortable that the assessments have been competently undertaken, and that the identification of, and proposed modifications to, under-performing intersections are appropriate. However, I do note the point previously made that no specific assessments have been undertaken of the Cosgrave Road intersections with Hamlin Road (Road 6) and Road 4 to address the possibility that the Loop Road remains discontinuous.

100. The off-site risks in relation to road safety have not been addressed in any particular depth. My particular concern in this regard relates to active mode travel between the site and Papakura (and to a lesser degree Takaanini)[27]. While the ITA has proposed improvements to Cosgrave Road between Walters and Clevedon Roads, and a short section of the eastern end of Walters Road, little consideration has been given to the remainder of the routes. I consider that cyclist connectivity to Papakura (and to a lesser extent Takaanini) will be critically important during the initial stages of development prior to implementation of the Sunbus, when cycle travel will be one of the few non-car travel options available to residents given the limited ability of the existing bus services to adequately satisfy travel demands. Even beyond the initial stages, such connectivity will also be important to the completed development. In my opinion more thorough assessments of both routes (especially to/from Papakura) are necessary, with enhancements provided for accordingly.

14 Transportation Decisions Required by the Fast Track Panel

101. When viewed from a purely transportation perspective, it is my opinion that the Sunfield proposal is a supportable one. It is big, bold, worthy and ambitious, but it is also not without its risks. From the Panel's perspective, a decision will need to be made as to whether something this ambitious is actually achievable in the manner that has been described; and whether its potential off-site impacts can be managed. With regard the former, there is no fundamental reason that I can see why the vision cannot be achieved. With regard the latter, I consider that it will be possible to manage off-site impacts provided more and stronger conditions are in place.

102. A decision will be required on the acceptability of generated traffic impacts on the performance of the wider road network. The AFC modelling recently undertaken suggests that it will be when modelling of 3,000vph was considered. This level of demand is about half that of a comparable development that does not have travel demand constraint (through parking constraint), so in that regard the validity of applying 3,000 additional trips is dependent on how successfully Sunfield's

[27] On the basis that when compared to the Papakura Station, Takaanini Station has a greater travel distance from the initial stages of development in the southern portion of the Sunfield site; it has less available secure cycle parking; is less well connected to town centre activities, and is less well connected to bus interchange facilities.

transportation sustainability vision is achieved. In my opinion, the 3,000vph as modelled is appropriately balanced insofar that it recognises a significantly reduced travel demand while also recognising the presence of uncertainties; and the modelling undertaken does demonstrate that flows of that level can be accommodated with the network improvements that are proposed.

103. A decision will be required as to whether the parking supplies proposed for the activities on-site will be adequate to ensure that parking demand impacts are not externalised. Probably they are not, but then parking constraint must remain sufficiently robust to achieve the transport sustainability vision of the proposal. In my opinion, this uncertainty regarding car parking should be manageable providing a sufficiently robust condition regarding off-site parking monitoring is developed and implemented.

104. A decision will be required on whether the Sunbus proposal is considered feasible. This will inevitably require further consideration and advice from AT. Matters to consider include:

    a) Is the movement of 3,000-3,500 people during the peak hours (requiring 88 40-seater buses per hour[28] at 400m headways) feasible in practice?

    b) Is there sufficient certainty of such levels of service being maintained in perpetuity?

    c) Is there sufficient capacity at the Takaanini and Papakura Trains Stations to accommodate the additional bus stop demands that will be generated?

105. A decision will be required as to the acceptability of the internal site layout. At a broader concept level, it is my opinion that it is generally acceptable. However, the devil will be in the details. In this regard it is anticipated that design detailing (including the matters referred to in Annexure 2 of the Auckland Council Specialist Memo), will be addressed at the engineering design and approvals stages.

15 Comments on Draft Transport-Related Conditions

106. Proposed Conditions 110, 111 and 112 address parking provisions. No comment is required. However, the conditions do not address parking within the employment precinct. It is therefore recommended that two new conditions be added as follows:

> ***112A**. Parking for office activities within the employment precinct shall be provided at a maximum of 1 per 300m^2 of gross floor area.*
>
> ***112B**. Parking for manufacturing / warehouse / industrial activities within the employment precinct shall be provided at a maximum of 1 per 500m^2 of gross floor area.*

107. In order to monitor the extent of any potential parking spillover into surrounding neighbourhoods, an off-site parking monitoring condition is proposed as follows:

> ***112C**. Prior to the occupation of any dwellings or businesses onsite, baseline surveys of existing on-street parking within the catchment area shown in the map below must be undertaken. Two baseline surveys are required, one at night (midnight) and one during the day (midday). The surveys must record all on-street*

[28] ITA s.11.2.1, p.68

parked vehicles on a street-by-street basis, so that the results can be referenced to later surveys.

The parking surveys, both daytime and nighttime, must then be repeated at the following stages of occupation, and the results compared to the baseline surveys:

- *(a) At occupation of 1,350 dwellings (including retirement units), or occupation of 100,000 sqm buildings within the Employment Precinct, whichever comes first; and*
- *(b) At occupation of 2,000 dwellings (including retirement units), or occupation of 200,000 sqm buildings within the Employment Precinct, whichever comes first; and*
- *(c) At occupation of 3,000 dwellings (including retirement units), or occupation of 300,000 sqm buildings within the Employment Precinct, whichever comes first; and*
- *(d) At occupation of 4,000 dwellings (i.e. including retirement units), or occupation of 400,000 sqm buildings within the Employment Precinct, whichever comes first.*

If any of the surveys reveal changes in on-street parking demands at street frontages that are 10% or more higher than the baseline surveys, (and which by way of their locations may reasonably be attributable to the Sunfield development), then an ITA must be prepared with recommendations proposed to address those overspill parking demands. Such measures may include further enhancement to public transport provisions or services; and/or further incentives to residents and/or employees to not travel by car; and/or provision of more parking within the Sunfield development to relieve on-street parking use.

If mitigation measures are required, a timetable for implementation must be provided as part of the required ITA or within a timeframe agreed with Council. The proposed mitigation measures must be implemented in accordance with the proposed timetable, to the satisfaction of Council.

108. In the event that more carparking becomes necessary, for example to temporarily compensate for limited travel options prior to the Sunbus becoming operative,

and/or in order to respond to any adverse off-site parking spillover impacts within surrounding neighbourhoods, the following additional condition is recommended.

> ***112D**. If any parking supplies are proposed that will result in parking ratios that are greater than the limits required by either Conditions 110, 111, 112, 112A or 112B, then an ITA shall be prepared to demonstrate that the generated trips associated with that additional parking can remain within the ability of the road network to accommodate the overall travel demands of the development.*

109. Proposed Conditions 113 and 113B addresses EV charging spaces and accessible parking respectively. No comment is required for either.

110. Proposed Condition 114 addresses the Sunbus fleet. No comment is required.

111. Proposed Condition 122 addresses construction of the Loop Road. No comment is required.

112. Proposed Condition 123 (which appears repeated by Condition 176) addresses the road network upgrades. The intersection upgrades contained within the table are accepted, and for the purposes of brevity are not repeated below. However, the provisions related to pedestrians, cycling and the Sunbus are included in the table below with recommended amendments and additions that are shown in red.

> ***123**. The transport upgrades specified in the table below must be completed and operational in accordance with the timing specified below*

Project	Upgrade	Timing
Pedestrian link	Upgrade Old Wairoa Road (northern side frontage of development site) to include a pedestrian footpath adjacent to the development area.	Prior to the occupation of 1,204 dwellings within the development site, or completed as part of the respective frontage to Stage 3 or Stage 4 works, whatever occurs first.
Pedestrian and cycling links	Connect the development site to key local destinations by providing improved active mode facilities on Cosgrave Road between ~~Walters~~ Airfield Road and Clevedon Road.	Prior to the occupation of 1,204 dwellings within the development site, or completed as part of Stage 2 works, whatever occurs first.
	Upgrade, in consultation with AT, the southern side of Airfield Road from the northern-most corner of the site to the northwestern corner of 139 Airfield Road	Prior to the occupation of any businesses within the Employment Precinct
	In consultation with AT, investigate and implement opportunities for improved cycling coherency and safety between the site and the Papakura Rail Station	Prior to the occupation of any dwellings or any businesses within the Employment Precinct
Public transport (Sunbus)	A frequent service is required between the development site and Papakura Town Centre.	To be implemented at the conclusion of 890 dwellings being constructed. [at this point there would be 445 dwellings occupied assuming 50% are occupied]
	Develop and agree with AT a level of service plan for the Sunbus that addresses bus numbers and frequencies in relation to levels of demand to ensure that at all stages	To be developed and active prior to 890 dwellings being constructed.

	of development, bus travel remains the most convenient and attractive travel option.	

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113. Proposed Condition 123A the need for an ITA to review trip generation effects prior to occupation of 1,350 residential dwellings. It currently says as follows:

> ***123A:*** *The consent holder must provide an integrated transportation assessment (ITA) prior to the occupation of 1,350 residential dwellings, including dwellings within the retirement village. The purpose of the ITA is to determine whether the traffic generation associated with the Sunfield development is in accordance with the submitted ITA (1,100vph for Sunfield in its entirety) and to understand the impacts on the following intersections:*
>
> - *Ranfurly Road / Alfriston Road roundabout (J)*
> - *Walters Road / Porchester Road roundabout (K)*
> - *Porchester Road / Kuaka Drive traffic signals (L)*
> - *Mill Road / Popes Road (M)*
> - *Mill Road / Alfriston Road (N)*
> - *Old Wairoa Road / Porchester Road (O)*
> - *Ranfurly Road / Mill Road (P)*
>
> *If the ITA indicates that the trip generation from the Sunfield development exceeds the anticipated 370vph, the consent holder must outline the proposed measures to mitigate any identified adverse effects (e.g. intersection upgrades or traffic restrictions), to the satisfaction of Council. If mitigation measures are required, a timetable for implementation must be provided as part of the required ITA or within a timeframe agreed with Council. The proposed mitigation measures must be implemented in accordance with the proposed timetable, to the satisfaction of Council. For the purpose of this condition, construction traffic associated with Sunfield development activities may be discounted from the trip generation calculation.*

114. On its face, this conditions appears acceptable, although it seems an early stage to be checking trip generation, especially as there may not necessarily be any employment activities operating at this time. I wonder if a few more stages should also be included, perhaps along the lines of the condition proposed for off-site parking. If that was thought appropriate, it would require some determination of what the target trip totals should be at the various stages, which will require some input from the applicant.

115. Proposed conditions 124 to 129 relate to internal design matters. No comment required.

116. Proposed condition 130 relates to a Travel Demand Management Plan for businesses within the Employment Precinct. As noted in Section 11 above, at present the condition lacks any teeth. The proposed condition is provided below, with my recommended changes shown in red.

> ***130****. A Travel Plan shall be required for each business within the Employment Precinct and Town Centre Precinct. ~~The~~ Each Travel Plan ~~shall~~ must set out ~~the~~ ~~measures~~ measurable sustainability targets that ~~each~~ the business will employ to achieve the following transport sustainability objectives:*
>
> > *a. Maximise the use of active transport modes, public transport, carpooling, ride sharing and micro-mobility.*
> >
> > *b. Minimise private vehicle trips and private carparking availability to achieve an on-site parking demand of no more than one space per 400 sqm.*

c. ~~Promote~~ Require 75% of vehicle movements relating to warehouse distribution operations to be confined to off-peak hours only (i.e. outside the hours of 7-9am and 4-6pm Monday to Friday).

Each travel plan must describe what targets it will aim for in order to achieve its travel sustainability objectives, how the targets will be measured, who will take responsibility for keeping the travel plan current and meeting those targets, and the actions that will be taken if the targets are not met.

Each travel plan is required to be submitted to the Council prior to the occupation of the building for each business. The outcomes of the travel plans must be reported back to Council at two-yearly intervals following occupation of the building, or on request from the Council.

117. In relation to the Travel Demand Management Plan, Neil Stone for AT also provides some insightful comments on how they could be administered and operated which have merit.[29] Some or all of his recommendations could also be woven into the condition.

118. Proposed Condition 176 – see comments above regarding Proposed Condition 123.

B Harries

Harries Transportation Engineers Limited

[29] Auckland Council Specialist Memo – Annexure 7 – Neil Stone para 73-74, p18