

BEFORE THE WAIKATO INDEPENDENT HEARINGS PANEL

In the Matter of the Resource Management Act 1991 (**Act**)

And

In the Matter of the Proposed Waikato District Plan

Submitter Thorntree Orchards (submitter reference 54, Further submission reference 1054

Cindy and Tony Young (Submitter Reference 735, Further Submission Reference 1221)

Parkmere Farms (Submitter Reference 696, Further Submission Reference 1283)

Statement of Evidence of Gary Black on behalf of Thorntree Orchards, Cindy and Tony Young and Parkmere Farms

(Traffic)

Dated 17 February 2021

Jeremy Brabant
Barrister
Level 4, Vulcan Building Chambers
PO Box 1502, Shortland St
Auckland City
021 494 506
Email: jeremy@brabant.co.nz

Introduction

1. My full name is Gary Black. I am a Chartered Professional Engineer with Engineering New Zealand. I hold the qualification of Bachelor of Engineering with Honours in Civil Engineering from Sheffield Hallam University in the United Kingdom.
2. I have 30 years' experience as a professional traffic and transportation engineer and have lived in New Zealand since 2005. My work experience includes undertaking traffic and transportation assessments and I have provided technical advice to Auckland Council, Auckland Transport, developers and individuals during resource consent and plan change applications.
3. I was requested by the submitters to provide a statement of evidence in support of their submission on the Proposed District Plan (PDP).
4. A summary of the relevant submissions lodged and a description of the area for which rezoning is sought (Pokeno East) is set out in the evidence of Mr Grala. To avoid repetition, I adopt Mr Grala's evidence in that regard. With respect to my expertise, I assess the road network, and constraints and opportunities, with reference to the proposed zoning and future urbanisation of Pokeno East.
5. I visited Pokeno East and the surrounding road network on 13th January 2021. During this visit I drove each of the roads in the vicinity of Pokeno East in both directions. I also drove and observed each of the intersections that would be used by Pokeno East to access the Pokeno township and the State highway network.
6. I confirm that I have read and agree to abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2014. This evidence is within my area of expertise, except where I state that I rely upon the evidence of other expert witness as presented to this hearing. I have not omitted to consider any material facts known to me

that might alter or detract from the opinions expressed.

Scope of Evidence

7. My evidence will address the following:
 - a. Proposed zoning
 - b. Existing Road Network
 - c. Existing Walking, Cycling and Passenger Transport Facilities
 - d. Infrastructure Improvements, including additional walking and cycling facilities.
 - e. Indicative Structure Plan Road Network
 - f. Conclusion
8. I was not involved in the submitters' original submissions' nor their further submissions, but I have been asked as part of Hearing 25 to provide an evidence brief on the above matters.

Proposed Zoning

9. The submissions lodged, and the outcome sought, is addressed in the evidence of Mr Grala. For the purposes of this evidence, it is sufficient to record that the submitters are seeking a Future Urban Zone for the proposed rezoning area (referred to as 'Pokeno East'). I note with reference to the evidence of Mr Grala that the Future Urban Zone (as the provisions are proposed) does not of itself enable urban development. Accordingly, I assess traffic and connectivity matters in the context of a residential zone, which is the ultimate outcome sought for Pokeno East.
10. The Indicative Masterplan that has been prepared by Mr Vile indicates that approximately 300-320 dwellings could be established on Pokeno East once it

is urbanised. A copy of the Indicative Masterplan is included as **Figure 1** below.



Figure 1 – Proposed Indicative Masterplan

Existing Road Network

11. Pokeno East connects to the existing road network with access to State Highway 1 (SH1) and Pokeno township to the west and south, and State Highway 2 (SH2) to the north. A map showing the road network is in **Figure 2** below.



Figure 2 – Existing Road Layout

12. SH1 provides connection between Auckland and Hamilton with an annual daily traffic volume (ADT) of 11,762 vehicles. It consists of two lanes in each direction that are separated by a solid median.
13. SH2 is a regional state highway, that extends east from SH1, providing connection to the Hauraki Plains to the east. SH2 has an ADT volume of 14,379 vehicles and consists of a single eastbound lane and two westbound lanes forming a passing lane for westbound traffic.
14. Great South Road is a Primary Collector Road that provides a north-south connection between Dean Road and Pokeno Road, and connections to SH1. Great South Road has an ADT volume of 3,937 at Pokeno Road, and 1,800 east of Pokeno Road. The road has a single lane of traffic in each direction. It

passes underneath SH1 linking with Dean Road on the eastern side of SH1 and Pokeno Road on the western side. Great South Road has no footpath between Dean Road and Pokeno Road, but it does have a median strip centreline and a footpath on the southern side east of Pokeno Road through Pokeno township.

15. Dean Road is split into two sections. Between Fraser Road and the SH1 off-ramp roundabout, Dean Road provides a single lane two traffic flow with a maximum longitudinal gradient of approximately 1:6 or 17%. There is no footpath on this section of Dean Road. Between the SH1 off-ramp roundabout and Great South Road, Dean Road is classified as a Primary Collector with an ADT volume of 1,665 vehicles.
16. Fraser Road is an access road that provides a north-south connection between Avon Road and Dean Road and provides direct access to Pokeno East. Fraser Road has an estimated ADT volume of 78 vehicles with a single traffic lane in each direction. There is a single footpath on the eastern side between Avon Road and Dean Road.
17. Avon Road is an access road that provides a north-south connection between SH2 and Fraser Road. No traffic volume data is available for Avon Road. It has one traffic lane in each direction and 350m length of footpaths on the southern side between the property of 109 Avon Road and Fraser Road. The maximum longitudinal gradient on Avon Road is 1:8.4 (12%).
18. There are four intersections that connect Pokeno East to the wider road network, plus two other minor intersections.
19. The intersection of SH2 and Avon is priority give-way controlled with no right-turn bay or deceleration lane, which I presume is due to the low traffic volumes using this intersection. This intersection will likely form the main access and egress from the northern part of Pokeno East. It also provides a secondary access and egress route to Pokeno Township as traffic can chose to use SH2 westbound and SH1 southbound to the SH1 off-ramp to access Pokeno.

20. The intersection of Avon Road and Fraser Road is a priority 'give-way' T-intersection with good visibility for all three approach lanes.
21. The priority 'Stop' controlled cross intersection at Fraser Road and Dean Road provides priority to traffic on Dean Road with Fraser Road traffic required to stop. The visibility on Dean Road to and from the west of the intersection is restricted due the vertical curve and steep gradient downhill. Based on my visual observations during the Pokeno East visit, the visibility to the west is unlikely to comply with current Austroads design standards and I consider this would be a safety concern with the increase in traffic from Pokeno East. I have checked the NZTA crash analysis database and there have been no crashes between 2016 and 2020, however the lack of crash history is due to the low traffic volumes and regular users who know the intersection.
22. The roundabout at the motorway off ramp provides a footpath on the southern side of Deans Road and the east side of Great South Road. I have not observed peak hour traffic at this location, however, I do not envisage any significant traffic delays given the low traffic volumes along this stretch of road.
23. In conclusion, I consider the existing road network appears that it could accommodate the additional traffic that can be expected from the urbanisation of Pokeno East. Based on the indicative yield of 300 dwellings, this equates to approximately 3,000 vehicles per day, and 350 trips in the peak hour, distributed across the north and south access to Pokeno East. However, given the current rural nature of the roads and intersections, improvements and upgrades will be required to provide a safe road environment for all road users including pedestrians, cyclists and passenger transport services, as well as private motor vehicles.

Existing Walking, Cycling and Passenger Transport Facilities

24. As identified earlier, existing pedestrian facilities near Pokeno East are limited to the following locations:
 - Avon Road (between 109 Avon Road and Fraser Road) – southern side

- Fraser Road (between Dean Road and Avon Road) – eastern side
 - Great South Road – east side near to the motorway and west side within the township centre
25. There are no dedicated cycle lanes or facilities within the vicinity of Pokeno East, which would force cyclists to use the road carriageway.
26. The public transport / bus services that service Pokeno (which could be utilised by Pokeno East) are:
- The 44 Route, which operates between Pokeno and Pukekohe. The route loops up Hillpark Drive, down Mark Ball Drive, and along Great South Road. The service operates 7 days a week and runs every 40 minutes during the peak and approximately every 90 minutes off peak.
 - The 21 Route, this Northern Connector operates between Pukekohe and Hamilton. The Pukekohe-bound service arrives in Pokeno at 10.58am and the Hamilton-bound service arrives in Pokeno at 2.42pm, Monday to Friday. The bus stop for the Northern Connector is on Great South Road in Pokeno Town Centre.
27. There are no bus services that pass through Pokeno East.
28. The Auckland to Hamilton railway line passes to the west of Pokeno township. There are no scheduled passenger train services however the future Hamilton to Auckland train service may evolve to include a stop at Pokeno.

Infrastructure Improvements

29. I have reviewed the Indicative Masterplan in relation to the existing road network and have identified improvements to the road network that would be required when Pokeno East is urbanised.
30. The intersection of SH2 and Avon Road will require upgrading to a safer form of intersection. Based on my previous experience, this could include a formalised right turn bay, deceleration lanes and acceleration lanes. Early

consultation with Waka Kotahi NZTA at either the plan change or resource consent stage would be undertaken to confirm the scope of any intersection upgrade. I consider the upgrade to this intersection would be undertaken early in any development of Pokeno East.

31. In its current form, the intersection is unsafe to accept heavy construction vehicles delivering materials to Pokeno East due to high vehicle speeds on SH2 and the slow turning speed heavy construction traffic. Given the existing residential properties to the west of Pokeno East and steep grades, the use of SH1, Dean Road and Fraser Road should be conditioned and limited to Pokeno East staff and smaller construction traffic. I recommend SH2 and Avon Road intersection should be conditioned as the primary route for construction traffic and be upgraded prior to the commencement of construction of Pokeno East. This could exclude earthworks operations if earthworks materials will remain within Pokeno East and the import and export of soil is not required.
32. Avon Road, Fraser Road and Dean Road corridors are also likely to require an upgrade to provide a constant road cross section, including safe walking and cycling facilities to connect Pokeno East to the Pokeno township. I recommend these upgrades be completed as part of a resource consent towards the end of construction of the roads and other civil engineering infrastructure, and prior to the occupation of any dwellings assuming residential zoning.
33. The intersection of Fraser Road and Avon Road may require an upgrade to improve the priority give way intersection arrangement and provide safe walking and cycling facilities. This can be completed at the same time as the upgrade to Fraser Road and Avon Road.
34. The cross intersection of Dean Road and Fraser Road will require an upgrade to address increase in traffic flows from a fully developed Pokeno East, including providing safe walking and cycling facilities. The existing restricted visibility at the cross intersection would remain an operational and safety issue and would also need to be addressed as part of an intersection upgrade.

I consider this would be completed as part of the resource consent and prior to the occupation of any dwellings, or other buildings.

35. In my view, the gradient of approximately 1:6 or 17% on Deans Road is a concern, as this would discourage walking and cycling along the corridor from Pokeno East to Pokeno township. I provide further commentary on alternative walking and cycling facilities in my evidence below.
36. Assuming the roundabout at Deans Road and SH1 offramp can continue to operate with the additional Pokeno East traffic, the roundabout will likely require additional safe walking and cycling facilities.

Additional Walking and Cycling Infrastructure

37. I have reviewed the Indicative Masterplan and identified potential additional walking and cycling routes as detailed in **Figure 3** below. The walking and cycling route to and from Pokeno East would include existing and/or upgraded facilities along Avon Road, Fraser Road, Deans Road and Great South Road. A review of the Waikato District Council GIS maps has identified that there is sufficient road width to accommodate additional walking and cycling facilities within the existing road reserve.
38. I have identified three potential additional walking and cycling routes crossing SH1, to reduce the community severance associated with the SH1 corridor. These grade-separated crossings with a pedestrian and cycling overbridge provide improved walking and cycling facilities between Pokeno East and the rest of Pokeno.
39. One potential walking and cycling crossing connects the northern end of Fraser Road to the existing path network east of Hillpark Drive. A second potential crossing connects the north to Pokeno Cemetery to the east of Springburn Place. I consider these would benefit both Pokeno East and the new sub-divisions to the west of Pokeno by connecting the two neighbourhoods. They would also provide improved walking and cycling access to facilities such as Pokeno Domain for the sub-divisions to the west of Pokeno.

40. While, I have identified options for two overbridge crossings of SH1 to the north of Fraser Road, a single crossing of SH1 should be sufficient to connect the two neighbourhoods and provide walking and cycling access to destinations within in each neighbourhood.

41. The third crossing SH1 to the south includes Fraser Road, Market Street East and Market Street West with a grade separation crossing of SH1. This would provide an alternative walking and cycling route to the Dean Road and Great South Road to access Pokeno Town Centre. This route would provide a better walking and cycling outcome as the roads will have less traffic and offer higher amenity value for pedestrians and cyclists. A preliminary review of the alternative route indicates the road to be less steep than Deans Road however, I have been unable to confirm the gradient.

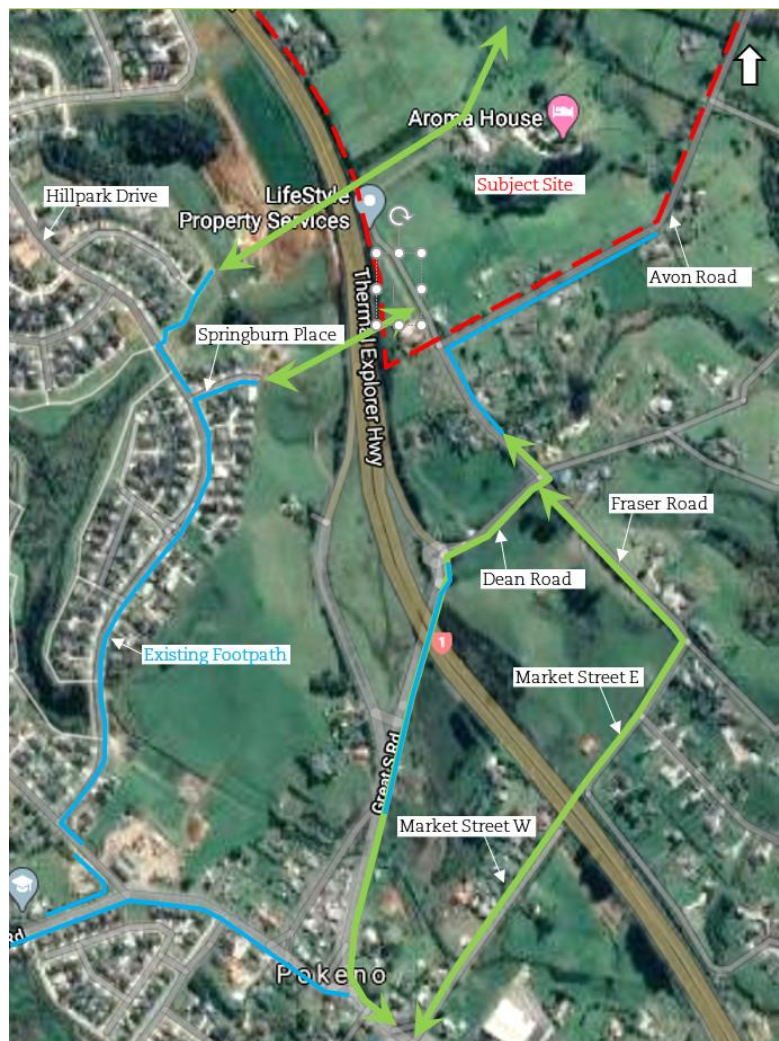


Figure 3 – Additional Walking and Cycling Infrastructure

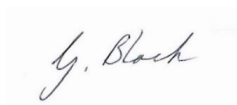
Indicative Structure Plan Road Network

41. I have reviewed the Indicative Masterplan and preliminary street hierarchy that has been developed for Pokeno East by Mr Vile.
42. The primary road is planned to intersect with Avon Road at the southern end of the Pokeno Domain as a cross intersection. I consider this an appropriate location, where inter-visibility is good due to the straight alignment and relatively flat grade of Avon Road at that location.
43. A stream edge reserve road is also proposed, which is to intersect with Avon Road at the approximate location of the existing vehicle access to 74 Avon Road. This is an appropriate location due to the position above the crest on Avon Road, making inter-visibility good in each direction along Avon Road.
44. Three T-intersection are proposed along Avon Road providing secondary access to the development.
45. I consider the Indicative Masterplan appears sensible from a traffic engineering perspective and appropriate for the outcomes sought by the applicants. The Indicative Masterplan would be completed with the upgrades identified above as part of a future plan change and any subsequent resource consent applications.

Conclusion

42. In preparation of my evidence, I have reviewed the proposed masterplan and existing traffic information, Waikato District Council GIS maps and Auckland Council GIS maps.
43. I have visited Pokeno East and driven each road in both directions that will provide access and egress to Pokeno East. I observed each intersection for any traffic operation and safety issues.

44. The primary routes to and from Pokeno East will be via SH2 to the north and Great South Road to the south accessing Pokeno Town Centre and the state highway network. I consider that people living and working in the north of Pokeno East may choose to use the SH2 westbound and SH1 southbound to access Pokeno.
45. I note that corridor and intersection upgrades and improvements will be required as part of any future development of Pokeno East. I consider that the existing roads should be able to accommodate the predicted increase in traffic, cyclists, and pedestrians with these upgrades and improvements.
46. Each of the road corridor for Avon Road, Fraser Road and Dean Road will likely require an upgrade to provide a constant road cross section. This should include safe walking and cycling facilities.
47. The intersection of SH2 and Avon Road will, in discussion with Waka Kotahi NZTA, require improvements to likely provide a right turn bay, deceleration and acceleration lanes on the State highway.
48. The intersection of Fraser Road and Deans Road will likely require an upgrade to address existing and future safety and operational concerns with restricted visibility and increase in traffic volumes.
49. The indicative masterplan road layout appears sensible from a traffic engineering perspective at this early stage of the planning process.
50. In my opinion, I consider the Future Urban zoning sought by the applicants can be accommodated by the existing road network. A residential zoning can also be accommodated by the existing road network when combined with appropriate road improvements implemented as part of a future plan change and any subsequent resource consent application.



Gary Black
Dated 17th February 2021