

Before the Independent Commissioners

Under the Resource Management Act 1991

In the matter of a hearing on submissions on the proposed Te Tai o Poutini Plan

Topic 20: Settlement Zone and its Precincts

Submitter: **Russell Robinson** and **Brunner Builders Limited (S515)**

Statement of Evidence of Anthony Thomas Penny

18 March 2024

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Qualifications and Experience

- 1 My full name is Anthony Thomas Penny
- 2 I am a Fellow of Engineering New Zealand and I hold a Bachelor Degree in Mathematics and a Bachelor Degree in Civil Engineering from the University of Canterbury.
- 3 I am currently employed as an independent consultant through my company TP Consulting Limited, advising on the full range of transportation issues covering safety, management and planning matters. My background of experience includes over 40 years in traffic engineering and transportation planning with the Christchurch City Council, the Department of Transport in the United Kingdom, the MVA Consultancy in Hong Kong, and Traffic Design Group Limited, Stantec and TP Consulting in New Zealand. I have worked for a total of over 30 years practising as a traffic engineering specialist on projects throughout New Zealand.
- 4 My previous work experience includes transportation design and assessment for the Pegasus new town in North Canterbury. This involved reports and evidence in support of both a plan change application for the Waimakariri Transitional District Plan and a review of the Proposed District Plan. I have more recently been involved in preparing evidence for District Plan reviews of new residential and commercial areas for the Peacocke Precinct in Hamilton and of a residential zone for Sticky Forest in Wanaka.
- 5 In relation to the background to this matter, I was initially engaged by Russell Robinson in 2021 to assist with the preparation of his private plan change application to the Grey District Council (GDC) to enable residential and commercial development on his rural property in North Moana. My input involved assisting with the preparation of an Outline Development Plan (ODP) for the site adjacent to Arnold Valley Road and preparing an Integrated Transportation Assessment Report.
- 6 That report provided comment on the proposed legal road access to his land noting how this related to the transportation issues, objectives and policies specified in the Grey District Plan (GDP) . It also reviewed the ODP for likely compliance with the relevant transportation rules and assessed the effects of future traffic generated by the development enabled by the proposed plan change on Arnold Valley Road and the district arterial route through the wider road network.
- 7 I have visited the Moana North site on two occasions specifically to support my assessments for the proposed plan change and I am familiar with the site and the surrounding area from many previous visits to Moana.

Code of Conduct for Expert Witnesses

- 8 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Evidence

- 9 This evidence is provided in support of the submission on the Proposed Te Tai o Poutini Plan (**TTPP**) by Russell Robinson and Brunner Builders Limited (**Submission**) seeking to rezone Lot 1 DP 2820 and Part RS3806 (**Site**) from the notified Settlement Zone with a Rural Residential Precinct (Precinct 4) overlay to a mix of Settlement Zone and a Settlement Centre Precinct (Precinct 2) that is subject to an Outline Development Plan (**ODP**).
- 10 My evidence reflects the design advice I have provided in relation to the traffic and transportation matters associated with the rezoning of the Moana North Site including the provision of access from Arnold Valley Road for motor vehicles, cycling and walking as well as the configuration of the internal roads and trails.
- 11 My evidence also covers:
- (a) the alignment of the rezoning proposed by the Submission and the related ODP with the transportation objectives, and policies of the TTPP;
 - (b) a comparative assessment of the transportation effects of the activities enabled by the notified zoning and by the rezoning proposed by the Submission;
 - (c) a preliminary assessment of the compliance of the Submission rezoning with the transportation rules in the TTPP relating to the external access to the Site;
 - (d) the basis for the conclusion that the rezoning proposed by the Submission would likely result in more appropriate transportation outcomes than the notified zoning of the Site in the TTPP.
- 12 In preparing this statement of evidence I have considered the following documents:

- (a) the proposed TTPP planning provisions relevant to my area of expertise;
- (b) the Submission on the TTPP by Russell Robinson and Brunner Builders Limited;
- (c) the Integrated Transportation Assessment report I produced for Russell Robinson's private plan change application to the GDC.

Existing Transportation Environment

13 The following Figure 1 illustrates the existing road network in the vicinity of the Moana North Site. It also shows the approximate extent of the Site for the proposed future areas of development.



Figure 1 Moana North Site Location

14 The Site is adjacent to and singly served by Arnold Valley Road which forms the northern access road for Moana. Arnold Valley Road is classified as a “District Arterial” road in the Grey District Plan. Accordingly, I have assumed that it would be classified as an “Arterial Road” for the TTPP (I have been unable to find a specific classification in the TTPP or in the One Network Roding Classification system which is referred to in the TTPP). It connects to the Moana township network just south of the Site and extends to a T-intersection with Ahau Street and Lake Brunner Road. Lake Brunner Road provides the continuation of the District Arterial route as the major connection to the south around the eastern side of Lake Brunner.

- 15 The existing urban area of Moana and the existing residential zone extends to the southern boundary of the plan change Site. The nearest side road to the Site is Brownlee Drive on the western side of Arnold Valley Road some 150m south of the Site boundary. There are two driveways to properties between Brownlee Drive and the southern boundary of the Site. The sight distances from these driveways are restricted by the vertical and horizontal alignment of Arnold Valley Road and therefore they do not have good visibility for turning drivers.
- 16 The footpath along the western side of Arnold Valley Road extends from the town network to just short of the second driveway referred to above and some 20m short of the southern boundary of the Site.
- 17 Opposite the southern section of the site there is a notified Commercial Zone which currently accommodates a service station and some retail facilities.
- 18 There are two existing accesses into the Site. One has a formed driveway opposite the service station that leads to sheds and a yard located on the southern section of the Site. This access has limited sight distance and conflicts with the accesses to the service station. The other access which is located near the northern boundary of the Site does not have a fully formed driveway. It provides access to the northern section of the Site which has no current buildings and minimal rural activity. It also has a limited sight distance.
- 19 The current traffic volume on Arnold Valley Road north of Moana is expected to be normally less than 2,000 vehicle movements per day(vpd). To put this into context, the traffic volume recorded on SH7 near Stillwater in 2019 was just over 2,000vpd while on SH6 High Street approaching Greymouth carries nearly 10,000vpd.
- 20 Figure 1 also shows the railway line running from the south along the northern shore of Lake Brunner past Moana and along the eastern side of the Arnold River towards the north. The line has a station at Moana where passengers can board or alight from the Trans Alpine Express. The line also carries freight trains involved in shipping coal from the West Coast to Lyttelton. There are no road-railway crossings affected by traffic generated by the Site.

Submission Transportation Matters

- 21 The following Figure 2 shows the layout proposed for the Outline Development Plan associated with the Submission on the Site rezoning, which provides for a maximum of 200 residential lots to be developed and

some 1.27ha for small scale retail and commercial development anticipated by the TTPP Precinct 2 Settlement Centre zoning. It is intended to provide an internal transport network for this potential development with roads linking to the two intersections shown providing access from Arnold Valley Road.

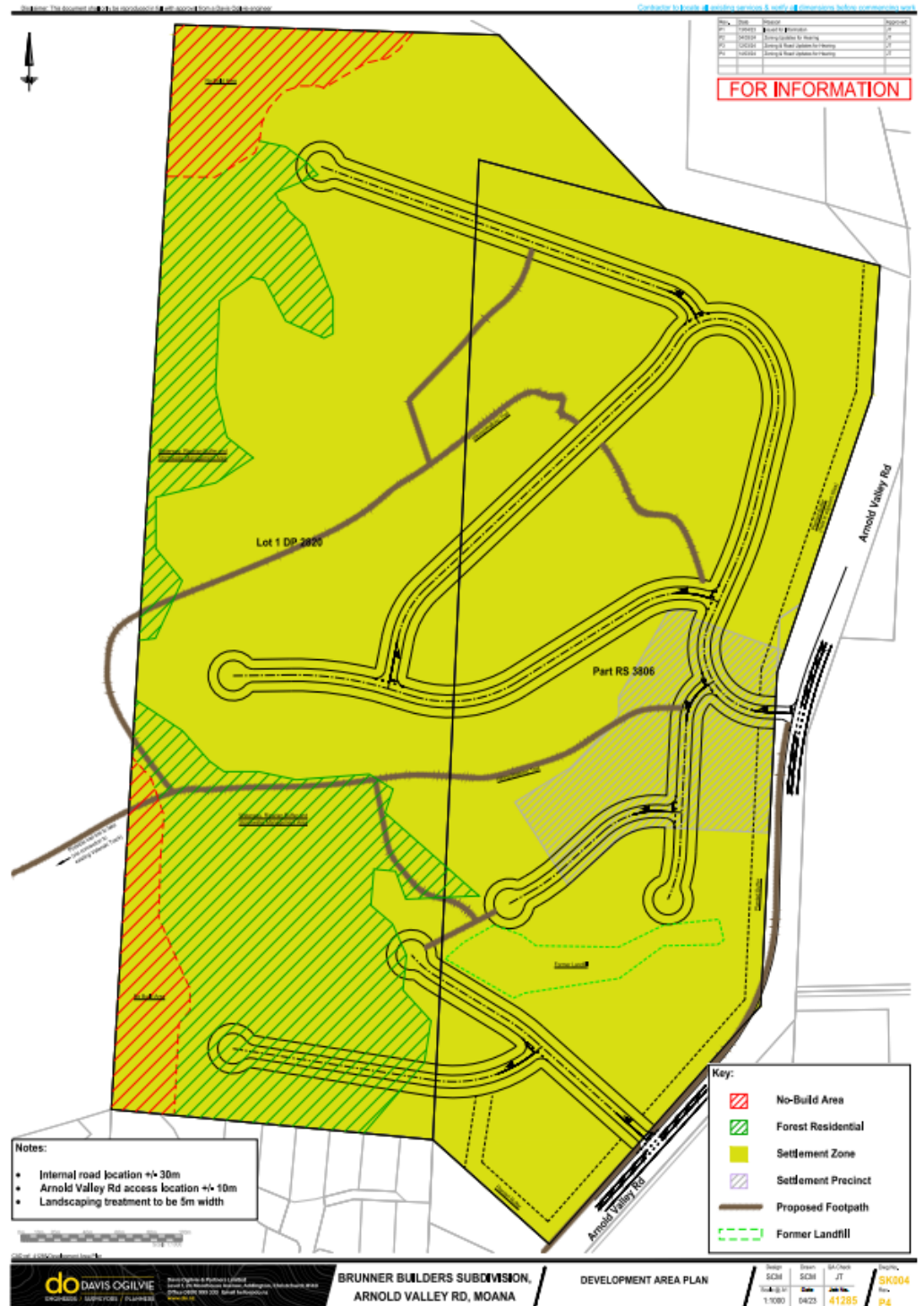


Figure 2 Moana North Outline Development Plan

- 22 It is also intended that the transport network would include walking/hiking trails within the Site linking to existing trails to the west of the Site and to the footpath proposed on the west side of Arnold Valley Road which would be extended along the frontage of the Site to the northern access from the existing footpath that terminates to the south of the Site. The trails within the Site could be designed to accommodate cycling particularly if cycling is permitted on the existing trails. The walking network includes the footpaths along the internal roads while the cycling network includes the carriageways of the roads.
- 23 The ODP shown in Figure 2 is only indicative in terms of the internal transport networks that would service the future development. The alignment and width of roads, cycle paths and footpaths as well as the lot configurations and accesses would be determined at the stage that a subdivision consent is submitted. However, it is intended that the location and the number of access roads from Arnold Valley Road should be fixed at this stage as they are shown on the ODP.
- 24 The main (northern) access would be located on the west side (outside) of the bend in Arnold Valley Road directly opposite the access to the Moana resource centre (recycling depot). This location ensures effective sight lines in both directions along Arnold Valley Road for drivers negotiating turning manoeuvres at the Site access road intersection. The intersection would also allow potential conflicts with the resource centre traffic to be appropriately controlled.
- 25 Figure 3 demonstrates the intersection form I consider would be most appropriate for the northern access. It maintains the right turn lane already provided for the access to the resource centre driveway and adds an opposing right turn lane for traffic turning into the Site from the north. I do not expect that separate left turn lanes would be necessary.

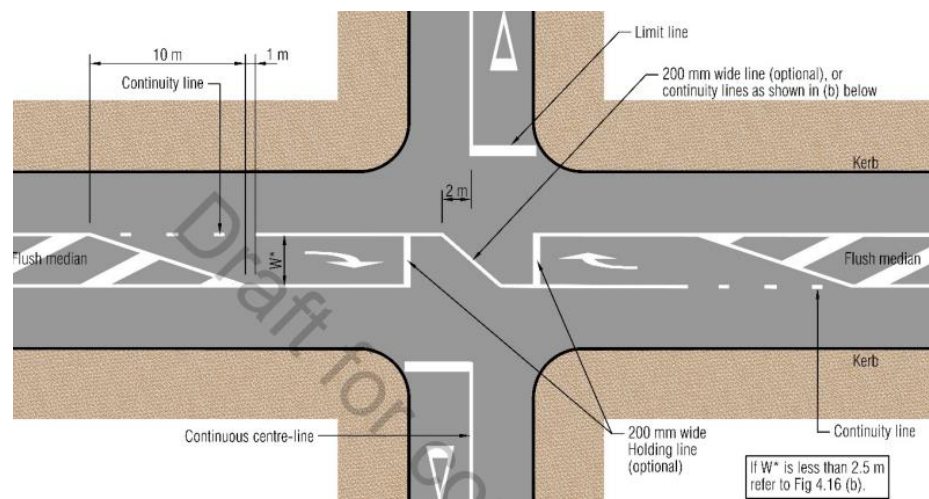


Figure 3 Proposed Main (Northern) Intersection on Arnold Valley Road

- 26 The second (southern) access would be located some 250m south of the main access. The secondary access would be about halfway between the bend in Arnold Valley Road adjacent to the existing service station on the eastern side of the road and the next bend in the road about 260m further south. This arrangement would maximise the sight distance from this access to about 130m in each direction.
- 27 Figure 4 demonstrates the T-intersection form I consider would be most appropriate for the southern access. It maintains the flush painted median already provided on that section of Arnold Valley Road which would accommodate vehicles waiting to turn right into the Site from the north. I do not expect that a separate left turn lane for traffic into the Site from the south would be necessary.

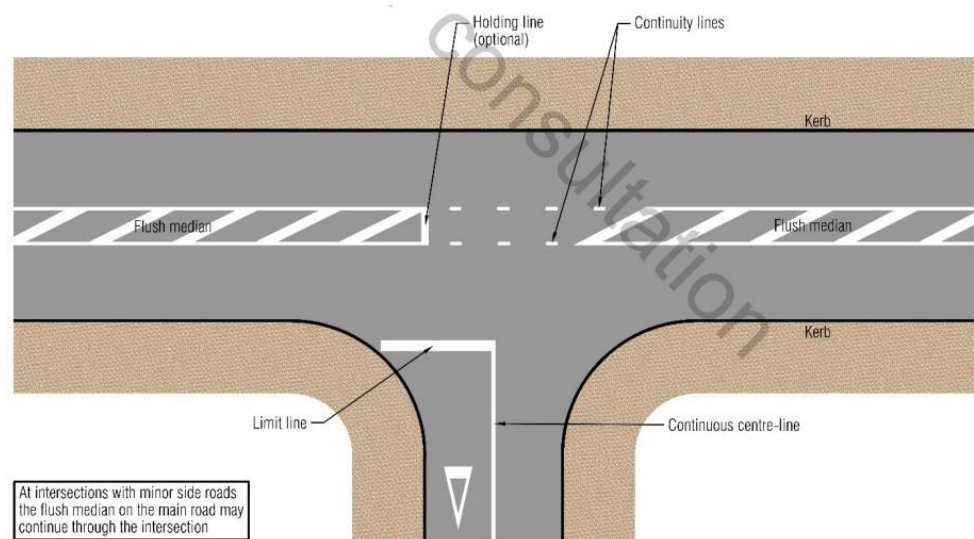


Figure 4 Proposed Minor (Southern) Intersection on Arnold Valley Road

- 28 I expect that there would be relatively low traffic generation rates associated with the residential dwellings that could be developed on the Site with the rezoning proposed by the Submission, because of the anticipated numbers of holiday homes, retired residents and employed residents working from home. There would also be the potential for linked trips within the proposed subdivision resulting in lower traffic generation at the external access intersections. I estimate that when fully developed the 200 dwellings on the Site would generate in the order of 120 vehicle movements in the peak hour. The retail facilities in Precinct 2 could include up to 5,000 square meters of gross floor area which could generate approximately 250 vehicle movements in the peak hour.
- 29 As a worst case, I have assumed that all the vehicle movements generated by the retail activities and by 150 dwellings would use the northern intersection for access. That would involve 340 vehicle movements in the peak hour which could efficiently and safely be accommodated by the layout

proposed for the northern intersection. The remaining residential traffic could be easily accommodated by the southern intersection

Zoning Compliance with TTPP

30 My assessment of the effectiveness of the proposed Submission rezoning in achieving the objectives and complying with the policies of the TTPP is summarised below (in italics) following each item. A comparison with the equivalent effectiveness of the notified zoning is provided where appropriate:

Transport Objectives

TRN-O1 To recognise and provide for the critical role land transport infrastructure plays in supporting communities including emergency services, and economic activity on the West Coast/Te Tai o Poutini.

The critical role of transport infrastructure would not be adversely affected by the approval of the Submission because of the appropriately controlled access to the Site. The notified zoning could adversely affect the role of Arnold Valley Road if individual lots were developed with direct access from the arterial because of the difficulty in providing accesses with appropriate sight distances and adequate separation from each other and from accesses on the opposite side of Arnold Valley Road (like the existing accesses on the west side of Arnold Valley Road).

TRN-O2 To manage the effects of land transport infrastructure on the character, landscape and amenity of the towns, settlements and rural areas and minimise adverse effects on the environment.

The ODP associated with the Submission provides for a footpath (and possible cycleway) along the frontage of the Site and linking to the existing footpath to the south. This would improve the amenity of the expanded town and potentially reduce effects on the environment by reducing motor vehicle use. The notified zoning might not be as effective if the footpath provision is not required in a rural residential zone.

TRN-O3 To enable accessibility, safety and connectivity of land transport infrastructure and consider the amenity of all transport users, including pedestrians and cyclists.

The commitment to two controlled accesses to the Site and a footpath (and possibly cycleway) along Arnold Valley Road through the ODP as well as networks of roads, and pedestrian and cyclist facilities within the Site, would ensure the accessibility, safety and connectivity of land transport infrastructure for all transport users. Again the notified zoning might not achieve this.

TRN -O4 To encourage resilience within the transport network to natural hazards and climate change reflecting its vital role in community wellbeing and economic activity.

I do not believe there would be any significant difference between the alternative zonings in terms of the transport network resilience.

TRN-O5 To ensure that the provision of safe and efficient parking, loading and access is consistent with the character, scale and intensity of the zone, the roading hierarchy and the activity being undertaken.

At this stage only the details of the access intersections on Arnold Valley Road and the internal transport network layout indicated by the ODP are able to be assessed for the Submission rezoning. These are considered appropriate for the development associated with the Submission. The requirements for parking and loading facilities are adequately specified in the TTPP rules and would be assessed at the subdivision consent stage. It is not possible to comment on the consistency of the parking and loading associated with either zoning at this stage. As noted above, I have some concern that the scale and intensity (i.e 4000m² lots) of the rural residential precinct might not justify an internal transport network and result in lots with direct access to Arnold Valley Road.

Transport Policies

TRN-P1 The road and rail networks shall;

- a. Be maintained or enhanced to provide safe and efficient transportation;

The rail network would not be affected by the zoning of the Site. The road network would be likely to be enhanced by the Submission rezoning with the safer speed environment (50km/h) able to be achieved through higher intensity urban development along Arnold Valley Road. The notified rural residential precinct is less likely to create the safer speed environment and could have road safety issues if direct lot access is provided from the arterial route.

- b. Consider the needs of all transport users and modes of transport; and

The Submission rezoning considers the needs of all transport users/modes through the provisions of the proposed ODP. The notified rural residential precinct might not provide for those needs as effectively particularly if there is no requirement to provide a footpath along the Arnold Valley Road frontage of the site.

- c. Minimise effects on adjoining properties including the impacts of vibration, noise and glare.

I do not believe this is a significant issue for this site and there is likely to be little difference between the zoning options.

TRN - P2 Vehicle crossings and associated access will;

- a. Be designed and located to provide for safe, effective and efficient movement to and from sites;

The individual vehicle crossings for lots under the Submission rezoning have not been specified at this stage but the transport rules in the TTPP would ensure this policy is satisfied. Again the notified zoning may not achieve the same level of safety on Arnold Valley Road particularly if crossings provide direct access to individual lots.

- b. Minimise potential conflicts between vehicles, pedestrians and cyclists on the adjacent road network; and

I consider that the ODP proposed with the Submission rezoning would minimise conflicts between vehicles, pedestrians and cyclists. The lower density rural residential precinct should have fewer potential conflicts but as noted before, they may not be minimised if lots have direct access to Arnold Valley Road and a footpath is not required along the frontage of the Site.

- c. Manage vehicle access to and from sites adjacent to intersections, and where State Highways meet.

The TTPP transport rules (TRN Table 3) would manage the distance of vehicle accesses from intersections under either zoning.

TRN -P3 Maximise user safety at road and rail level crossings by considering the location of buildings and other visual obstructions within sightlines.

This is not applicable to the Site under either zoning.

TRN -P4 Ensure any new road and pedestrian rail level crossings carefully consider the safety of road users, pedestrians, and the effective and efficient operation of the regions rail network.

This is not applicable to the Site under either zoning.

TRN -P5 Control vehicle access to sites adjacent to all road/rail level crossings to improve safety for road users on the approach to level crossings.

This is not applicable to the Site under either zoning.

TRN - P6 Enable provision of electric vehicle and bicycle charging stations.

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

TRN - P7 Support increased cycling and walking by:

a. Requiring larger developments to provide bicycle parking and

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

b. Providing for off-road pedestrian and bicycle facilities to complement facilities located within the road network.

This is proposed through the ODP associated with the Submission rezoning. In my opinion this is less likely to be achieved with the notified zoning.

TRN-P8 Manage the number, location and type of parking and loading spaces, including bicycle parking and electric car charging spaces to support the following:

a. The safe, efficient and effective operation of the transport network;

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

b. The functional and operational requirements of activities;

This is not able to be assessed at this stage for either zoning.

c. The recognition of different activities having different trip characteristics;

This is not able to be assessed at this stage for either zoning

d. The use of sustainable transport options including cycling and walking;

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

- e. Provision of safe access and egress for vehicles, pedestrians and cyclists;

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

- f. Avoid or mitigate potential conflicts between vehicles, pedestrians and cyclists;

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

- g. Mitigation of stormwater contamination from vehicles through treatment of stormwater from large areas of car parking;

This is not able to be assessed at this stage for either zoning.

- h. Provision for flexible approaches to parking, including more efficient use of parking spaces, and reduce incremental and individual parking provision.

In my opinion this is more likely to be achieved with the higher density Submission rezoning than with the notified zoning.

TRN-P9 Require parking and loading areas to be designed so that reverse manoeuvring of vehicles onto or off the road does not occur in situations which will compromise:

- a. The safe, effective and efficient operation of roads including State Highways; or

This is not able to be assessed at this stage for either zoning.

- b. Pedestrian access and amenity; or

This is not able to be assessed at this stage for either zoning.

- c. Safe and functional access

This is not able to be assessed at this stage for either zoning.

Transport Rules

- 31 In my opinion it is not necessary at this stage to assess all the detailed effects of the proposed rezoning of the Site against the transport rules proposed by the TTPP because the rules provide adequate provision to require such assessment at the subdivision consent stage. In particular an

assessment would be required under the High Trip Generating Activities defined in Table TRN 6 (sic) because the Site would be capable of accommodating more than 20 residential units as well as a village centre (commercial). I note that the High Trip Generating Activities Rule TRN 6 (sic) is only engaged for retail activity where the gross floor area of a single activity is greater than 250m², which coincides with SETZ Rule -R13 which limits the area of retail to 250m². Nevertheless I have determined the cumulative effect of the full extent of the potential retail in Precinct 2.

- 32 However, I do consider that it is necessary to consider the transport rules relating to demonstrating that efficient and safe access could be provided for the Site from Arnold Valley Road. Following my assessment of the existing transport facilities in the area, it is proposed that vehicular access should be provided by two intersections on Arnold Valley Road where adequate sight distance could be ensured and where conflicts with access to adjacent sites could be minimised. These intersections are shown on the ODP.
- 33 The TTPP Transport Performance Standards (Appendix One) require that access intersections with an Arterial Road should comply with sight distances specified in TRN Table 2. The respective sight distances required are dependent on the speed limit on the main road. I anticipate that the section of Arnold Valley Road adjacent to the Site would have a reduced speed limit of 50km/h once development has commenced.
- 34 I anticipate that with the development of the Site, the 50 km/h speed limit in Moana which currently extends along Arnold Valley Road to the transition to an 100km/h limit about 50m north of the existing service station, would be extended approximately 400m further north. The speed limit is determined through a warrant process that matches the speed limit to the speed environment of the road which is largely influenced by the level of activity on the land adjacent to the road.
- 35 The Site on the west side of Arnold Valley Road starts about 500m to the north of the existing speed transition but from the initial section of the adjacent road the development proposed by the Submission rezoning would not be immediately visible because of the topography and there would be no access road. Therefore the transition from the 100km/h speed limit to the 50km/h speed limit is likely to be located some 100m further south where Arnold Valley Road is relatively straight and level which would make the adjacent development more visible. This location is approximately 250m before the first and main access to the Moana North Site. Accordingly it is likely that vehicles approaching from the north would have slowed to an

appropriate speed for the transition to a 50km/h speed limit on the approach to the first (main) Site access road intersection.

- 36 Table 24.4 of the GDP indicates that for a (district) arterial road like Arnold Valley Road with an operating speed of 50km/h the minimum sight distance from an access road shall be 90m irrespective of the level of traffic volume on the access road. The TTPP Table 2 indicates the same sight distance but for “up to 60 vehicle movements a day”. It does not specify what the sight distance should be for access roads with higher traffic volumes as would be the case with the Submission rezoning.
- 37 The next higher operating speed in the GDP Table 24.4 is 70km/h and the associated minimum sight distance is 140m. The sight distance available from the main access is over 200m to the north and about 150m to the south. So even if the operating speed for vehicles travelling south from the 100km/h zone were slightly above the 50km/h speed limit or even if the operating speed were 70km/h, I consider there would be more than adequate sight distance to ensure safe vehicle manoeuvres at the intersection. Vehicles travelling north along Arnold Valley Road would be less likely to have a higher operating speed as they would be travelling within a 50km/h zone. Therefore the 150m sight distance would be more than adequate to ensure safe manoeuvres.
- 38 The second access road some 250m south of the main access would have sight distances of about 130m in each direction. In this case the operating speed of vehicles travelling south is more likely to be lower and certainly not as high as 70km/h. Therefore, I believe the 130m sight distances would be sufficient to ensure safe manoeuvres at the secondary access intersection. Certainly, it is greater than the only sight distance specified in the TTPP of 90m.

Conclusion

- 39 Following my assessments, I have concluded that a new subdivision at the Site at Moana North that is the subject of the rezoning requested in the Submission to the TTPP would not result in significant adverse transportation effects either at the accesses to the Site or on the external transport networks.
- 40 With relatively low traffic generation rates expected for the proposed residential dwellings, I have determined that the two new intersections proposed on Arnold Valley Road and the wider external network would not suffer adverse effects in terms of transportation efficiency, safety and amenity.

- 41 I have concluded that the proposed rezoning would be largely consistent with the transportation objectives and policies of the TTPP. Further a preliminary investigation of the transportation rules within the TTPP shows that the proposed ODP would enable a base design that would comply with the rules relating to access to the Site. I also expect that when the design of the Site subdivision is finalised and consents applied for, there is no reason why an internal layout that is consistent with the ODP could not comply with the more detailed transportation rules in the TTPP and the requirements of NZS 4404:2010 Land Development and Subdivision Infrastructure, as required by the subdivision matters of discretion.
- 42 On this basis and following consideration of the potential effects of development under the notified zoning for rural residential precinct, I am of the opinion that the Submission requesting rezoning to higher density activity could result in more manageable transportation effects because of the controlled access proposed through the ODP. Under the notified rural residential precinct there could be a relatively large number of sites developed with direct access to Arnold Valley Road with potentially no control on the separation of driveways from each other and from accesses on the other side of Arnold Valley Road. There would also be issues related to implementing an effective safe speed environment on the section of Arnold Valley Road along the frontage of the Site, associated with ad hoc and incremental subdivision and development in the absence of an ODP.
- 43 Accordingly, I consider that from a transportation perspective the rezoning proposed through the Submission would be a more appropriate zoning for the Site than the notified zoning.

Anthony Thomas Penny

Dated this 18th day of March 2024