CENTRAL HAWKE'S BAY DISTRICT COUNCIL

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Technical memorandum for an application for subdivision consent under the Resource Management Act 1991 in respect of 25 Punawaitai Road, Pourerere Beach

To: Ryan O'Leary, Planning Manager, The Property Group

From: Chris Rossiter, Principal Transportation Engineer, Stantec NZ

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1. Application details

Applicant's name:	Paonui Point Limited (**Applicant**)
Application number:	RM220003
Activity type:	55 lot subdivision (described in more detail below)
Site address:	25 Punawaitai Road, Pourerere Beach, legally described as Lot 1 DP 571994 & Lot 7 DP 571994; Lot 22 DP 571994 & Lot 2 DP 564721 (**Property**)

2. Introduction

Qualifications and relevant experience

2.1. My full name is Michael Christopher (Chris) Rossiter and I am a Principal Transportation Engineer at Stantec New Zealand Limited (Stantec). I have been in this position since 2013 and have been employed at Stantec (and TDG prior to its incorporation with Stantec) since 2006. Prior to joining TDG (now part of Stantec) in 2006, I was employed as a Principal Systems Engineer and Technical Manager with BAE Systems in England.

2.2. I hold the academic qualifications of Bachelor of Science from the University of Exeter and Bachelor of Arts (Open) from the Open University.

2.3. I am registered as a Chartered Engineer with Engineering New Zealand. I have over 35 years' engineering experience including 16 years' transportation engineering in New Zealand on a wide range of projects involving transportation engineering, transportation planning and assessment, analytical investigations and road safety audits. My role involves both preparing transportation assessment reports for private developers and also providing transportation engineering peer review services for councils.

2.4. Within the Central Hawke's Bay district, I have provided advice to council on several residential subdivisions.

3. Overview and scope of technical memorandum

3.1. The Applicant has applied for a resource consent to subdivide the Property into:

a. 48 allotments suitable for residential development plus balance lot;

b. 3 lots for shared open space;

c. 1 lot for stormwater detention and treatment; and

d. 2 lots for shared access.

3.2. My technical memorandum assesses the traffic effects of the Application to assist the preparation of the Central Hawke's Bay District Council's (**Council**) reporting planner's report under s 42A of the RMA and covers the following matters:

a. Expected traffic generation and movement patterns;

b. Transport infrastructure;

c. Lot access; and

d. District Plan compliance.

3.3. In preparing this technical memorandum, I have reviewed the following documents relevant to the Application:

a. Applicant's resource consent application (**Application**), and in particular:

i. RM220003 AEE 20211223.

ii. RM220003 Civil Design Report 20211223 (**Civil Design Report**).

iii. RM220003 Drawings 20211223.

iv. RM220003 Site Plan 20211223.

v. RM220003 Subdivision Plan 20211223.

vi. RM220003 Traffic Impact Assessment Stage 3 20211223 (**Traffic Impact Assessment**).

b. Updated subdivision plans from James Bridge, including:

i. James Bridge – 3 August 2022 V3-Overall.

ii. James Bridge – 3 August 2022 V3-Stage 1.

iii. James Bridge – 3 August 2022 V3-Stage 2.

iv. James Bridge – 3 August 2022 V3-Stage 3.

c. Relevant supporting information with reference to the requirements of Transport and Subdivision chapters of the Central Hawke's Bay District Plan (**Operative Plan**) and the Central Hawke's Bay Proposed District Plan (**Proposed Plan**).

d. Other information considered in preparing this memorandum.

i. Hastings District Council Engineering Code of Practice, December 2020.

ii. Waka Kotahi MZ Transport Agency National Speed Limit Register.

iii. Austroads Guide to Road Design Part 4A, Unsignalised and Signalised Intersections.

iv. Austroads Guide to Road Design Part 4A.

4. Executive Summary

4.1. The proposed subdivision will increase the number of residential lots accessing Pourerere Road via Punawaitai Road by 48. The Traffic Impact Assessment provides a conservatively high estimate of the likely traffic generation of the subdivision and, although this does not address seasonal effects (discussed further below), I agree with the assessment that the subdivision will not contribute to noticeable effects on the operation of Pourerere Road.

4.2. The proposed road design is generally appropriate for the residential subdivision but I recommend that the design is updated to include a wider footpath and also speed control measures to create a 30 km/h operating speed environment.

4.3. I also recommend that, if consent is to be granted, additional conditions be imposed to address the safety concerns identified in this memorandum.

5. Overview of the Application

5.1. The Applicant seeks consent for a staged subdivision, and the Application describes the proposal in detail. An excerpt of the proposed scheme plan is included in **Figure 1** below.

Figure 1: Subdivision Scheme Plan

5.2. The Application is for subdivision consent only, and the proposal is described in the Application as follows:

a. 47 allotments (Lots 1 to 14, 16, 17, 19 to 21 and 23 to 50 having areas between 1790m² and 4700m² suitable for residential development);

b. Lot 22 – 1.74 ha, part of which contains a house site and part of which is intended to be divided into paddocks to be available for lease by owners of the 47 other residential lots for the grazing of horses;

c. Lot 15 – 2711m² (which will contain the stormwater detention and treatment area serving Stage 3);

d. Lot 18 –5354m² (shared open space);

e. Lot 51 - 1.27 ha (shared open space);

f. Lot 52 - 1.6 ha (shared open space);

g. Lots 53 and 54 (shared access); and

h. Lot 60 – approximately 358 ha (balance area).

5.3. It is anticipated that Lot 15 (stormwater detention and treatment); Lots 53 and 54 (shared access); and, Lots 18, 51 and 52 (shared open space) will be held in separate titles, to be owned by an Incorporated Society (to be established). Each owner of the new residential lots will be required to be a member of the Incorporated Society which will control and manage the communal facilities, including the open space areas and rights of way.

5.4. Communal open space areas are also proposed to be developed by the Incorporated Society for recreational activities in future, but these do not form part of this Application.

5.5. I understand that the subdivision proposal requires consent as a discretionary activity pursuant to rule 9.9.4 of the Operative Plan as it is unable to comply with all relevant subdivision performance standards in standards 9.10(1)(a)-(i) of the Operative Plan.

6. Site locality and description of the environment

6.1. Pourerere is a small coastal community that is close to a popular beach. Pourerere Road continues as Pourerere Beach Road along the coast and provides access to the beach, camping areas and holiday accommodation. The nature of coastal recreation activity means that there will be large seasonal variations in traffic volumes on the road network.

6.2. There are no footpaths or cycle facilities on Pourerere Road between Punawaitai Road and the beach. Pedestrians and cyclists are expected to share the road with motor vehicles. There are raised platforms at intervals along Pourerere Road to reduce vehicle speeds to 25km/h. These begin about 600 metres east of Punawaitai Road.

6.3. The Applicant has recently constructed an off-road track between the subdivision site and the beach. The track follows an alignment to the east of the first subdivision stage.

7. Summary of transportation related aspects of the subdivision

7.1. Punawaitai Road is currently an unsealed, low volume road extending off Pourerere Road with a carriageway width of 2.9-3.5 metres.

7.2. It meets Pourerere Road at an uncontrolled priority T-intersection. The national speed limit register shows that Pourerere Road has a 50 km/h speed limit and that Punawaitai Road is within the 100 km/h speed limit zone. Since there are no speed limit signs on Punawaitai Road, I understand that legally, it is subject to the same speed limit as Pourerere Road, that is 50 km/h

7.3. I understand that the existing unsealed section of Punawaitai Road will be widened to provide a sealed carriageway width of 6.2 metres. I understand that this formed part of the works to support an earlier stage of subdivision for 20 lots (RM180160).

7.4. The proposed subdivision includes two new private roads that will formed to a similar width within 18.5 metre wide reserves. A 1.5 metre wide footpath is proposed on one side of the road.

7.5. A 2.5 metre track is proposed around the boundary of the subdivision site with the reserves and links to the new track to the beach. I have noted that there are no connections between the proposed path and the road through the first stages of the subdivision.

8. Reasons for resource consent: Transport

8.1. The subdivision site is located in the Rural Zone in the Operative Plan and requires resource consent as a discretionary activity pursuant to Rule 9.10(g)(v)(c)(3) of that plan as more than 10 lots will be formed and all access is proposed to a private road rather than a vested road.

8.2. Under the Proposed Plan, the site is located in the Coastal Environment Area within the General Rural Zone and is also within the Tsunami Hazard Zone. Resource consent is required because the formation of the proposed roads does not meet the minimum design requirements for a

new road set out in Table 4 TRAN-S5 in regard to: road reserve width, footpaths, carriageway width or design speed.

9. Technical Assessment of Effects

Traffic Generation and Effects

9.1. The Traffic Impact Assessment prepared for the Applicant by Urban Connection Limited does not provide a good description of existing traffic volumes in the area. Although it refers to information from the Mobile Roads website which represents an acceptable source, the count information is now out of date. I note that the Mobile Roads website currently shows an estimated volume of 230 vpd in July 2021 on Pourerere Road east of Punawaitai Road, an increase of over 18 percent compared with the 2018 information reported in the TIA. The Mobile Roads estimates are annual averages and do not take into the account the wide seasonal variation in traffic volumes that will exist. During the summer months, I would expect traffic volumes to be greater than the Mobile Roads' reported annual average.

9.2. I do agree that the average traffic generation of the large number of holiday houses will be less than 8 vpd per dwelling, and that this means that using this rate will provide a conservative assessment of effects.

9.3. The pattern of vehicle movements associated with holiday homes will be different to that associated with standard residential activity. In particular, I would expect holiday homes to have a lower volume of vehicle movements per day and for these to be more widely distributed across the day. The Traffic Impact Assessment adopts a peak hour factor of 15% which is higher than a typical peak hour factor for standard residential activity. Again, this will contribute to a conservative assessment of effects.

9.4. The Traffic Impact Assessment adopts a methodology from an old Austroads engineering standard that was superseded in 2009 to assess the performance of the Pourerere Road / Punawaitai Road intersection, whereas the current standard recommends assessment using the SIDRA intersection analysis tool. In practice, however, I do not consider that this is warranted by the traffic volumes in this location because of the very low volumes of traffic that are present. Even if the peak hour volumes on Pourerere Road reached 180 vehicles per hour or one vehicle every 20 seconds on average, there would be ample capacity at the intersection for drivers to depart and average delays will be below 10 seconds.

9.5. The Traffic Impact Assessment notes that the proximity of the beach to the subdivision will make walking and cycling a practical travel mode. No assessment has been provided of the effects on the operation of Pourerere Road or road safety of the increased volume of vulnerable road users in a location where there are no separated facilities or speed management controls. Under the Safe System Assessment Framework[1] which has been adopted by Waka Kotahi, vehicle speeds of less than 30 km/h are preferred to 50 km/h to reduce the potential for death or serious injury in the event of a crash. Since the existing speed management measures start some 600 metres to the east of Punawaitai Road, there is a long section of road where vehicle speeds will be greater than 30 km/h. Since the subdivision will effectively extend the residential area of Pourerere, I consider that additional speed control measures are desirable because of the recreational environment but note that the risk of conflict arising from pedestrians

[1] Austroads Research Report AP-509-16, Safe System Assessment Framework

travelling between the subdivision and beach will be largely mitigated by the new track that has been constructed.

9.6. Overall, I agree that the subdivision will contribute to higher volumes of movement on Pourerere Road generally, but hourly volumes will remain well within the capacity of the road and will not contribute to any noticeable effects on the transport network. The higher volume of vehicle movements will increase the potential for conflict with existing pedestrian movements on Pourerere Road between Punawaita Road and the beach. I consider that the Applicant should work with the Council to extend the pedestrian network from the subdivision site towards Pourere Road and contribute to speed control measures on Punawaitai Road.

Transport Infrastructure

Speed

9.7. Neither the Traffic Impact Assessment nor the Civil Design Report discuss the design speed for the new roading network within the subdivision. Although the rural road standards in the Operative Plan do not include any reference to a design speed, this is included in the Proposed Plan. The Proposed Plan requires that a road in a rural zone serving up to 200 lots has a design speed of 30 km/h. I consider that this is an appropriate design speed for the residential environment being proposed.

9.8. Vehicle speeds at the entry to subdivision site will be moderated by the small radius curve immediately to the south. However, Road A then follows a largely straight alignment to the north and there are no proposed measures to control speed. Vehicle speeds on Road B will be largely moderated by its intersections with Road A and curves in the road but there is a long section of straight road with no speed control.

9.9. In my opinion, creating a 30 km/h speed environment within the subdivision will require implementation of speed control devices such as raised intersections or raised platforms. Including raised platforms within the road design represents a primary treatment under the Safe System Framework for reducing the potential for death or serious injury in the event of a crash involving a motor vehicle and vulnerable road user.

Road formation

9.10. The proposed road formation for Stage 3 is similar to the road formation approved for the extension to Punawaitai Road and the first stage of subdivision. This formation meets the road design standards in the Operative Plan under the subdivision performance standard 9.10(i). It does not, however, meet the minimum road design requirements set out in Table 4 of the Proposed Plan standard TRAN-S5.

9.11. The Proposed Plan does not specify shoulder width requirements and I have therefore referred to the Hastings Engineering Code of Practice. This requires a total shoulder width of 1 metre with 0.5 metre being sealed. Although the proposed shoulder formation does not meet this requirement, the proposed width of the carriageway is sufficient to accommodate two-way movement of vehicles. The narrower shoulder and steep batter slopes mean that any vehicles or trailers parked in the road have a greater potential to obstruct movement of other vehicles. However, given the low volume of movements in the subdivision generally, the large size of lots allowing for on-site parking, I consider that this is acceptable.

9.12. A single 1.5 metre wide footpath is proposed on the new road where the Proposed Plan requires two 3 metre wide paths. The likely volume of pedestrian movements in the subdivision

does not warrant provision of two paths but I recommend that the single footpath is widened to 2 metres to create more space for small groups of people to walk side by side. This would be more consistent with the width of the wider path network around the subdivision and connecting to the beach.

9.13. There are several lots within the subdivision where safe sight distances may not be achievable at accesses because of their location on the inside of curves. This could be addressed by reducing the vehicle operating speeds within the subdivision to 30 km/h.

9.14. The proposed road cross-section includes steep batter slopes of 1V:3H which no transitions from the shoulders. No details have been provided of what road edge delineation or lighting is proposed to mitigate the risk of drivers leaving the carriageway in low-light / night-time conditions. This is a matter than can addressed at the Engineering Approval stage.

10. Statutory Considerations

Operative Plan

10.1. New road design requirements are set out in the subdivision chapter under the performance standards in Rule 9.10(i) of the ODP. These require new roads in rural zones to have a carriageway width of 6.2 metres within a road reserve of 15-20 metres. There is no requirement for a footpath. The roads proposed as part of the subdivision will comply with this standard.

10.2. While this application is for subdivision, I have also completed an assessment of compliance for potential access locations for each lot because this has not been provided by the Applicant. Sight distances at accesses to Lots 34, 40 and 41 are unlikely to meet the district plan requirements for residential sight distance because of the curves in the Road B alignment and the lot locations on the inside of the curves. This could be addressed by reducing the speed limit or operating speeds within the subdivision to 30 km/h which would reduce required sight distances.

10.3. Since the subdivision roads will provide access to more than 10 lots, the Operative Plan requires the roads to be vested with Council. The application proposes that the roads are retained in private ownership and managed by an Incorporated Society. I consider that this is an acceptable approach for managing the proposed roads.

Proposed Plan

10.4. The Proposed Plan requirements for a rural road serving more than 20 lots include:

a. 20 metre wide road reserve;

b. 5.5 metre sealed carriageway excluding shoulder;

c. 3 metre footpath on each side of the road; and

d. 30 km/h operating speed.

10.5. Although the proposed road design meets the carriageway width requirement for vehicle movement, it does not meet the road reserve, footpath or operating speed requirements.

10.6. Transport standard TRAN-S8 requires that sight lines at new accesses comply with the Austroads Standards. The standard recommends that Safe Intersection Sight Distances are provided at private driveways. On that basis, a minimum sight distance of 97 metres would be required for a 50 km/h road and there are multiple lots for which this cannot not be achieved. In practice, the minimum sight distance requirement could be reduced to 37 metres when the residential environment is taken into account and if operating speeds are reduced to 30 km/h.

11. Recommendations and Conditions

Adequacy of information

11.1. The above assessment is based on the information submitted as part of the Application. While there are some omissions, I consider that the information submitted is sufficient to enable consideration of transport matters. In particular:

a. The Traffic Impact Assessment provides conservatively high estimates of the likely traffic generation of the subdivision but does not discuss the highly seasonal nature of traffic volumes in the area. However, based on the information provided and available on-line, I do not consider that the subdivision will contribute to noticeable effects on the road network.

b. The application does not discuss the design speed for the subdivision roads or provide commentary on the road design with reference to either the Operative or Proposed Plan requirements. Based on the location of the site within an area that will be dominated by coastal recreational activity, I consider that the roads should be designed to achieve a 30 km/h operating speed environment. The application and proposed design do not include any measures that would support this.

c. No assessment has been provided of the sight distances that would be available at the new lots formed by the subdivision. There appears to be at least three lots where accesses could not be formed that provided a complying sight distance unless the vehicle operating speeds within the subdivision were reduced.

d. No assessment has been provided on the effects on road safety of higher volumes of vulnerable users travelling between the site and beach.

Conditions: Transport

11.2. The Application seeks the grant of resource consent subject to the Council's standard conditions for subdivision. I consider that additional conditions are required to address the matters of road design identified in this assessment. My recommended conditions are that:

a. The Applicant implement speed management controls that physically constrain vehicle speeds to below 30 km/h throughout the subdivision.

b. The Applicant construct a 2 metre wide footpath on the Punawaitai Road extension through the Stage1-2 subdivision site to connect with the path to the beach.

c. The Applicant supply plans indicating all road signs, markings and guidance proposed for the new roads. The details should be assessed as part of the Engineering Approval for the new roads. Specific consideration should be given to road edge markings and protection from steep batter slopes.

d. The Applicant submit a Detailed Design Stage Safe System Audit for the subdivision roads as part of the Engineering Approval for the new roads.

11.3. No details have been provided on conditions relating to the management and maintenance of the new roads. This will need to be confirmed with the Council and addressed in any consent conditions.

Conclusion

11.4. Overall, I have concluded that the Application can be supported from a transport perspective subject to consent conditions requiring alterations to the road design to include a wider footpath and measures to control vehicle speeds to create a 30 km/h operating speed environment.