

Appendix 5

Transport Review (Flow Transportation Specialists)

**BEFORE THE INDEPENDENT COMMISSIONERS APPOINTED BY KAIPARA
DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991 ("**RMA**")

AND

IN THE MATTER of the proposed Private Plan Change 83 (Cove
Road, Mangawhai Heads) ("**PC83**") lodged by The
Rise Limited ("**Applicant**")

**STATEMENT OF EXPERT EVIDENCE OF LUKAS GERHARD VAN DER
WESTHUIZEN ON BEHALF OF NORTHLAND TRANSPORTATION ALLIANCE**

TRANSPORT

31 JANUARY 2024

NORTHLAND TRANSPORTATION ALLIANCE



1. EXECUTIVE SUMMARY

- 1.1 My full name is Lukas Gerhard van der Westhuizen. I am a Principal Transportation Engineer at Flow Transportation Specialists.
- 1.2 I have been engaged by Northland Transportation Alliance (“**NTA**”) to advise on the transportation elements and impacts of the private plan change 83 (“**PC83**”).
- 1.3 This statement of evidence includes the following:
- (a) A summary of proposed PC83 focusing on transport matters;
 - (b) A review of the relevant transportation material provided to support the application;
 - (c) Summary of public submissions relating to transport matters; and
 - (d) My recommendations and conclusions.
- 1.4 Key transport matters considered as part of my review of the application include the following
- (a) Traffic counts and SIDRA modelling of intersections;
 - (b) Safe system assessment;
 - (c) Walking and cycling connectivity;
 - (d) Road network connectivity; and
 - (e) Proposed Precinct provisions.
- 1.5 In conclusion, I highlight the following:
- (a) I suggest that Mr. Kelly's safety assessment of the Cove and Mangawhai Heads Road frontages in PC83 be reassessed to take into account the surveyed traffic volumes being factored up by 1.5 to take account for potential traffic exposure.

- (b) Regarding my concerns about intersection spacing on Cove Road, I recommend a comprehensive Safe System Assessment (SSA) be completed to identify necessary mitigation measures.
- (c) While supporting a speed limit reduction on Cove Road to 50 km/h and extending it to Mangawhai Heads Road, I acknowledge the complexity and urge the Applicant to assess additional mitigation measures if the speed limit change is not feasible.
- (d) For specific intersections, I recommend a 'STOP' control at Cove Road/Pigeon Place intersection. At the Mangawhai Heads Road/Jack Boyd Drive/Access connection 6 intersection 8, I disagree that a dedicated left turn lane from Cove Road is required, and instead recommend that an urban roundabout with active mode crossing facilities be implemented.
- (e) To ensure the delivery of transport infrastructure to support PC83, I propose a Precinct rule requiring the completion of necessary intersection and active mode upgrades before occupying any new dwellings in PC83. This requirement will ensure the implementation of safe transport connections for all modes, to the existing road network.
- (f) Emphasizing the importance of a shared path on PC83's frontages on Cove Road and Mangawhai Heads Road, I stress the need for provisions for pedestrians and cyclists, especially if the internal shared path network is deferred.
- (g) Regarding specific Precinct rules, I recommend setbacks for buildings, discretionary status for commercial and industrial activities, maintaining an average lot size of 1,000 m², and amending wording related to road, cycling, and pedestrian connections.
- (h) I recommend making the development of triangular land contingent upon the subdivision of properties accessing road #6 and the establishment of a feasible road and active mode connection.
- (i) Lastly, highlighting potential lack of access to road #6 if the northern PC83 area is developed, I stress the importance of an active mode connection from Pigeonwood Place on Cove Road to past the access road #6 on Mangawhai Heads Road.

- 1.6 Should my recommendations be adopted, I consider that there are no transport planning or transport engineering reasons to preclude the approval of the PC83.

2. INTRODUCTION

Qualifications and Experience

- 2.1 My full name is Lukas Gerhard van der Westhuizen. I am a Principal Transportation Engineer at Flow Transportation Specialists.
- 2.2 I hold a Bachelor of Engineering (Civil) from the University of Pretoria, South Africa. I am employed by Flow Transportation Specialists (“**Flow**”), where I have held the position of Principal since May 2023. Before joining Flow, I was employed by Stantec New Zealand in August 2019, where I held a Senior Transportation Engineer position and the acting Team Leader role for Transport Advisory (Auckland). I am a member of the Engineering New Zealand Transportation Group.
- 2.3 I have 9 years of experience as a transportation planner and engineer in public and private sector land development projects, which includes experience with Plan Changes, Integrated Transport Assessments, development consenting, and Notices of Requirement.
- 2.4 My experience includes advising Auckland Council, Whangarei District Council, Kaipara District Council, and various private developers throughout New Zealand. This work has included:
- (a) Plan Changes including Private Plan Changes 43, 70, 72 in Auckland and Private Plan Change 81 in Dargaville;
 - (b) Resource consent application reviews for the public sector, including Whangarei District Council, Auckland Council and Kaipara District Council. These applications include the Central Interceptor Extension – Pt Erin Tunnel in Auckland, 28 and 48 Old Waipu Road residential development in Mangawhai and 406 Kamo Road Gull Fuel Station in Whangarei; and
 - (c) Resource consent applications for the private sector for various residential developments in Auckland.
- 2.5 I am Flow’s Project Lead responsible for advising the Northland Transportation Alliance (“**NTA**”) on the transportation elements and impacts

of proposed Private Plan Change 83 (“**PC83**”). I took over the project in April 2023 from my colleague Mr Michael Jongeneel, who prepared the request for information (“**RFI**”) and response commentary.

- 2.6 I have reviewed Mr Jongeneel’s recommendations and agree with all of them.
- 2.7 I also reviewed NTA’s initial clause 23 request, which I agreed with, and will refer to in this statement.
- 2.8 I have reviewed the Applicant’s Transportation Assessment and responses to information requests and all submissions received.
- 2.9 I have attached Flow’s Summary of Requests for Further Information and Subsequent Responses (“Flow’s RFI summary”) as Appendix A, and will occasionally refer to the responses provided in this document.
- 2.10 I can confirm that I visited the PC83 site on 16 November 2023 and am familiar with the site location and the surrounding transport network.

Code of conduct

- 2.11 While this is not an Environment Court proceeding, I confirm that I have read the Code of Conduct for Expert Witnesses contained in the latest Environment Court Practice Note 2023 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 I have reviewed the notified PC83 material relevant to transport matters provided by the Applicant’s then transport engineers, Engineering Outcomes, through the RFI process. The documents I reviewed include:

Application Documents

- (a) Proposed Cove Road North Precinct Plan (Appendix 2);
- (b) Assessment of Traffic Effects prepared by Mr Dean Scanlen of Engineering Outcomes, dated 10 October 2023 (Appendix 4) – (now referred to as the ‘**Superseded Traffic Assessment**’); and

- (c) Proposed Cove Road North Precinct Provisions and Track Changes to Residential zone – UPDATED (Appendix 9a)

Clause 23 Response Documents

- (d) Applicant's responses to request for further information, specifically:
- (i) Engineering Outcomes' first response via email; and
 - (ii) Engineering Outcomes' second response, dated 22 March 2023.

3.2 I note that Mr Jongeneel has summarised the outcome of the meeting held between the Applicant and Flow on 27 April 2023, in Flow's RFI summary, attached as Appendix A.

3.3 Since then, the Applicant has provided a new Transport Assessment report prepared by Mr Peter Kelly of Traffic Planning Consultants Ltd (TPC), dated January 2024 and is referred to as the **New Transport Assessment**.

3.4 This New Transport Assessment has addressed some of my recommendations set out in my draft statement of evidence dated 05 December 2023 and supersedes the assessment by Mr Scanlen as set out in paragraph 3.1(b)

New Application Document

3.5 A meeting was held on 24 January 2024 between myself, representatives of NTA, and the Applicant's new transportation engineer, Mr Kelly, to discuss the outstanding matters and recommendations. I have summarised the outcome of the meeting, in Flow's RFI summary v2, attached as Appendix B (being an addition to Appendix A's unresolved matters) .

3.6 This statement of evidence includes the following:

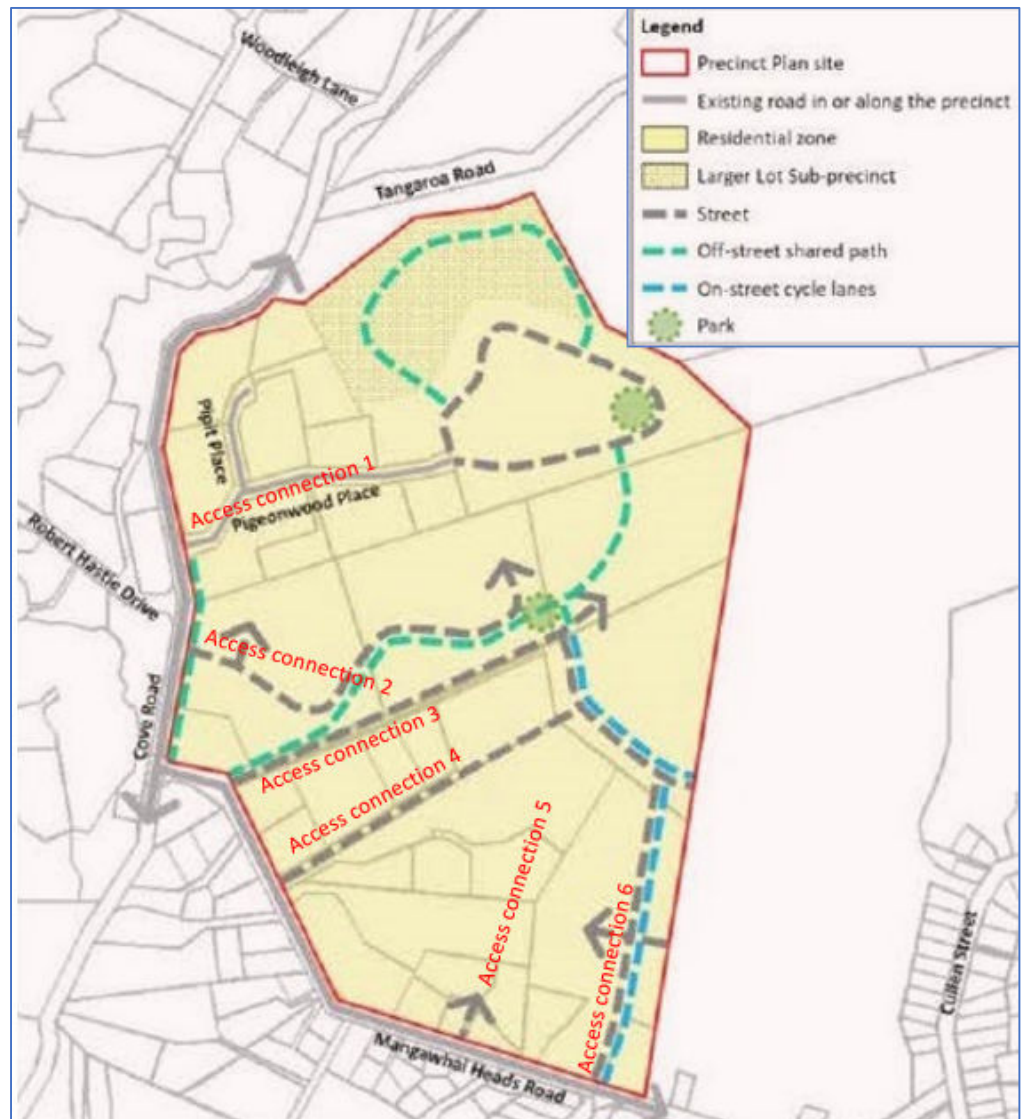
- (a) A summary of the PC83 proposal, focusing on transport matters;
- (b) A summary of the Applicant's assessment of transport effects;
- (c) A review of the relevant transportation material provided to support the application;

- (d) Summary of public submissions relating to transport matters only; and
- (e) My recommendations.

4. SUMMARY OF THE PROPOSED PRIVATE PLAN CHANGE 83

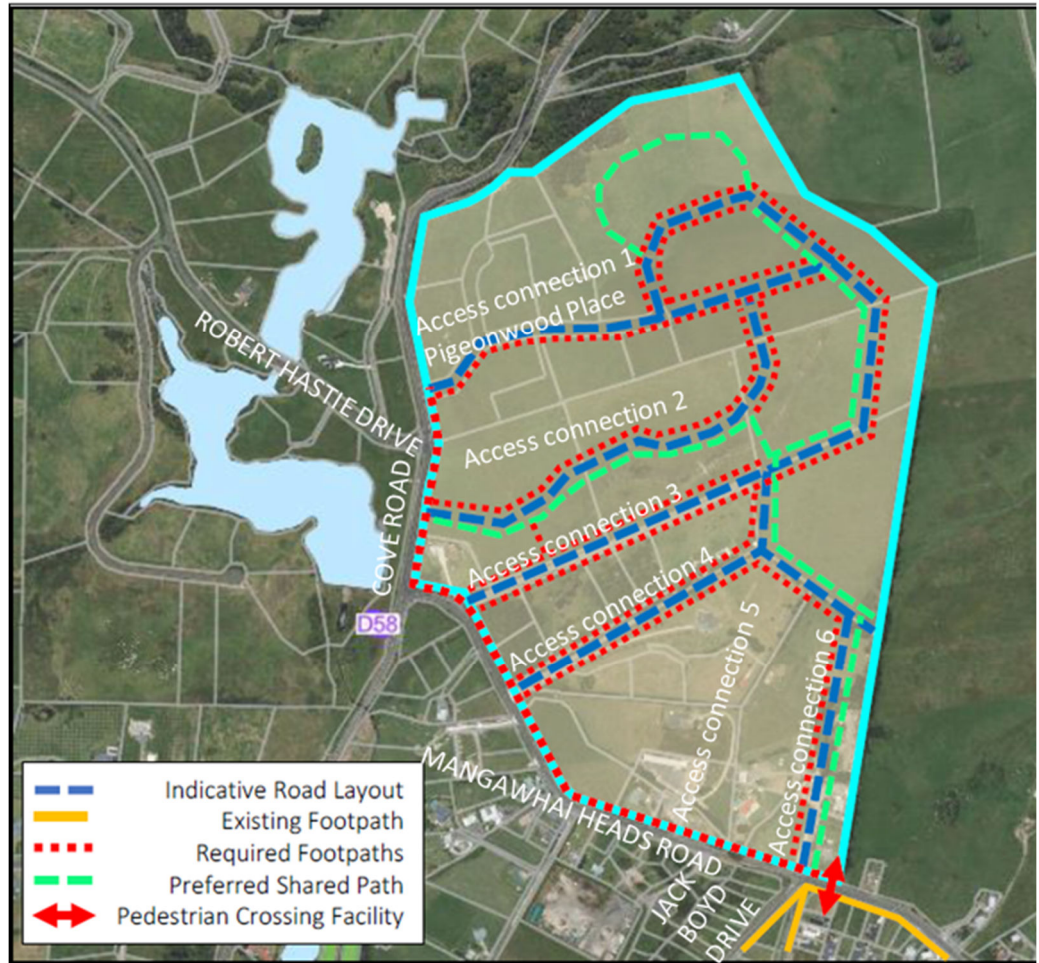
- 4.1 The site location and size, current planning zones and proposed zoning are summarised below:
 - (a) Site Location: The PC83 site is bounded by Mangawhai Heads Road forming the southern boundary with Cove Road forming the western boundary. The existing Residential Zone boundary forms the eastern boundary, being the cadastral boundary of existing allotments, which gains access from Pigeonwood Place from the northern boundary;
 - (b) Current Planning Zone: Rural;
 - (c) Proposed Planning Zone: Residential; and
 - (d) The PC83 includes 56.9 hectares of land.
- 4.2 The proposed PC83 area and indicative roading plan as set out in the superseded Traffic Assessment is shown in Figure 1 below.

Figure 1: PC83 area and Indicative Road Concept Plan



- 4.3 The new Transport Assessment includes a new indicative roading and walking and cycling network that varies from Figure 1. This is shown in Figure 2.
- 4.4 I understand that this supersedes the roading layout shown in Figure 1. I have superimposed the road names and access connection numbering for ease of reference.

Figure 2: PC83 indicative road and walking and cycling network included in the new Transport Assessment

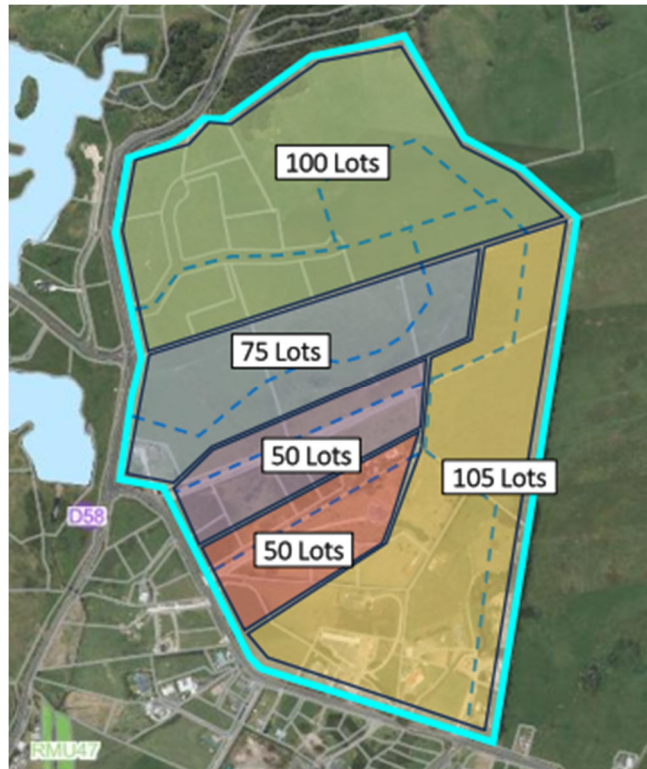


4.5 The proposed PC83 has the following transport and landuse characteristics:

- (a) There are 5 proposed and 1 existing roading connections to the external road network, namely (from north to south):
- (i) Access connection 1: Existing private access road, Pigeonwood Place;
 - (ii) Access connection 2: Proposed access road between Pigeonwood Place and Mangawhai Heads Road from Cove Road;
 - (iii) Access connection 3: Proposed access road just east of the Cove Road/Mangawhai Heads Road intersection from Mangawhai Heads Road;

- (iv) Access connection 4: Proposed access road between access connection 3 and Gumdiggers Lane from Mangawhai Heads Road;
 - (v) Access connection 5: Proposed access point between Gumdiggers Lane and Noel Close from Mangawhai Heads Road. I note that this access connection is not indicated in Figure 2, but Mr Kelly clarified in our meeting on 24 January 2024 that it is still intended to have this access connection, with the access connection servicing a limited number of lots;
 - (vi) Access connection 6: The proposed access road will intersect with Jack Boyd Drive and Mangawhai Heads Road; and
 - (vii) Connections to neighbouring property: One roading connection opportunity to the east of the Site, about 250 m north of Mangawhai Heads Road, and one further south, about 370 m north of Mangawhai Heads Road.
- (b) All of the indicative internal roads connect to all of the access connections, with no cul-de-sacs.
 - (c) A shared path internal to the PC83 area, connecting Mangawhai Heads Road to Cove Road through Access connection 6, 2 and 3 (part thereof).
 - (d) A footpath at the PC83 frontage on Cove Road and Mangawhai Heads Road and on all of the internal roads.
 - (e) There are five catchment areas within the PC83 area, that could enable the development of about 380 residential lots, as shown in Figure 3 below.

Figure 3: Indicative Lot Yield



- (f) Two reserve/park areas are located in the northeastern part of the PC83 area.

5. SUMMARY OF THE APPLICANT'S ASSESSMENT OF TRANSPORT EFFECTS

- 5.1 Appendix 4: Assessment of Traffic Effects prepared by Mr Dean Scanlen, dated 10 October 2023 of the Superseded Traffic Assessment, of the PC83 documentation provided an assessment of the traffic effects of the proposed PC83.
- 5.2 This has been superseded by the New Transport Assessment report by Mr Peter Kelly, dated January 2024. I have summarised both Mr Scanlen's and Mr Kelly's assessments of transport effects below.

Existing Traffic Environment and Traffic Generation

- 5.3 The Superseded Traffic Assessment predicts that traffic generation from the PC83 area is estimated at 5 to 6 movements per dwelling on an average day and 8 to 9 movements per day during holiday seasons, with a potential yield of about 380 residential lots. This equates to trip generation of about 1,600 to 1,700 vehicle movements on an average day and 2,500 per day during

summer holiday periods. The Superseded Traffic Assessment did not state the peak hour traffic generation, and I assumed that this was around 10% of the daily traffic.

- 5.4 To support the Superseded Traffic Assessment, traffic surveys were carried out on Robert Hastie Drive and Cove Road in late November 2021 on a Friday to estimate existing traffic generation and the origins and destinations of traffic.
- 5.5 On crash history, the Superseded Traffic Assessment reported that two crashes has occurred since 2017 along the PC83 frontage on Cove Road.
- 5.6 In contrast to the Superseded Traffic Assessment, the New Transport Assessment predicts that traffic generation from this area is estimated at 0.9 movements per dwelling during the peak hour and 8.2 per dwelling on an average day with a potential yield of about 380 residential lots. This equates to trip generation of 342 peak hour trips and 3,116 daily vehicle movements.
- 5.7 To support the New Transport Assessment, traffic surveys were carried out in October 2023 to understand the existing traffic volumes at the following intersections:
 - (a) Mangawhai Heads Road and Molesworth Drive;
 - (b) Mangawhai Heads Road and Jack Boyd Drive;
 - (c) Mangawhai Heads Road and Cove Road;
 - (d) Cove Road and Robert Hastie Drive; and
 - (e) Cove Road and Pigeonwood Place.
- 5.8 To estimate traffic on a Saturday, the busiest of the morning and evening peaks were factored by 1.25 to reflect the number of holiday homes in Mangawhai and increased weekend traffic.
- 5.9 The New Transport Assessment assumes that 65% of the generated traffic by the development enabled by PC83 will travel south to/from Mangawhai Heads and Mangawhai via Molesworth Drive, 25% will travel to/from the south via Cove Road and 10% will travel to/from the north. These assumptions were based on trip attractors in the area, census data and engineering judgement.

- 5.10 On crash history, the New Transport Assessment reports the following crashes have occurred in the vicinity of the PC83 site over that last 10 years:
- (a) Three crashes at the intersection of Cove Road/Mangawhai Heads Road. Two of these crashes were serious injury crashes and all were related to turning manoeuvres;
 - (b) One midblock crash on Cove Road resulting from a driver trying to overtake; and
 - (c) Five midblock crashes on Mangawhai Heads Road. Two crashes resulted in injuries, and all were related to either speed or loss of control.

Proposed Vehicle Access Provisions

- 5.11 The Superseded Traffic Assessment is vague in terms of vehicle access provisions but notes that the changes to the District Plan are meant to make sure that the area develops in a way that ensures all vehicle access points are suitable. One specific policy, PRECX-P3, focuses on creating a safe and connected network for pedestrians and transportation. Also, certain assessment criteria (under rules 13.14.2 and 13.14.3) will ensure that when people apply to divide or develop land, the plans adequately consider and provide for roads, cycling paths, and pedestrian walkways.
- 5.12 The New Transport Assessment includes a series of indicative road network and walking and cycling facilities within the PC83 land as shown previously in Figure 2.
- 5.13 In respect to the policy PRECX-P3, both the Superseded Traffic Assessment and New Transport Assessment fails to outline the policy, and I refer to the Proposed Cove Road North Precinct Provisions and Track Changes to Residential zone – UPDATED (Appendix 9a), which outline the following:
- (a) *“PRECX-P3 - Cove Road North Precinct Connectivity*

Require land use and subdivision to achieve a connected, legible and safe, open space, pedestrian and transport network in the Cove Road North Precinct by:

1. Establishing a well-connected street network.

2. Promoting connections along and adjacent to natural features and open spaces.

3. Maximising walking and cycling networks along streets, waterways and open space.”

Assessment of Traffic Effects

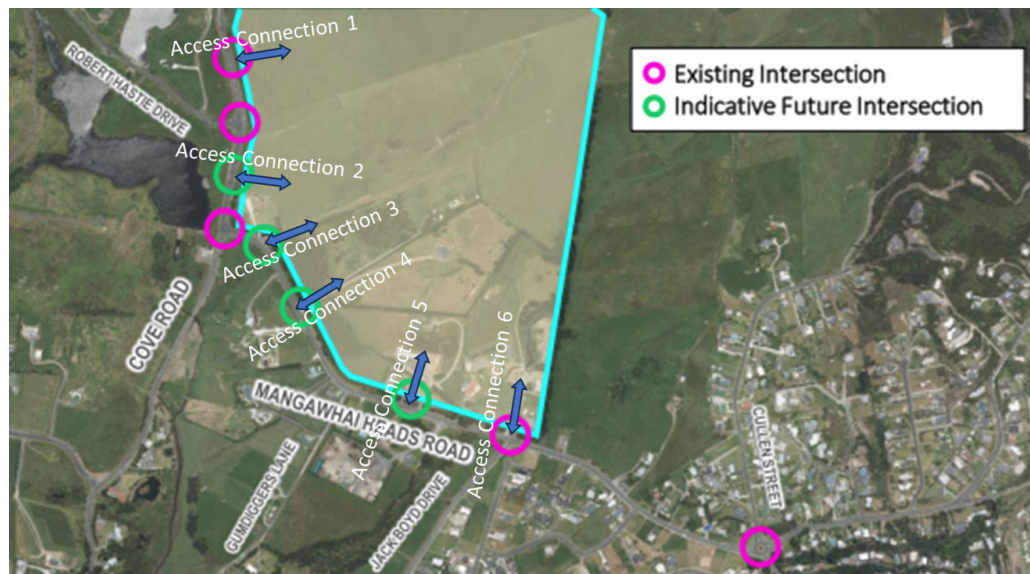
- 5.14 The assessment of traffic effects for the precinct area as outlined in the Superseded Traffic Assessment suggests that the Precinct area's external environment, including traffic infrastructure, is well-equipped to handle future development and traffic demands. No traffic modelling was carried out as part of this assessment nor any upgrades identified.
- 5.15 The assessment of traffic effects as outlined in the New Transport Assessment is more thorough and is based on SIDRA Intersection modelling of the key intersections to the PC83 site. The key intersections that were modelled include:
- (a) Cove Road and Pigeonwood Place;
 - (b) Cove Road and Robert Hastie Drive;
 - (c) Cove Road and Access connection 2;
 - (d) Mangawhai Heads Road and Cove Road;
 - (e) Mangawhai Heads Road and Access connection 3;
 - (f) Mangawhai Heads Road and Access connection 4;
 - (g) Mangawhai Heads Road and Jack Boyd Drive / Access connection 6; and
 - (h) Mangawhai Heads Road and Molesworth Drive;
- 5.16 The following scenarios were modelled for the morning (AM) and evening (PM) peaks hours as well as the Saturday peak hour.:
- (a) Baseline or Without PC83 development 2034 scenario of the operation of the existing intersections using a 2% growth assumption per annum of traffic of the surrounding road network;
 - (b) With PC83 development 2034 scenario of the operation of the existing layout of the intersections including the traffic that is predicted to be generated by development enabled under PC83 ; and

- (c) 2034 sensitivity scenario whereby the existing traffic volumes were increased by a factor of 1.5 and background growth factor of 1.27. Traffic generated by PC83 area was increased by 1.5 (equivalent to the development of approximately 570 lots).
- 5.17 The New Transport Assessment concluded that the modelling predicted that all intersections would perform well without the need to upgrade any intersections for operational purposes, and that any improvements are only for safety improvements (as outlined in the Preliminary Safe System Section below). The exception to the above is the Mangawhai Heads Road / Jack Boyd Drive / Access connection 6 intersection where the sensitivity test indicated a delay of 40 seconds for the right turns out of Jack Boyd Drive.

Preliminary Safe System Assessment

- 5.18 The New Transport Assessment also completed a preliminary Safe System Assessment (SSA) of all the existing and proposed intersections in the vicinity of the PC83 area. These intersections are outlined in Figure 4 below:

Figure 4: SSA Study Area



- 5.19 The New Transport Assessment notes that no SSA assessments were carried out for intersections which are anticipated to be constructed as a result of PC83, as detailed designs / locations of potential intersections are unknown at this stage, and recommended that as part of the preliminary design process of any subsequent subdivision or road creation that an SSA be carried out. As such, a SSA of only the existing intersections layouts outlined in Figure 4 above were considered.

- 5.20 A total of six scenarios were considered for each of the existing intersections, namely:
- (a) Without identified improvements:
 - (i) Existing typical traffic;
 - (ii) Existing peak period traffic; and
 - (iii) With proposed development enabled under PC83.
 - (b) With identified improvements:
 - (i) Existing typical traffic;
 - (ii) Existing peak period traffic; and
 - (iii) With proposed development enabled under PC83.
- 5.21 Each scenario considered three categories, namely the exposure, likelihood and severity of a crash to occur at the given intersection. The crash types considered included run-off-road, head-on, intersection, other, pedestrian, cyclist and motorcycle crash types.
- 5.22 The New Transport Assessment considers that an intersection which scores less than 84, typically (based on a score of 2 (exposure) x 2 (likelihood) x 3 (severity) for each category), does not require remedial measures.
- 5.23 I have summarised the SSA scores for each of the existing intersections in Table 1 below:

Table 1: Existing Intersections' SSA Scoring (out of 448)

Scenarios		Intersection name				
		Cove Road / Pigeonwood Place	Cove Road / Robert Hastie Drive	Cove Road / Mangawhai Heads Road	Mangawhai Heads Road / Jack Boyd Drive	Mangawhai Heads Road / Molesworth Drive
<u>Without</u> Identified Improvements	Existing Typical Traffic	62	66.25	70.5	68.5	60.75
	Existing Peak Period Traffic	66.25	66.25	74.75	71.75	66.25
	With Proposed Development	86.5	86.5	95	78.25	66.5
<u>With</u> Identified Improvements	Existing Typical Traffic	46	49.25	52.5	41.5	60.75
	Existing Peak Period Traffic	49.25	49.25	55.75	43.25	66.25
	With Proposed Development	65.5	64.5	71	46.75	66.5

Proposed Mitigation Measures

5.24 The New Transport Assessment concludes the following safety related mitigation measures are required to be implemented in conjunction with PC83. These measures are subject to further investigation and feasibility at resource consent stage:

- (a) Existing intersection improvements:
 - (i) Cove Road and Pigeonwood Place:
 - (aa) Install a right-turn bay into Pigeonwood Place; and
 - (bb) Install a give-way sign on Pigeonwood Place.
 - (ii) Cove Road and Mangawhai Heads Road:
 - (aa) Upgrade of southbound left-turn lane from Cove Road into Mangawhai Heads Road with a full width auxiliary lane

- (iii) Mangawhai Heads Road and Jack Boyd Drive / Access connection 6:
 - (aa) Upgrading of intersection to have auxiliary turn lanes, or be formed as a roundabout.
- (b) Proposed intersections:
 - (i) The design of any future intersection should be carried out by a professional design team, and independent SSA auditor, as well as with input from Council and NTA; and
 - (ii) All future intersections requires a dedicated right-turn lane to connect to the side street.
- (c) General road network:
 - (i) Reduce the speed limit on Cove Road from the current 80 km/h to 50 km/h or 60 km/h from approximately 250 metres south of Mangawhai Heads Road to 250 metres north of Pigeonwood Place;
 - (ii) Fill in of open swales to enable footpath construction; and
 - (iii) Installation of streetlighting along sections of Pigeonwood Place;
- (d) Pedestrian and cyclist facilities:
 - (i) All internal roads should have footpaths on both sides of the road (except for a section of access connection 1 / Pigeonwood Place); and
 - (ii) A footpath is indicated on the PC83 frontage on Mangawhai Heads Road and Cove Road. Due to the current land limitations on the corner of Mangawhai Heads Road / Cove Road intersection, the provision of a shared path is not feasible within the current road reserve width. Instead, a shared path is proposed internal to the PC83 land.

6. MY REVIEW OF THE TRANSPORT EFFECTS

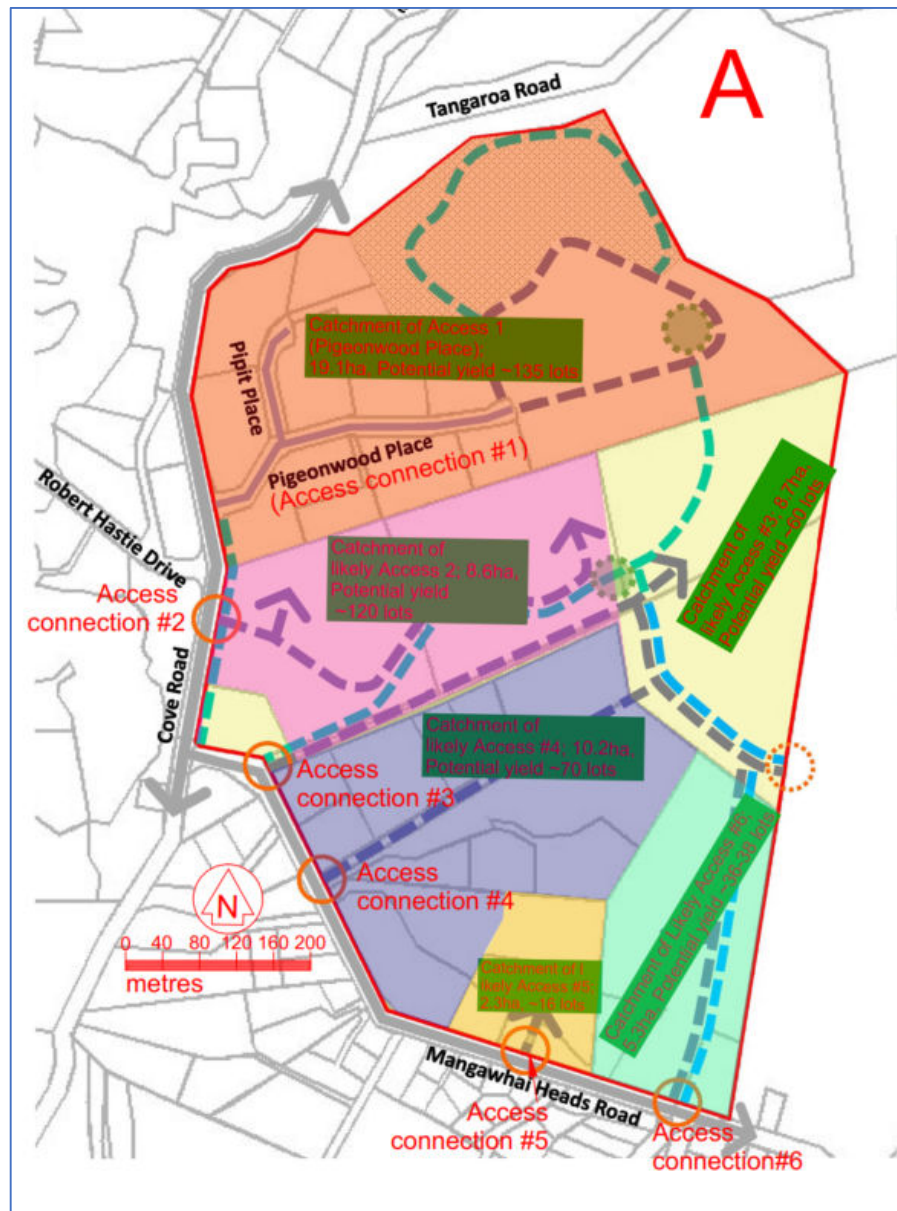
6.1 On the 20 December 2023, NTA issued a Clause 23 request for further information containing 18 points. These are summarised in Table 1 of Flow's RFI summary. I note that these are based on the review of the Superseded Traffic Assessment report dated October 2023.

6.2 During the first round of RFI's, Mr Jongeneel made three general recommendations in the body of the report and several more specific recommendations in table format (dated 15th March 2023). I note that the Applicant has only formally responded to the three general recommendations at that time, which I summarised below.

Recommendation 1 - Detailed Transport Plan for the Precinct

6.3 Mr Jongeneel recommended updating the Traffic Assessment to provide a more detailed transport plan for the PC83 Precinct. The Applicant responded that the requested details are provided in the indicative roading and catchment plan, superimposed onto the road and pathway network plan. The layout demonstrates distributed traffic points rather than concentrated intersections, as shown in Figure 5 below:

Figure 5: Indicative roading and catchment plan



- 6.4 Mr Jongeneel then suggested incorporating the transport plan into the District Plan for future development guidance and consent assessment. I agree with Mr Jongeneel's recommendation.
- 6.5 The above indicative roading plan has now been superseded by the plan provided in the New Transport Assessment prepared by Mr Kelly (shown previously in Figure 2). The indicative lot yields is also shown in Figure 3.
- 6.6 I am generally in favour of the roading network layout proposed by Mr Kelly, however, I remain of the view that a shared path should be provided on Mangawhai Heads Road and Cove Road along the PC83 frontage to provide the best outcome for developments within the PC83 area and the

surrounding community in case the internal shared path proposed is deferred / does not go ahead.

- 6.7 I consider that the existing intersection of Mangawhai Heads Road and Cove Road could be redesigned to an urban form, that could see additional space provided for a shared path.
- 6.8 A shared path on Mangawhai Heads Road and Cove Road will provide a resilient connected pedestrian and cyclist network, irrespective of staging of development within the PC83 area.

Recommendation 2 - New intersections on Cove Road and Mangawhai Heads Road

- 6.9 Mr Jongeneel recommended SIDRA modelling and Safe System Assessments to be carried out for proposed intersections on Cove Road and Mangawhai Heads Road. The Applicant asserted that SIDRA modelling was unnecessary as the existing intersections will be able to handle the additional traffic demands adequately and claims future intersections are adequately accounted for in the traffic report.
- 6.10 I agree with Mr Jongeneel's recommendation, and as such I disagree with the Applicant's previous view that SIDRA modelling is not required. I consider that there is a need for intersection assessments at this stage so that the overall traffic impact of PC83 can be understood, as this may or may not have an influence on the required Precinct provisions.
- 6.11 The Applicant's New Transport Assessment has now included SIDRA modelling of the existing and proposed intersection on Cove Road and Mangawhai Heads Road, as was originally requested by Mr Jongeneel.
- 6.12 Based on the assessment, I agree with the conclusions in the New Transport Assessment report that the operation of the intersections will not be significantly impacted by development enabled under PC83. Notwithstanding this, the New Transport Assessment noted that, as part of subsequent stages, further traffic analysis will need to be carried out to confirm that the intersections will perform satisfactorily as development staging progresses, especially if the indicative road network plan drastically differs as presented to me to date.
- 6.13 The intersection of Mangawhai Heads Road / Jack Boyd Drive / Access connection 6 is identified in the New Transport Assessment as needing to be upgraded to either having auxiliary turning lanes or a roundabout. Since this

will be a four-legged intersection in its future form, I recommend this intersection be formed as an urban roundabout with pedestrian and cyclist crossing facilities on all four legs.

- 6.14 I consider a roundabout to be a safe intersection outcome that will serve the existing roading network as well as the PC83 area well, with good safety outcomes for all road users.

Recommendation 3 - Council to include Transport Upgrades in the Precinct rules

- 6.15 Mr Jongeneel recommended the Council include required transport upgrades in the Precinct rules, specifying triggers for delivery. The Applicant disagreed, stating that the proposed rules ensure a suitable internal road network and that potential lower-standard roads near existing ones are not unique to this proposal.
- 6.16 Mr Jongeneel then reiterated the need for further assessment of the PC83 Precinct's impact on the surrounding road network and maintained the recommendation for incorporating transport upgrades in the District Plan. I agree with Mr Jongeneel regarding the above.

Meetings with the Applicants Transport Engineers

- 6.17 On 27 April 2023, a meeting was held between the NTA, the Applicant's transportation engineer, and Flow (Mr Jongeneel attended) to discuss the outstanding matters and recommendations. The outcome of this meeting is summarised in Flow's RFI summary, attached as Appendix A.
- 6.18 I note that all but 7 matters were resolved. Some matters are "not resolved" and matters that are "potentially resolved, subject to further information to be supplied at the hearing."
- 6.19 Following the above, a meeting was held on 24 January 2024 between myself, representatives of NTA and the Applicants transport engineer, Mr Kelly, to discuss the outstanding matters as well as the outcomes of the New Transport Assessment. I have summarised the outcome of the meeting, in Flow's RFI summary v2, attached as Appendix B.

Accuracy of traffic counts

- 6.20 The traffic counts used in the Superseded Traffic Assessment were undertaken during COVID-19 alert levels, which are likely not to provide a

reliable baseline on which to assess the traffic effects of PC83. Mr Jongeneel recommended that the Applicant redo traffic counts on a normal school day to confirm baseline conditions.

- 6.21 The New Transport Assessment has now included traffic count data from October 2023. During the meeting on 24 January 2024, this survey was clarified to have been carried out during late in October 2024 outside of the school holiday period. I am satisfied that this is representative of traffic volumes for a typical weekday.
- 6.22 The New Transport Assessment assumes that Saturday peak traffic volumes are 1.25 times greater than the recorded weekday peak hour. During our 24 January 2024 meeting I questioned the basis of this assumption, as the Superseded Traffic Assessment assumed traffic volumes during the holiday periods to be in the order of 50% compared to a typical weekday. Mr Kelly agreed to clarify his assumption through his statement of evidence.
- 6.23 For the purposes of determining the operational capacity of the key intersections associated with PC83, I am of view that the 1.25 factor Mr Kelly used in his SIDRA modelling is appropriate, and unlikely to drastically change the outcome of the capacity results. However, for the purpose of Mr Kelly's safety assessment of the key road frontages associated with PC83 (more specifically the SSA), I consider that a factor of 1.5 should be used as a sensitivity test for traffic volume exposure along the PC83 frontage. This may impact the outcome of the SSA results.

Intersections - SIDRA modelling

- 6.24 Two existing intersections (Mangawhai Heads Road/Cove Road and Mangawhai Heads Road/Molesworth Drive/Cullen Street) were assessed in the Superseded Traffic Assessment. The results of the modelling suggested the traffic demands generated by PC83 could be accommodated by the existing design of the intersections. However, Mr Jongeneel believed that the COVID-19 baseline traffic counts used in this modelling underestimated the traffic demands. Mr Jongeneel recommended updating the SIDRA modelling for these intersections with recent traffic counts only if the updated traffic count baseline differs from the COVID-19 counts. I agree with Mr Jongeneel in this respect.
- 6.25 In reviewing the above SIDRA modelling, I believe the Applicant's superseded assessment has a calculation error estimating the trip

generation of PC83, being estimated at 1,600 to 1,700 vehicle movements on an average day and 2,500 per day during summer holiday periods.

- 6.26 I note that the traffic demands calculated by the Applicant's superseded assessment are based on a lot size of 1,000 m² in the PC83 area as well as applying a 70% coverage over the 56.9 ha PC83 area. The yield was estimated to be in the order of 380 lots.
- 6.27 Using the above parameters, I calculated the following:
- (a) The yield to be 398 lots;
 - (b) The estimated trip generation to be 1,992 to 2,390 vehicle movements on an average day; and
 - (c) The estimated trip generation to be 3,186 to 3,585 vehicle movements during summer holiday periods.
- 6.28 The Applicant's superseded assessment underestimated the trip generation by 25% (lower bound) to 40% (upper bound), which I consider to be a significant number.
- 6.29 I further note that If the lots are smaller than a 1,000 m², resulting in additional dwellings being provided, then the overall traffic generation of PC83 will also increase.
- 6.30 In addition to Mr Jongeneel's initial recommendation, I recommended that the SIDRA modelling for the intersections be updated to reflect the rectified trip generation calculations and new traffic counts.
- 6.31 The New Transport Assessment has included modelling of a total of 8 intersections (existing and proposed) on Cove Road and Mangawhai Heads Road using the late October 2023 traffic data as the baseline conditions.
- 6.32 The trip generation used in New Transport Assessment is based on 54 ha of land; 380 residential lots ranging in size between 600 to 1,000 m² and a trip rate of 0.9 peak hour trips and 8.2 daily trips per dwelling. This equates to 3,116 daily trips and 342 peak hour trips.
- 6.33 There is a small discrepancy in the total land size used New Transport Assessment and the proposed PC83 area being 56.9 ha.

- 6.34 However, I am satisfied that the estimated peak hour trips used in the New Transport Assessment, represent the likely traffic volumes generated by PC83 and that the results of the SIDRA modelling are reliable.

Safety assessments and proposed mitigation measures

- 6.35 Mr Jongeneel recommended that the Applicant complete Safe System Assessments for the two intersections (Mangawhai Heads Road/Cove Road and Mangawhai Heads Road/Molesworth Drive/Cullen Street) to understand the impact of the PC83 on the safety of these intersections. This assessment should include assessing the additional traffic and pedestrian/cyclist volumes enabled by PC83. Mr Jongeneel was comfortable with the assessment of a roundabout being undertaken for pedestrians and cyclists only, as the roundabout treatment is safe for most vehicles. I agree with Mr Jongeneel.
- 6.36 I also have concerns about the intersection spacing along Cove Road, namely between the existing Robert Hastie Drive, existing Pigeonwood Place and the proposed road intersections on Cove Road. The Safe System Assessment should consider this section of Cove Road as a whole to identify any mitigation measures that may be required to address any safety concerns identified through the assessment.
- 6.37 The New Transport Assessment report now includes a Safe System Assessment of 5 existing intersections; Cove Road/Pigeonwood Place, Cove Road/Robert Hastie Drive, Cove Road/Mangawhai Heads Road, Mangawhai Heads Road/Jack Boyd Drive and Mangawhai Heads Road/Molesworth Drive/Cullen Street roundabout and identifies upgrades needed to each one. (as outlined in 5.24 previously).
- 6.38 I agree with Mr Kelly's recommendation in the New Transport Assessment to lower the speed limit on Cove Road, and recommend it to be 50 km/h. I also recommend extending this lower speed limit to Mangawhai Heads Road, where it is currently 60 km/h at the PC83 frontage, between Cove Road and Noel Close.
- 6.39 However, I understand the mechanism to undertake a speed limit change is complex and not within the Applicant's realm. During the meeting on 24 January 2024, Ms Elizabeth Stacey from NTA informed us that any speed limit change is based on the existing built environment, rather than the future environment. On this basis, it may not be possible to lower the speed limit along the PC83 frontage prior to any development and urbanisation of the

road frontages (i.e., the built form of the road frontages should reflect the proposed speed limit).

- 6.40 I am of view that the Applicant should assess if any additional safety mitigation measures may be required if the speed limit change is unsuccessful and the speed limit remains at 80km/hr.
- 6.41 I also have noted my concern around the speed limit change to Mr Kelly during our 24 January 2024 meeting, and requested Mr Kelly to assess a scenario where the speed limit would remain unchanged and I understand that Mr Kelly will address this through his statement of evidence.
- 6.42 In addition to the above, Mr Kelly's SSA has not included an assessment of the intersection spacing on Cove Road, as per paragraph 6.36 above. During our 24 January 2024 meeting, I recommended that the SSA considers intersections spacing on Cove Road. In particular, I am concerned about the safety implications of the potential for right turning traffic to cross each other on the right turn bay/flush median at Robert Hastie Drive and Pigeonwood Place.
- 6.43 I generally agree with the proposed upgrade to install a right turn bay into Pigeonwood Place but the intersection may be more suitable as a 'STOP' control rather than a give-way control, especially considering that speed limit environment on Cove Road may remain at 80 km/h.
- 6.44 I disagree with the New Transport Assessment's proposed recommendation that Cove Road / Mangawhai Heads Road should be upgraded with a southbound left turn lane into Mangawhai Heads Road. In my opinion, the installation of this turning lane could pose additional traffic safety risks, specifically that left-turn vehicles could mask vehicles that wish to continue through the intersection behind them. The crash history suggest that this was a cause for one of the crashes recorded at this intersection. I recommend the intersection to be upgraded to a safe urban form, that would enable future active mode connections and manage speeds through the intersection.
- 6.45 In my opinion the intersection of Mangawhai Heads Road / Jack Boyd Drive / Access connection 6 should be formed as an urban roundabout with active mode crossing facilities across all legs. I consider an urban roundabout to have better safety outcomes for all road users compared to that of a four-way intersection, as it would manage the speed through the intersection.

- 6.46 Furthermore, I recommend the Precinct provisions include a trigger that ensures the required intersection upgrades are in place before the occupation of any new dwelling in the PC83 area. Specifically, each dwelling should have safe vehicle and active mode connections to the existing road network environment (including connections to existing roads, footpaths and/or shared paths).

One-lane bridge

- 6.47 The Applicant provided an assessment of the Cove Road (south of Mangawhai Heads Road) one-lane bridge's performance in the Superseded Transport Assessment, but it lacks clarification on the anticipated vehicle movements from development enabled by PC83. Mr Jongeneel recommended that the Applicant estimate the peak-hour vehicle movements generated by the development enabled by PC83 for this bridge.
- 6.48 The Applicant provided no further information on this matter. However, Mr Jongeneel accepted that the additional traffic associated with PC83 is unlikely to have a significant effect on the bridge's operation. I agree with Mr Jongeneel.

Walking and cycling connectivity

- 6.49 The Applicant's previous transport plan lacked a connection to the existing footpath on Mangawhai Heads Road, which is necessary for PC83 Precinct residents to walk and cycle. Mr Jongeneel recommended that the Applicant update the plan to include sealed walking and cycling facilities along Cove Road and Mangawhai Heads Road, as well as safe pedestrian crossings.
- 6.50 At the 27 April 2023 meeting, the Applicant's previous transport engineer agreed to provide an amended indicative transport plan through the Hearing process.
- 6.51 In Mr Jongeneel's view, a footpath/shared path on the site's frontages on Cove Road (south of Pigeonwood Place) and on Mangawhai Heads Road as well as a safe pedestrian connection across Mangawhai Heads Road, between the above footpath/shared path to the existing footpath east of Jack Boyd Drive is crucial to address the walking and cycling connectivity associated with PC83. I agree with Mr Jongeneel's view.
- 6.52 In Mr Kelly's New Transport Assessment, a shared path is proposed internal to the PC83 area (refer to Figure 2), however only a footpath is proposed on the northern side of Mangawhai Heads Road and the eastern side of Cove

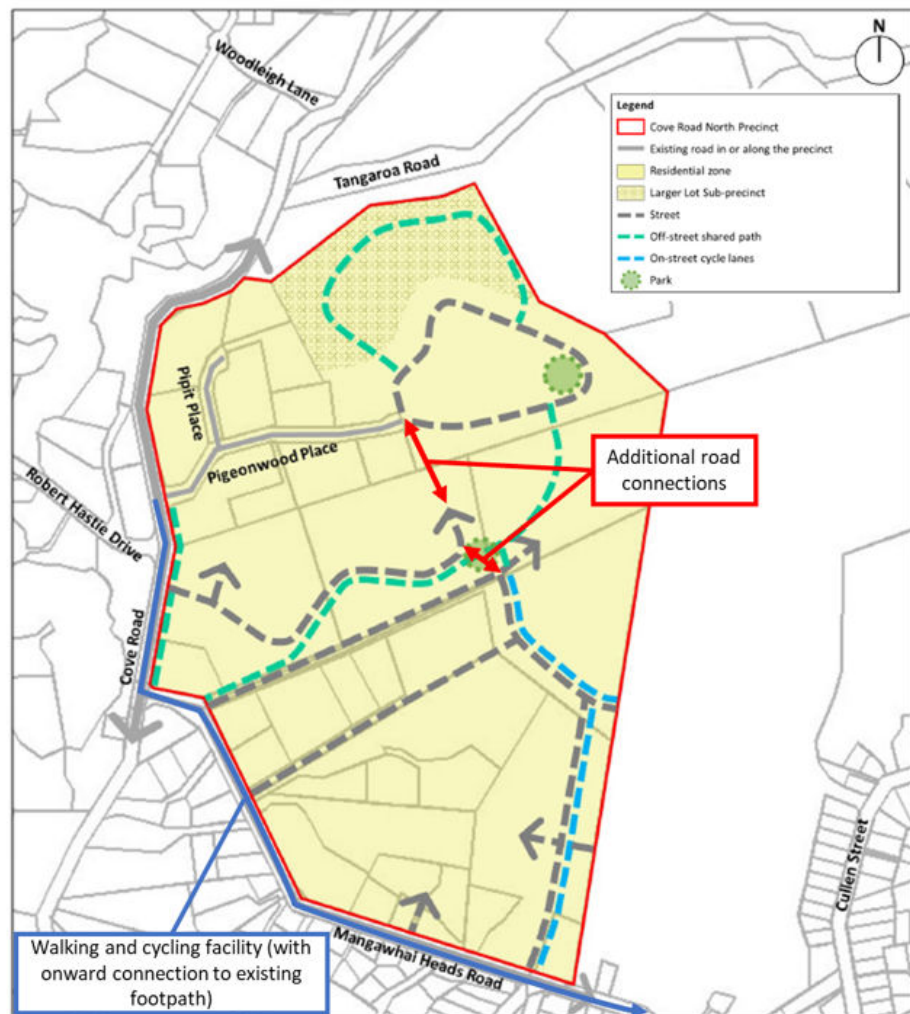
Road, along the PC83 frontages, and not a shared path. Mr Kelly notes that there is limited width on the road reserve on the northeast corner of the existing Cove Road / Mangawhai Heads Road intersection.

- 6.53 For a resilient and connected network, I recommend that a shared path is provided on Cove Road / Mangawhai Heads Road. It is especially important to provide the appropriate provisions for pedestrians and cyclists, in case the internal (internal to PC83 area) shared path network is deferred.
- 6.54 I consider a raised active mode crossing (or equivalent primary Safe System treatment facility) across Mangawhai Heads Road east of Jack Boyd Drive to provide a safe crossing point for pedestrians and cyclists. If my recommendation of upgrading this intersection to a roundabout is implemented, this crossing facility could form part of the roundabout design.
- 6.55 Furthermore, I recommend the Precinct provisions include a trigger that ensures the transport infrastructure is in place before the occupation of any new dwelling in the PC83 area. Specifically, each dwelling should have safe vehicle and active mode connections to the existing road network environment (including connections to existing roads, footpaths and/or shared paths).

Road network connectivity

- 6.56 The Applicant's previous transport plan displays three separate street networks without connections between them. Mr Jongeneel suggested that better connectivity within the PC83 area can be achieved by adding street connections, as shown by the red arrows in Figure 6 below.
- 6.57 Mr Jongeneel's recommendation to the Applicant was to update the transport plan to include these street connections within the Precinct. Once updated, the Council can make these improvements mandatory in the Precinct rules, specifying when they should be implemented. I agree with Mr Jongeneel's recommendation.

Figure 6: Proposed changes to indicative transport network



- 6.58 At the 27 April 2013 meeting, the Applicant's previous transport engineer agreed to provide an amended indicative transport plan through the Hearing process.
- 6.59 The Applicant has now included an indicative roading network as part of the New Transport Assessment which addresses Mr Jongeneel's recommendations. This is shown in Figure 7 below.

Figure 7: Proposed PC83 roading network

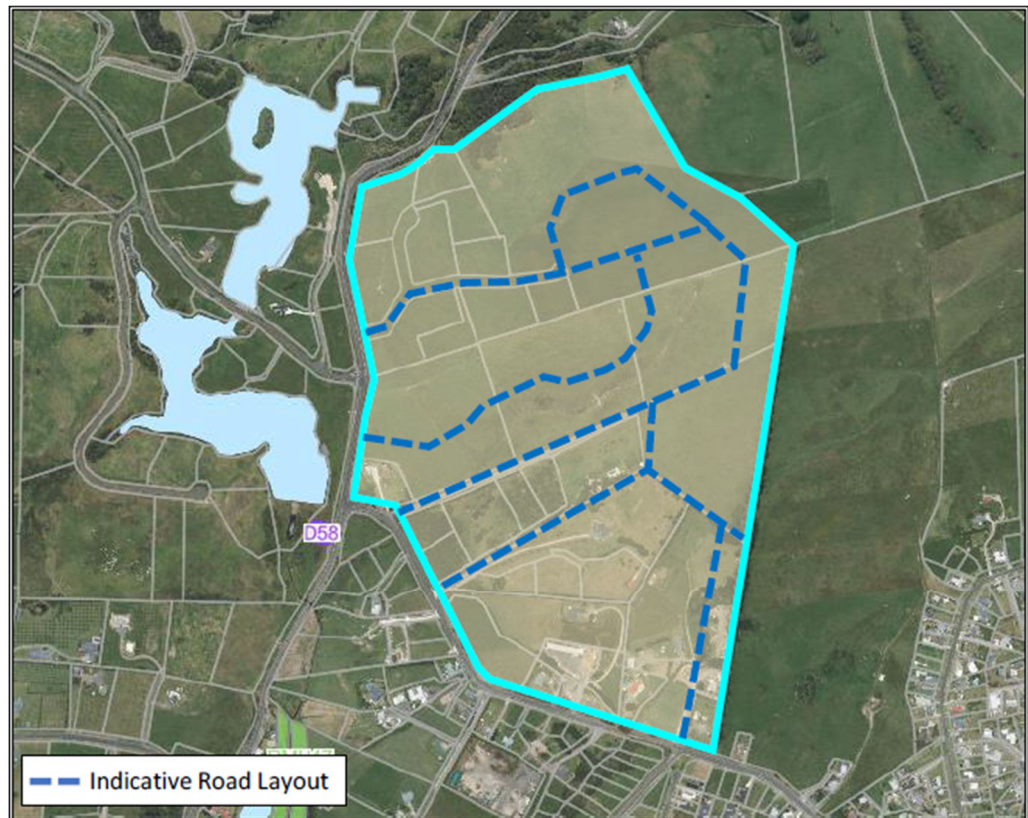


Figure 7: Conceptual Road Network

**Internal road network and road connection locations subject to change following detailed design*

6.60 I am satisfied with this proposed roading network.

Proposed Precinct rules

6.61 Mr Jongeneel proposed the following Precinct rules to be included in the District Plan provisions:

- (a) Setbacks for buildings to be a minimum of 4.5 m from the road boundary or shared accessways;
- (b) Discretionary or non-complying status for commercial and industrial activities;
- (c) Maintaining an average lot size of 1,000 m² per subdivision stage; and
- (d) Amending the wording in Rule 13.14.2(2) related to road, cycling, and pedestrian connections in the Cove Road North Precinct Plan to the following:

“Council will have regard to the following additional matters when considering an application for resource consent under this rule

within the Cove Road North Precinct: The extent to which any road, cycling and pedestrian connections create connectivity throughout the Precinct and residential land beyond the Precinct.”

- 6.62 At the 27 April 2023 meeting, there was no further discussion on these matters. However, Appendix09 of the PC83 application documents includes updated Precinct provisions that fully address (d) above but remain unclear on (a), (b) and (c). I recommend the Applicant include these rules in the Precinct provisions.
- 6.63 During the recent January 2024 meeting, Mr Kelly and I discussed the inclusion of Precinct provisions that relate to infrastructure implementation with appropriate triggers associated with the upgrade requirements of the road network.
- 6.64 Mr Kelly was of view that it may be unsuitable, for example, if a development of only a couple of dwellings triggers the need for the whole roading network to be implemented. I disagree with Mr Kelly in this respect, and consider that appropriate triggers must be in place to ensure each dwelling in the PC83 will have safe active mode and vehicle access.
- 6.65 I am of view that without appropriate triggers, development within the PC83 area is likely to occur without the implementation of the required infrastructure, especially if the subdivisions are of small scale.
- 6.66 In the event that no such triggers are present in the Precinct provisions, I consider that the cumulative effects associated with potential balance lots in the PC83 area should be consider in all subdivision Transport Assessments.

7. SUBMISSION REVIEW

- 7.1 I have reviewed Council’s summary of submissions and further submissions to PC83 relating to transport matters. A total of 30 submissions raised transport matters, of which the key themes identified in the submissions include:
- (a) the limited capacity of the existing road network and the potential increased traffic resulting from PC83 creating congestion, including a concern that the traffic assessment undertaken is not adequate and does not represent the current traffic volumes nor reflects the

anticipated traffic generation of the PC83 as proposed, and that current roading infrastructure is not sufficient¹;

- (b) the support for proposed off-street footpaths and/or cycleways on Cove and Mangawhai Heads Road²;
- (c) the need for more walking and cycling connections and facilities, including external connections for walking/cycling infrastructure³;
- (d) the safety of traffic and pedestrians (including children), including the need for a roundabout at the Mangawhai Heads Road/Cove Road intersection and an alternative form of intersection off Cove Road serving the PC83 area⁴; and
- (e) concerns that the proposed roading and cycling network for the PC83 area may not be feasible and/or that on-site roads should be finalised through PC83 prior to subdivision as some roads/cycleways traverse through existing properties⁵.

7.2 I respond to each of these points below.

Capacity of the existing road network

7.3 Multiple submitters have raised concerns that the existing transport network is not capable of supporting the development that PC83 will enable and that the traffic volumes in the Traffic Assessment do not represent the current traffic volumes nor reflect the anticipated traffic generation of the PC83 as proposed.

7.4 The Applicant's transport engineer, Mr Kelly, has assessed the existing and proposed intersections based on the future traffic growth of the area based on traffic counts taken in October 2023 and PC83 enabling the development of 380 lots. He has concluded that the intersections as existing will operate adequately. I agree with his conclusions.

7.5 Based on the sensitivity testing Mr Kelly has done, Mangawhai Heads Road / Jack Boyd Drive / Access connection 6 may need to be upgraded to reduce

¹ Submitters A. and J. Robb, A. Mostert, B. Ramsay Turner and P. Rogers, B. Ashton, Bream Tail Residents Association and Northern Farms Limited (c/- CPPC Planning), D. Cornelius and O. Rowan, D. Annandale, E. Walker, J. Warden and A. Baird, K. Sutherland, Mangawhai Matters Society Incorporated, M. and A. Geary, P. and A. Maroulis, P. and K. Barbour, R. Blake, S. and C. Brotherton, S. Birkenhead

² Submitters A. Mostert, Sanctuary Residents Association, B. Prangle, J. Hook, J. Coop

³ Submitter K. Sullivan and S. Powley, P. and K. Barbour, S. Bray, S. Birkenhead

⁴ Submitters Sanctuary Residents Association, J. and J. Horlock, K. Sullivan and S. Powley, P. and K. Barbour, R. Kitchener, S. Mackey- Wood, S. Bray

⁵ Submitters C. Boonham, Mangawhai Matters Society Incorporated, M. and A. Geary, P. Humphries, R. Humphries, T. Gardner

delays for vehicles turning out of Jack Boyd Drive. I agree with this conclusion and recommend that the intersection be upgraded to a roundabout.

7.6 I generally agree with Mr Kelly's proposed mitigation measures for the other intersections, however, I consider that the form of the intersections will need further assessment in light of the speed limit that may be in place at the time of implementation.

7.7 I recommend that the precinct provisions include triggers as to when the respective intersections and active mode connections are required.

Support for proposed off-street footpaths and/or cycleways

7.8 A few submitters are in support of the proposed off-street footpaths and/or cycleways on Cove Road and Mangawhai Heads Road.

7.9 I note that the Applicant only included a shared path internal to the PC83 site and did not extend it to the existing network on Cove Road and Mangawhai Heads Road.

7.10 I am supportive of the proposed shared paths internal to the PC83 area as well as an active mode crossing across Mangawhai Heads Road, between the above footpath/shared path to the existing footpath east of Jack Boyd Drive.

7.11 I recommend the implementation of the shared path along the PC83 frontages on Cove Road (south of Pigeonwood Place) and on Mangawhai Heads Road, as it is crucial to address walking and cycling connectivity associated with development within the PC83 area.

Need for more walking and cycling connections and facilities

7.12 Some submitters have raised the need for more walking and cycling connections and facilities, including external connections for walking/cycling infrastructure.

7.13 I agree with these submission points as outlined in paragraph 7.10 above.

Safety of traffic and pedestrians

7.14 Several submitters have identified concerns about the safety of traffic and pedestrians (including children), including the need for a roundabout at

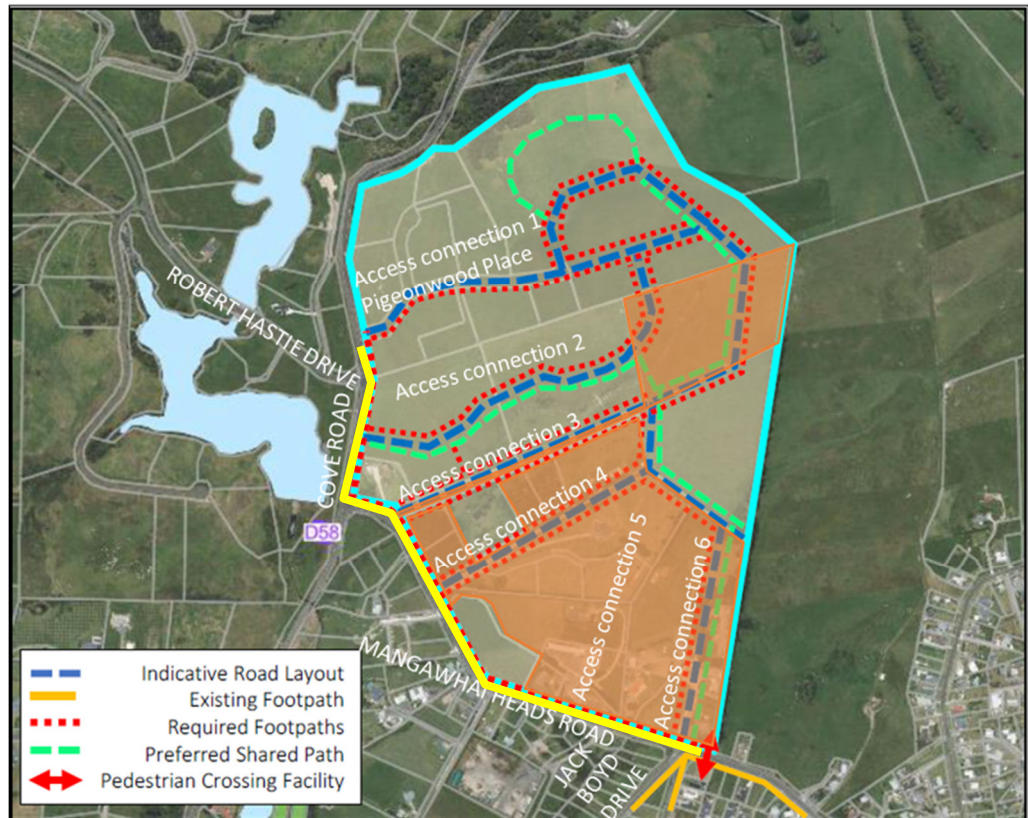
Mangawhai Heads Road/Cove Road, and an alternative form of intersection off Cove Road serving the PC83 area.

- 7.15 I agree with the submitters' concerns about traffic and pedestrian safety. Mr Kelly's New Transport Assessment has included an intersection upgrade on Mangawhai Heads Road / Cove Road in the form of an auxiliary left turn lane into Mangawhai Heads Road. As outlined in paragraph 6.44, I remain of the view that an auxiliary left turn lane will not have good safety outcomes, especially in light of the current 80 km/h speed limit.
- 7.16 I do agree that this intersection needs to be upgraded for safety reasons and the Applicant should provide further assessment in this regard as part of the Hearing process to identify a suitable intersection form, which in turn should be reflected in the Precinct provisions.

Proposed roading and cycling network effects

- 7.17 Some submitters have raised concerns that the proposed roading and cycling network within the PC83 area may not be feasible, and/or that on-site roads should be finalised through PC83 prior to subdivision as some roads/cycleways traverse through existing properties not owned by the Applicant.
- 7.18 In particular, submitters have outlined that owners of numbers 76, 82, 126, 128 (two additional landowners), 130, 130A, 130B, 136 and 142 Mangawhai Heads Road, are collectively major land owners in the area. I have outlined these properties in orange in Figure 8.

Figure 8: Land not owned by the applicant shown in orange superimposed on proposed roading network



7.19 In Figure 8, I have shown:

- (a) the indicative road network proposed by the Applicant; and
- (b) in yellow, the shared path along Mangawhai Heads Road and Cove Road, I recommended as discussed in paragraph 6.51;

7.20 I note that the road network plan is indicative and illustrates the roading and active mode connections holistically, as would be the intention if all the PC83 land is developed.

7.21 I previously outlined that the recommended connection is important to address the roading connectivity associated with the development of PC83, and to ensure that the PC83 has a holistic and not isolated roading network

7.22 It is my view, that the PC83 area will likely develop in stages, if and when a land owner chooses to subdivide, irrespective of who owns the land.

7.23 Nonetheless, I believe that the PC83 area owned by the Applicant to the north of access road #3 can be served without the need for access road #3 and access road #4 connection, and thereby being served through access

road #1 and access road #2. There is however a small triangular area to the east that could not be served without access road #6, as the road and active mode connection I proposed will have to cross access road #3 which I believe is on property owned by the submitters.

- 7.24 As such, I recommend that this triangular land can be developed if and when the properties that access road #6 cross are subdivided and a feasible road and active mode connection is established.
- 7.25 Furthermore, the lack of access road #6 if the PC83 area to the north is developed, emphasises the need for an active mode connection from Pigeonwood Place on Cove Road to past access road #6 on Mangawhai Heads Road to serve these residents, if no alternative connection is feasible.
- 7.26 Lastly, as the off-street shared path proposed by the Applicant along the rivet/stream passes through property not owned by them, I recommend a shared path connection between access road #3 and access road #1, to ensure that the active mode paths will form a continuous path connected to all roads and paths in the PC83 area.

8. MY RECOMMENDATIONS

- 8.1 Following my review of the PC83 application and submissions I recommend the following matters.
- 8.2 For the purpose of Mr Kelly's safety assessment of the Cove and Mangawhai Heads Road frontages associated with PC83, I consider that a factor of 1.5 to the surveyed traffic volumes should be used as a sensitivity test for traffic volume exposure along the PC83 frontage. This may impact the outcome of the SSA results.
- 8.3 I express concerns about intersection spacing on Cove Road, particularly between existing Robert Hastie Drive, existing Pigeonwood Place, and proposed road intersections. I recommend a comprehensive Safe System Assessment (SSA) of Cove Road be undertaken by the Applicant to identify necessary safety related mitigation measures.
- 8.4 While I support lowering the speed limit on Cove Road to 50 km/h and extending it to Mangawhai Heads Road, I acknowledge the complexity of implementing speed limit changes based on the existing built environment and urge the Applicant to assess additional mitigation measures if the speed limit change is not feasible.

- 8.5 Regarding specific intersections, I recommend considering a 'STOP' control as a mitigation measure for the Cove Road / Pigeon Place intersection.
- 8.6 I disagree with the proposed left turn lane from Cove Road into Mangawhai Heads Road and recommend upgrading the intersection to a safe urban form.
- 8.7 For the Mangawhai Heads Road / Jack Boyd Drive / Access connection 6 intersection, I recommend that an urban roundabout with active mode crossing facilities for better safety outcomes be implemented.
- 8.8 To ensure responsible development, I propose incorporating a provision into the Precinct rules, requiring that necessary intersection and active mode upgrades must be completed before any new dwelling in the PC83 area is occupied, thereby ensuring safe vehicle and active mode connections between each dwelling and the existing road network. Precinct provision triggers should be in place to ensure each dwelling in the PC83 will have safe active mode and vehicle access.
- 8.9 I emphasise the importance of including a shared path on the PC83 site's frontages on Cove Road and Mangawhai Heads Road. Ensuring appropriate provisions for pedestrians and cyclists is crucial, particularly if the internal shared path network within the PC83 area is deferred.
- 8.10 Regarding specific Precinct rules for inclusion in the Precinct provisions of the PC83, I recommend setbacks for buildings to be 4.5 m from boundaries or shared paths, discretionary or non-complying status for commercial and industrial activities, maintaining an average lot size of 1,000 m², and amending the wording in Rule 13.14.2(2) related to road, cycling, and pedestrian connections, to the following:
- (a) "Council will have regard to the following additional matters when considering an application for resource consent under this rule within the Cove Road North Precinct: The extent to which any road, cycling and pedestrian connections create connectivity throughout the Precinct and residential land beyond the precinct."
- 8.11 I also recommend that the development of the triangular land discussed above, should be contingent upon the subdivision of properties accessing road #6 and the establishment of a feasible road and active mode connection.

- 8.12 Highlighting the potential lack of access road #6 if the northern PC83 area is developed, I stress the importance of an active mode connection from Pigeonwood Place on Cove Road to past access road #6 on Mangawhai Heads Road if no alternative connection is feasible.

9. CONCLUSION

- 9.1 I have reviewed all the relevant transportation information provided with the PC83 application, including the Clause 23 material and submissions.
- 9.2 I make multiple recommendations as outlined in Section 8 above. In my opinion, the wider transportation effects of the PC83, particularly on Cove Road and Mangawhai Heads Road, have been adequately considered by the Applicant, however, there are no appropriate Precinct provisions in place to ensure that the required infrastructure will be implemented.
- 9.3 From a transportation safety perspective, the Applicant's Safe System Assessment did not consider the event where the speed limit could not change, especially at the Cove Road / Mangawhai Heads Road intersection.
- 9.4 To conclude, should my above recommendations be adopted and subject to the additional results of the Safe System Assessment, I consider that there are no transport planning or transport engineering reasons to preclude the approval of the PC83.

Gerhard van der Westhuizen

31 January 2024

Appendix A – Flow’s RFI summary

PROJECT PRIVATE PLAN CHANGE 83 (MANGAWHAI HEADS)
SUBJECT SUMMARY OF REQUESTS FOR FURTHER INFORMATION AND SUBSEQUENT RESPONSES
TO VAISHALI SANKAR (NORTHLAND TRANSPORT ALLIANCE)
FROM MICHAEL JONGENEEL
DATE 16 MAY 2023

1 SUMMARY OF OUR REVIEW

Flow Transportation Specialists (Flow) has reviewed the transportation elements of Proposed Plan Change Application 83 (PPC83) for the Cove Road North Precinct (the precinct) in north-western Mangawhai Heads. Our review is intended to assist the Northland Transport Alliance (NTA) in identifying any transport concerns that need to be resolved as part of PPC83, and to assist NTA in providing submissions on the application.

We previously provided a summary of our review in a technical note on 18 April 2023. Subsequent to that, a meeting was held on 27 April 2023 between the NTA, the applicant's transportation engineer, and ourselves. This technical note summarises the outcomes of that meeting.

We present the outcomes by way of the table included overleaf.

Table 1: Summary of requests for information and subsequent responses (as at 16 May 2023)

Council/NTA Request for Information (20/12/2022)	Applicant Response (28/02/2023)	Flow Comment (15/03/2023)	Flow technical note (18/04/2023)	Final Status following meeting with applicant on 27/04/2023
1. TIA states that the intersection of Pigeonwood Place and Cove Road might warrant a CHR - request applicant to provide us an approximate estimate of lots accessed of Pigeonwood Place/Cove Road and an approximate estimate of lots accessed off Mangawhai Heads Road.	It is estimated that 130 to 140 lots will lead to Pigeonwood Place at full development of its catchment as anticipated, with as many as 240 leading to Mangawhai Heads Road. There is ample space within road reserve for a right-turn bay at Pigeonwood Place if/when this is required as a future consent condition.	We recommend the ITA include an indicative roading plan (per movement network in Urban Design Assessment) to show <ul style="list-style-type: none"> Indicative intersection/vehicle crossing locations indicative number of lots accessed from each road/access This needs to be resolved at a Plan Change level as it will dictate what intersection designs are appropriate for the precinct as a whole. If this is not defined at this stage there is a risk of intersections being constructed which are not fit for purpose to meet the demand of the precinct as a whole once fully developed.	The applicant had provided an indicative transport plan for the precinct, including roads and walking and cycling connections and expected number of lots to be accessed from each. In response, we recommended that this indicative transport plan be amended to include: <ul style="list-style-type: none"> a footpath/shared path on the site's frontages on Cove Road (south of Pigeonwood Place) and on Mangawhai Heads Road a safe pedestrian connection across Mangawhai Heads Road, between the above footpath/shared path to the existing footpath east of Jack Boyd Drive the street connections as shown on Figure 1 in Appendix A 	Matter potentially resolved subject to further information to be supplied at the Hearing. At the 27 April meeting, the applicant's transport engineer agreed to provide an amended indicative transport plan through the Hearing process.
2. Precinct Plan – this should include indicative collector roads and intersection locations with Cove and Mangawhai, otherwise it could develop as a bunch of cul-de-sacs if there are multiple landowners	No response provided			
3. Has the applicant considered providing Local Reserve within the Precinct? With the government working towards carbon emission reduction, we would like the applicant to consider this possibility to reduce the additional trips generated.	No response provided	We agree that the ITA should include indicative walking and cycling routes within the precinct, although we feel it is for Council to decide whether these are Local Reserve or some other ownership arrangement. Possible walking and cycling links could include connections to <ul style="list-style-type: none"> Mangawhai Heads Road (at eastern corner of the precinct) Connection to/towards Cullen Street further north 		
4. Request the TIA to carry out Modelling assessment for new roads intersecting with Cove Road or Mangawhai Heads. Given there aren't any specified within the Precinct Plan, assuming the worst case that there is only 1 intersection onto each road (i.e. traffic from the development is concentrated through 2 new intersections)	The primary, perhaps only, consideration at this stage is that adequate space is available for intersections likely to be required with future subdivision within the precinct. In most cases, the road reserve will be able to be widened on the site side of the frontage roads as necessary. Even if this is not possible, a right-turn bay is very likely the largest treatment required at all intersections [footnote: Even the busiest – the Cove Road/Mangawhai Heads Road intersection as shown later]. The road reserve is 20 metres wide throughout the frontages of both Cove Road and Mangawhai Heads Road. There is ample space within such road reserves for a right-turn bay if/when this is required as a future consent condition. In fact, there is an existing right-turn bay on Cove Road for Mangawhai Heads Road and the road reserve on that part of Cove Road is 20 metres wide.	Refer to 1 above. We disagree with the applicant's assertion that the only consideration at this stage is space availability. The Plan Change application is Council's opportunity to consider the impact of the precinct as a whole, rather than in smaller portions as may be the case when resource consent applications are lodged. As such, it is necessary to define (indicatively) what intersections and road infrastructure is required for the precinct once fully built out. We agree with NTA's request for modelling for new intersections with Cove Road and Mangawhai Heads Road, in line with the indicative roading plan requested above.	We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety can be dealt with at the resource consent stage.	Matter resolved.
5. Safety and modelling assessment for Tara/Kaiwaka Mangawhai Road (holiday peak modelling only)	This intersection is 8 kilometres from the site and will only be used by a small proportion of the traffic generated by the proposal – estimated at only 3 to 4% being some traffic that travels to/from Auckland (not all such traffic because Tara Road is not part of the shortest route or most direct route to/from Auckland). So it is estimated that the proposal will increase the traffic through this intersection by no more than 1.5%. As such, an assessment of that intersection is not warranted.	We accept the applicant's response. No further information required.	n/a	Matter resolved.

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<p>6. In the TIA it has been stated that video monitoring was carried out in November 2021 (during Covid restrictions) – request applicant to carry out traffic counts during baseline (school period) and summer period and utilise that information to determine the traffic effects.</p>	<p>This is not necessary. Continuous counters on roads that have them, and are subject to significant seasonal traffic, provide an adequate proxy for the seasonal variations in locations like this. Such a proxy has been applied to the traffic generation estimates in the RFI, with allowance for the fact that houses in this location are more likely to be used as primary residences than dwellings closer to the coast, so will be occupied for a higher proportion of the time, with the associated traffic less subject to seasonal increases.</p>	<p>We accept that continuous counters in other locations can be used to proxy the seasonal variations in traffic in areas like Mangawhai Heads. We also note that Plan Change 78 (Mangawhai Central) undertook summer peak surveys which could be used for this purpose.</p> <p>However, in order to deduce summer peak traffic flows in this way reliable baseline traffic counts are required. We are not satisfied that counts carried out during Covid restrictions provide this baseline. We suggest baseline traffic counts are carried out on a normal schoolday/schooldays (Tuesday/Wednesday/Thursday) for this purpose.</p>	<p>We recommended that the applicant carry out traffic counts on a typical, neutral weekday, to confirm baseline traffic conditions.</p>	<p>Matter potentially resolved, subject to further information to be supplied at the Hearing.</p> <p>In our meeting, the applicant's transport engineer confirmed that they would provide further evidence confirming that the traffic data already collected during Covid restrictions was representative of a typical, neutral weekday. This information would be provided through the Hearing process.</p>
<p>7. Request applicant to carry SIDRA modelling for all the intersections within their frontage including Pigeonwood Place, Robert Hastie Drive, Cove Rd/Mangawhai Heads Rd, and Mangawhai Heads Road/Cullen Street/Molesworth Drive.</p>	<p>SIDRA modelling has been carried out for the Cove Rd/Mangawhai Heads Rd intersection as shown later and an existing model has been updated for the existing roundabout.</p> <p>The roundabout model is based on a combination of monitoring and recent traffic counts, plus it includes the estimated traffic from two large subdivisions recently applied for on Cullen Street and 30% growth in existing traffic (representing some 10 years of future growth). It is estimated that the plan change will add another 150 vehicle movements through the roundabout during peak hours during holiday periods, more than 80% of which is expected to travel to/from Molesworth Drive and almost all of the remainder will travel to/from Mangawhai Heads Road east. Movement summaries from this analysis are appended. It shows that, even during those hours, the roundabout will continue to operate at an overall level of service A, with average delays less than 8 seconds, maximum delays less than 13 seconds and 95 percentile queues of only 7 vehicles on the busiest approach. The roundabout's operation will be even better at other times. This confirms the previous assessment that the roundabout has more than adequate capacity to cope with the traffic from the proposal. In any event, decisions on transport infrastructure are almost never based on absolute peak hours like this.</p> <p>With future intersections likely to be necessary for future subdivision, the only consideration is that adequate space is available. As shown in the response to question 4, such space is currently available.</p>	<p>We are satisfied that the modelling undertaken does not indicate any major concerns for the Cove Road/Mangawhai Heads Road intersection or the Mangawhai Heads Road/Molesworth Drive roundabout, and do not require any further modelling of these intersections unless traffic counts (see above at 6) indicate volumes have been significantly underestimated.</p> <p>As noted above (see 4) we request modelling be undertaken for new intersections onto Cove Road and Mangawhai Heads Road. We recommend modelling Pigeonwood Place and Robert Hastie Drive as a single offset intersection to understand any impact of queuing at one intersection on the performance of the other.</p>	<p>We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage.</p> <p>However, we consider that further work is required to demonstrate that the existing Mangawhai Heads Road/Cove Road intersections can function safely and efficiently once the precinct is developed.</p>	<p>Matter resolved.</p> <p>Matter potentially resolved, subject to further information to be supplied at the Hearing.</p> <p>Subject to the resolution of item 6 above through the Hearing process, we agree that no further traffic modelling will be required of the Mangawhai Heads Road/Cove Road intersection.</p>

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<p>8. Request applicant to carry Safe System Assessment of all the intersections along their frontage including Pigeonwood Place, Robert Hastie Drive, Cove Rd/Mangawhai Heads Rd, and Mangawhai Heads Road/Cullen Street/Molesworth Drive and the report is to address the effects at these intersections and propose a primary treatment.</p>	<p>This is not necessary for the reasons already given and the additional reason that, apart from Pigeonwood Place, the eventual locations of intersections are not even known. Safe System Assessments might be warranted at future consent stages, but not at the stage of a plan change.</p> <p>This said, a recent crash at the Cove Rd/Mangawhai Heads Rd would be fully addressed with a central island on the side road. There is ample space at the intersection location for this and it is an existing issue that should already have been addressed. There are some sightline restrictions in relation to the roundabout, but no crashes have been reported on it since at least the start of 2018, the relatively small increase in traffic from the plan change is unlikely to increase this risk significantly and, even if it does, some vegetation trimming and a small volume of earthworks is all that will be necessary to address the issue. This is another existing issue that should already have been addressed.</p> <p>Overall, we maintain that no significant work is warranted at existing intersections as a result of additional traffic from this plan change.</p>	<p>See above at 1 and 4.</p> <p>We consider it is necessary to indicatively define the layout of the precinct at this plan change stage, including the location of intersections, number of dwellings served by each and indicative designs for these intersections.</p> <p>If these matters are left to resource consent stage, Council will only be able to consider the impact of any given consent, and not the cumulative requirements of the precinct as a whole.</p> <p>We agree with NTA's request for Safe System Assessments of intersections as a means of determining the impact of the precinct on the road network and defining safe, efficient intersection locations and layouts. That said, we consider that the SSA for the Mangawhai Heads Road/Molesworth Drive roundabout only needs to consider pedestrians and cyclists, as the roundabout treatment is safe for most vehicles.</p>	<p>We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage.</p> <p>However, we consider that further work is required to demonstrate that the existing Mangawhai Heads Road intersections can function safely and efficiently once the precinct is developed.</p>	<p>Matter resolved.</p> <p>Matter not resolved. We understand through our meeting that the applicant does not intend to provide a Safe System Assessment of the Mangawhai Heads Road/Cove Road intersection. The intersection is a high-speed rural intersection, and adding additional traffic to this intersection without further safety mitigation may not be consistent with the Safe Systems approach.</p>
<p>9. The Plan outlines the indicative street and cycling connection on Mangawhai Heads Road but does not address the effects on the existing footpath on Mangawhai Heads Road and have shown an indicative off road shared path connecting to an existing footpath which would not be ideal. Request applicant to address this.</p>	<p>Again, it is only necessary that space be available for future installations or upgrades of such facilities. A future footpath along Mangawhai Heads Road is likely to be 1.8 metres wide and there is ample space within the road reserve for this even if the necessary space cannot be made available along site frontages (and it is likely this will be feasible). There is absolutely no reason why shared paths cannot be connected to footpaths. In fact, such is common, an example being the Hatea Loop path in Whangarei.</p>	<p>See above at 3.</p> <p>For reasons outlined above, we consider it is necessary to define an indicative walking and cycling network for the precinct at this stage.</p> <p>We suggest Council include a District Plan rule within the precinct plan requiring pedestrian upgrades and identifying triggers for when these must be delivered, including:</p> <ul style="list-style-type: none"> The urbanisation of the precinct's frontage to Mangawhai Heads Road and Cove Road (South of Pigeonwood – dependent on other proposed pedestrian connections) with sealed footpaths Safe, sealed connection to existing footpath on the southern side of Mangawhai Heads Road 	<p>No response provided by applicant.</p> <p>In response, we recommended that this indicative transport plan be amended to include footpaths/shared paths, as per items 1-3 above.</p>	<p>Addressed through items 1-3 above.</p>

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10. Request TIA to address the effects on Pigeonwood Place due to this proposed plan change both traffic effects and active modes.	Pigeonwood Place has a legal corridor 20 metres wide. This is ample space for any future traffic and upgrades for active modes, even with the catchment of the road at full development. It is noted that the traffic on most of Pigeonwood Place will be less than 1,500 movements per day at full development even during holiday periods. This is a long way from a busy urban road, so special treatments that might be especially space intensive will simply never be necessary.	Requirements for Pigeonwood Place are dependent on the overall layout of the precinct and the number of dwellings served by the road. We note that a 20 m legal road width meets the Kaipara District Council Engineering Standards' requirement for roads serving more than 50 households. We suggest Council define expectations for roads within the precinct and include these as rules for the precinct within the District Plan, including things such as providing for safe walking and cycling, with footpaths and speed calming.	We are satisfied that the vehicle accesses to the precinct will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage in line with the Kaipara District Council's existing Engineering Standards.	Matter resolved.
11. TIA has stated that a future possible connection to Cullen Street can be made – request TIA to further address the effects on Cullen Street and the roundabout due to this additional movements and the active modes along Cullen Street.	The recommendation is simply for such a future link to be facilitated. Any such link would rely on land outside the plan change area, so is far from certain. The effects on Cullen Street would have to be evaluated at the time in which such a link is actually proposed but this is not warranted at this stage.	In our view a road connection to Cullen Street is not desirable, and traffic should be directed to Cullen Street and Molesworth Drive via existing main roads (Cove Road and Mangawhai Heads Road). A future walking and cycling link to Cullen Street, however, would provide an alternative route for people from the northern side of the precinct to move towards Mangawhai Heads. We support this and think it should be included in the indicative walking and cycling network for the precinct.	Our previous comments still stand, but as no connection to Cullen Street is currently proposed we do not require any further information at this stage.	Matter resolved.
12. Has the applicant considered future growth while undertaking the assessments of the intersection? If not request applicant to consider 10% future growth especially for Mangawhai Heads Road/Cove Road intersection, Mangawhai Heads Road/Cullen Street/Molesworth Drive, and the effects on Cove Road/Pigeonwood Place once Robert Hastie Drive has been fully developed/occupied.	The average daily traffic on both Cove Road and Mangawhai Heads Road is currently less than 2,500 movements per day - well below the level of traffic that can create capacity issues even at conventional tee intersections. In particular, Molesworth Drive currently carries traffic close to 10,000 movements on an average day and has a number of conventional tee intersections on it. One – Wood Street, carries close to 5,000 movements and three others carry close to 1,000 movements on an average day. The speed limit is lower at all of those intersections, but this does not have a significant influence on the capacity of the most challenging turn – right turns out of the side road. Wood Street has a right-turn bay but, as already shown, there is ample space for right-turn bays at all future intersections along the frontage of the plan-change precinct area if/when those are warranted. There are also numerous other intersections in much busier locations in locations with similar or higher speed limit. Examples are the intersections of Mangawhai Road, Baldrick Road, SH12 (Brynderwyn), Marsden Point Road, Mangapai Road, Maungakaramea Road and Portland all on SH1N. No upgrades that would have a material impact on the capacity of those intersections are proposed. While Mangawhai is growing more rapidly than most, the traffic along the road frontages of the plan-change precinct will not reach the levels at any of the cited locations for many decades, probably never.	We accept the applicant's evidence regarding the capacity of the Cove Road/Mangawhai Heads Road and Mangawhai Heads Road/Molesworth Drive/ Cullen Street intersections, and are satisfied with the modelling undertaken provided there has not been a significant under-estimation of traffic volumes (see above at 6). However, we support NTA's request for SIDRA modelling of the Pigeonwood Place/Cove Road/Robert Hastie Drive intersection and other intersections connecting the precinct to Cove Road/Mangawhai Heads Road (see above at 7), as this will help to determine the appropriate layout for these intersections.	Addressed in item 8 above	Addressed in item 8 above
13. Request a minimum of 4.5m setback from the road boundary based off Exposure Draft District Plan.	No response provided	Agree with NTA's request. Suggest this is included as a provision within the precinct rules in the District Plan (unless the Exposure Draft District Plan is adopted prior to approval of the precinct plan).	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter

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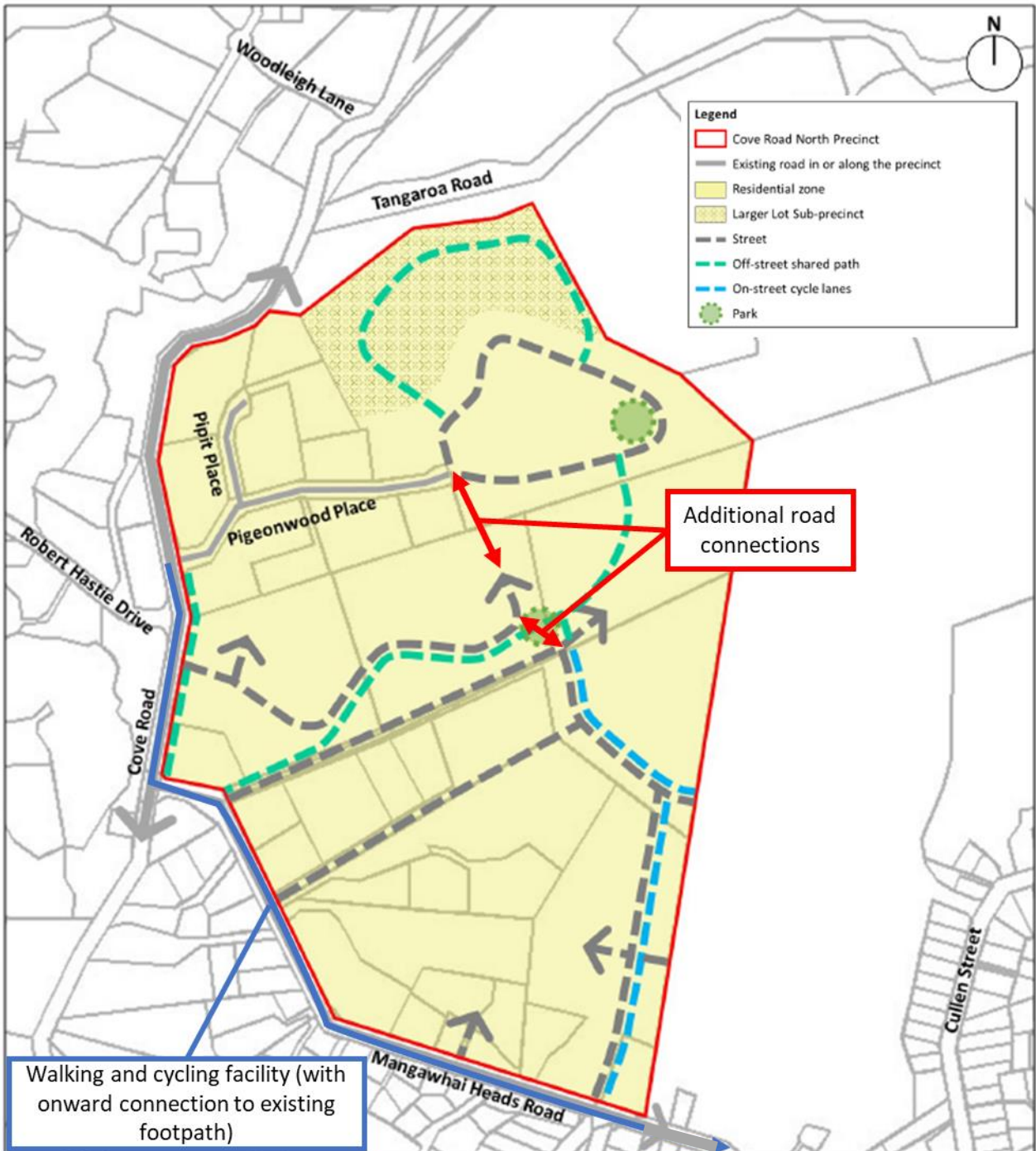
Council/NTA Request for Information (20/12/2022)	Applicant Response (28/02/2023)	Flow Comment (15/03/2023)	Flow technical note (18/04/2023)	Final Status following meeting with applicant on 27/04/2023
14. Request applicant to include commercial/industrial activity as a Discretionary Activity or Non-complying in the District Plan.	No response provided	Agree with NTA's request.	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter
15. The minimum lot sizes proposed is 400sq.m and the TIA has assumed that the lot sizes are 1000sq.m to determine the number of lots that can be accommodated. Request the TIA to address the possibility for smaller 400-500sq.m lots in these sections, which would create additional effects. Request TIA to address this possibility and carry out SIDRA modelling accordingly.	The average lot size estimated in the TIA was agreed by all project team members. It is based on a number of factors including the larger minimum lot size specified for part of the area (including the northern slope), the need for space for access, reserves, other services and the likelihood that some ground will be unsuitable for the establishment of dwellings. We maintain that an average 1,000 sq.m lot area is realistic and, also for the reasons already given, disagree that it is necessary to revisit the analysis.	Noted. Suggest the precinct rules in the District Plan include a provision that an average lot size of 1,000 sq.m will be maintained or stipulating the maximum number of dwellings for the precinct. As outlined above, this needs to be defined at a precinct level as it will influence the infrastructure required to serve the precinct as a whole.	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter
16. Request applicant to carry out SIDRA modelling to determine if the one-lane bridge on the southern end of Cove Rd/Mangawhai Heads Rd would be able to accommodate the additional traffic generated. While we note there are many one-lane bridges throughout Northland which carry higher ADT than this one, Mangawhai is developing at a rapid rate and has a higher volume during the summer periods. Hence, we would like the modelling to be undertaken. Note: We request the SIDRA modelling to be undertaken for existing, future growth and peak summer periods as well.	This analysis has been carried out and finds that the bridge has capacity for at least 1,000 vehicle movements per hour (total in both directions), even with a bias in one direction - only likely outside peak holiday periods. The bridge has been modelled with a conservative "gap acceptance" of 10 seconds and vehicles in both directions giving way. Even at 1,000 vehicle movements per hour, the average delay in the busier direction is predicted at less than 22 seconds, with an overall average delay of 15 seconds. The 95-percentile queue in the busier direction is predicted at 24 vehicles with virtually no queues in the other direction. The bridge currently carries fewer than 200 movements during peak hours on average days and this is unlikely to increase to more than 300 during holiday periods. Even with growth in Mangawhai being more rapid than average, it will be many decades before the bridges on Cove Road experience levels of traffic that might create significant and/or regular congestion.	Request that the applicant clarify how many peak hour vehicle movements on the bridge they estimate will be generated by the development. We also note that the approaches to the one lane bridge appear to be mislabelled, unless we have been provided modelling for a different location. In general, we accept the applicant's response and agree that some degree of congestion is to be expected and tolerated during the busiest peak periods.	Further consideration required. No response provided by applicant.	Matter resolved. No further information provided by applicant. However, we accept that the additional traffic associated with the Plan Change is unlikely to have a significant effect on the bridge's operation.

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<p>17. TIA has stated that the Mangawhai Heads Road/Cove Road intersection has capacity for more than 300 right-turns out of Heads Road even during holiday season – Request applicant to provide further information on how this was determined, was modelling or Austroads treatment check carried out to determine this?</p>	<p>The methodology use is stated in Footnote 18, page 10, of the TIA. It was based on models as described in various Austroads publications.</p> <p>However, for completeness, a SIDRA analysis has been carried out of the intersection for current traffic plus 30% representing some 10 years of future growth plus traffic from the plan change precinct at full development and during peak hours of holiday periods. This shows that the greatest average delay for any turn – right turns out of Mangawhai Heads Road, will be only 12 seconds, with 95 percentile queues of fewer than 2 vehicles and less than 30% of the practical capacity of the turn. This analysis is conservative because it omits the left turn lane from Cove Road north. The high capacity is partly a result of the low frequency of through movements on the priority route – Cove Road. Summary output of the analysis, both with and without PPC83, are appended.</p> <p>It is further noted that there is space for the Cove Road/Mangawhai Heads Road intersection to be converted to a roundabout in future. Figure R1 shows an indicative roundabout with an outside diameter of 25 metres. A roundabout is the highest standard of treatment ever likely to be necessary for this intersection.</p>	<p>Noted. No further information required unless updated traffic counts (see above at 6) indicate volumes have been significantly underestimated.</p>	<p>We are satisfied with the analysis undertaken, provided updated traffic counts can be used to update the analysis per item 6.</p>	<p>Matter potentially resolved, subject to further information to be supplied at the Hearing.</p> <p>Subject to the resolution of item 6 above, confirming that the traffic data collected was representative.</p>
<p>18. 13.14.2 – Reads “the Cove Road North Precinct Road, Cycleway and Pedestrian Connection 2. Council will have regard to the following additional matters when considering an application for resource consent under this rule within the Cove Road North Precinct: i. The extent to which any road, cycling and pedestrian connections are established in accordance with the Cove Road North Precinct Map 1 and Cove Road North Precinct Concept Plan 1” Request applicant to remove the wording “in accordance with Cove Road North Precinct Map 1 and Cove Road North Precinct Concept Plan 1” as the active modes connection has not been addressed completely.</p>	<p>No response provided</p>	<p>Agree with NTA’s request. To be updated within the precinct rules.</p>	<p>Precinct provision to be drafted. No response provided by applicant.</p>	<p>Matter potentially resolved subject to further information to be supplied at the Hearing.</p> <p>Subject to the applicant providing an amended indicative transport plan through the Hearing process, as per items 1-3 above.</p>

**APPENDIX A Proposed changes to indicative
transport plan**

Figure 1: Proposed changes to indicative transport network



Appendix B – Flow’s RFI summary v2

PROJECT	PRIVATE PLAN CHANGE 83 (MANGAWHAI HEADS)
SUBJECT	SUMMARY OF REQUESTS FOR 24TH JANUARY 2024 MEETING WITH APPLICANT
TO	VAISHALI SANKAR (NORTHLAND TRANSPORT ALLIANCE)
FROM	MICHAEL JONGENEEL AND GERHARD VAN DER WESTHUIZEN
DATE	31 JANUARY 2024

1 SUMMARY OF OUR REVIEW

Flow Transportation Specialists (Flow) has reviewed the transportation elements of Proposed Plan Change Application 83 (PPC83) for the Cove Road North Precinct (the precinct) in north-western Mangawhai Heads. Our review is intended to assist the Northland Transport Alliance (NTA) in identifying any transport concerns that need to be resolved as part of PPC83, and to assist NTA in providing submissions on the application.

We previously provided a summary of our review in a technical note on 18 April 2023. Subsequent to that, a meeting was held on 27 April 2023 between the NTA, the applicant's transportation engineer, and ourselves. This technical note summarises the outcomes of that meeting.

Following the above and the submission of our draft evidence, the applicant now has a new transport engineer. A meeting with the applicant's new transport engineer, Mr Peter Kelly, was held on 24 January 2024 to discuss the outstanding matters and recommendations which are summarised in Table 1 below..

We present the outcomes by way of the table included overleaf.

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1. TIA states that the intersection of Pigeonwood Place and Cove Road might warrant a CHR - request applicant to provide us an approximate estimate of lots accessed of Pigeonwood Place/Cove Road and an approximate estimate of lots accessed off Mangawhai Heads Road.	It is estimated that 130 to 140 lots will lead to Pigeonwood Place at full development of its catchment as anticipated, with as many as 240 leading to Mangawhai Heads Road. There is ample space within road reserve for a right-turn bay at Pigeonwood Place if/when this is required as a future consent condition.	We recommend the ITA include an indicative roading plan (per movement network in Urban Design Assessment) to show <ul style="list-style-type: none"> Indicative intersection/vehicle crossing locations indicative number of lots accessed from each road/access This needs to be resolved at a Plan Change level as it will dictate what intersection designs are appropriate for the precinct as a whole. If this is not defined at this stage there is a risk of intersections being constructed which are not fit for purpose to meet the demand of the precinct as a whole once fully developed.	The applicant had provided an indicative transport plan for the precinct, including roads and walking and cycling connections and expected number of lots to be accessed from each. In response, we recommended that this indicative transport plan be amended to include: <ul style="list-style-type: none"> a footpath/shared path on the site's frontages on Cove Road (south of Pigeonwood Place) and on Mangawhai Heads Road a safe pedestrian connection across Mangawhai Heads Road, between the above footpath/shared path to the existing footpath east of Jack Boyd Drive the street connections as shown on Figure 1 in Appendix A 	Matter potentially resolved subject to further information to be supplied at the Hearing. At the 27 April meeting, the applicant's transport engineer agreed to provide an amended indicative transport plan through the Hearing process.	Matter partially resolved. The New Transport Assessment has updated and amended the Indicative Transport Plan. We consider that a shared path should be provided along the PC83 frontages along Cove and Mangawhai Heads Road.
2. Precinct Plan – this should include indicative collector roads and intersection locations with Cove and Mangawhai, otherwise it could develop as a bunch of cul-de-sacs if there are multiple landowners	No response provided				
3. Has the applicant considered providing Local Reserve within the Precinct? With the government working towards carbon emission reduction, we would like the applicant to consider this possibility to reduce the additional trips generated.	No response provided	We agree that the ITA should include indicative walking and cycling routes within the precinct, although we feel it is for Council to decide whether these are Local Reserve or some other ownership arrangement. Possible walking and cycling links could include connections to <ul style="list-style-type: none"> Mangawhai Heads Road (at eastern corner of the precinct) Connection to/towards Cullen Street further north 			
4. Request the TIA to carry out Modelling assessment for new roads intersecting with Cove Road or Mangawhai Heads. Given there aren't any specified within the Precinct Plan, assuming the worst case that there is only 1 intersection onto each road (i.e. traffic from the development is concentrated through 2 new intersections)	The primary, perhaps only, consideration at this stage is that adequate space is available for intersections likely to be required with future subdivision within the precinct. In most cases, the road reserve will be able to be widened on the site side of the frontage roads as necessary. Even if this is not possible, a right-turn bay is very likely the largest treatment required at all intersections [footnote: Even the busiest – the Cove Road/Mangawhai Heads Road intersection as shown later]. The road reserve is 20 metres wide throughout the frontages of both Cove Road and Mangawhai Heads Road. There is ample space within such road reserves for a right-turn bay if/when this is required as a future consent condition. In fact, there is an existing right-turn bay on Cove Road for Mangawhai Heads Road and the road reserve on that part of Cove Road is 20 metres wide.	Refer to 1 above. We disagree with the applicant's assertion that the only consideration at this stage is space availability. The Plan Change application is Council's opportunity to consider the impact of the precinct as a whole, rather than in smaller portions as may be the case when resource consent applications are lodged. As such, it is necessary to define (indicatively) what intersections and road infrastructure is required for the precinct once fully built out. We agree with NTA's request for modelling for new intersections with Cove Road and Mangawhai Heads Road, in line with the indicative roading plan requested above.	We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety can be dealt with at the resource consent stage.	Matter resolved.	As previous
5. Safety and modelling assessment for Tara/Kaiwaka Mangawhai Road (holiday peak modelling only)	This intersection is 8 kilometres from the site and will only be used by a small proportion of the traffic generated by the proposal – estimated at only 3 to 4% being some traffic that travels to/from Auckland (not all such traffic because Tara Road is not part of the shortest route or most direct route to/from Auckland). So it is estimated that the proposal will increase the traffic through this intersection by no more than 1.5%. As such, an assessment of that intersection is not warranted.	We accept the applicant's response. No further information required.	n/a	Matter resolved.	As previous

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6. In the TIA it has been stated that video monitoring was carried out in November 2021 (during Covid restrictions) – request applicant to carry out traffic counts during baseline (school period) and summer period and utilise that information to determine the traffic effects.	This is not necessary. Continuous counters on roads that have them, and are subject to significant seasonal traffic, provide an adequate proxy for the seasonal variations in locations like this. Such a proxy has been applied to the traffic generation estimates in the RFI, with allowance for the fact that houses in this location are more likely to be used as primary residences than dwellings closer to the coast, so will be occupied for a higher proportion of the time, with the associated traffic less subject to seasonal increases.	We accept that continuous counters in other locations can be used to proxy the seasonal variations in traffic in areas like Mangawhai Heads. We also note that Plan Change 78 (Mangawhai Central) undertook summer peak surveys which could be used for this purpose. However, in order to deduce summer peak traffic flows in this way reliable baseline traffic counts are required. We are not satisfied that counts carried out during Covid restrictions provide this baseline. We suggest baseline traffic counts are carried out on a normal schoolday/schooldays (Tuesday/Wednesday/Thursday) for this purpose.	We recommended that the applicant carry out traffic counts on a typical, neutral weekday, to confirm baseline traffic conditions.	Matter potentially resolved, subject to further information to be supplied at the Hearing. In our meeting, the applicant's transport engineer confirmed that they would provide further evidence confirming that the traffic data already collected during Covid restrictions was representative of a typical, neutral weekday. This information would be provided through the Hearing process.	Matter resolved. The New Transport Assessment has updated recent traffic counts as undertaken on October 2023.
7. Request applicant to carry SIDRA modelling for all the intersections within their frontage including Pigeonwood Place, Robert Hastie Drive, Cove Rd/Mangawhai Heads Rd, and Mangawhai Heads Road/Cullen Street/Molesworth Drive.	SIDRA modelling has been carried out for the Cove Rd/Mangawhai Heads Rd intersection as shown later and an existing model has been updated for the existing roundabout. The roundabout model is based on a combination of monitoring and recent traffic counts, plus it includes the estimated traffic from two large subdivisions recently applied for on Cullen Street and 30% growth in existing traffic (representing some 10 years of future growth). It is estimated that the plan change will add another 150 vehicle movements through the roundabout during peak hours during holiday periods, more than 80% of which is expected to travel to/from Molesworth Drive and almost all of the remainder will travel to/from Mangawhai Heads Road east. Movement summaries from this analysis are appended. It shows that, even during those hours, the roundabout will continue to operate at an overall level of service A, with average delays less than 8 seconds, maximum delays less than 13 seconds and 95 percentile queues of only 7 vehicles on the busiest approach. The roundabout's operation will be even better at other times. This confirms the previous assessment that the roundabout has more than adequate capacity to cope with the traffic from the proposal. In any event, decisions on transport infrastructure are almost never based on absolute peak hours like this. With future intersections likely to be necessary for future subdivision, the only consideration is that adequate space is available. As shown in the response to question 4, such space is currently available.	We are satisfied that the modelling undertaken does not indicate any major concerns for the Cove Road/Mangawhai Heads Road intersection or the Mangawhai Heads Road/Molesworth Drive roundabout, and do not require any further modelling of these intersections unless traffic counts (see above at 6) indicate volumes have been significantly underestimated. As noted above (see 4) we request modelling be undertaken for new intersections onto Cove Road and Mangawhai Heads Road. We recommend modelling Pigeonwood Place and Robert Hastie Drive as a single offset intersection to understand any impact of queuing at one intersection on the performance of the other.	We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage.	Matter resolved.	As previous
			However, we consider that further work is required to demonstrate that the existing Mangawhai Heads Road/Cove Road intersections can function safely and efficiently once the precinct is developed.	Matter potentially resolved, subject to further information to be supplied at the Hearing. Subject to the resolution of item 6 above through the Hearing process, we agree that no further traffic modelling will be required of the Mangawhai Heads Road/Cove Road intersection.	Matter resolved. The New Transport Assessment has assessed the key intersections using SIDRA analysis with the updated traffic counts.
8. Request applicant to carry Safe System Assessment of all the intersections along their frontage including Pigeonwood Place, Robert Hastie Drive, Cove Rd/Mangawhai Heads Rd, and Mangawhai Heads Road/Cullen Street/Molesworth Drive and the report is to address the effects at these intersections and propose a primary treatment.	This is not necessary for the reasons already given and the additional reason that, apart from Pigeonwood Place, the eventual locations of intersections are not even known. Safe System Assessments might be warranted at future consent stages, but not at the stage of a plan change. This said, a recent crash at the Cove Rd/Mangawhai Heads Rd would be fully addressed with a central island on the side road. There is ample space at the intersection location for this and it is an existing issue that should already have been addressed. There are some sightline restrictions in relation to the roundabout, but no crashes have been reported on it since at least the start of 2018, the relatively small increase in traffic from the plan change is unlikely to increase this risk significantly and, even if it does, some vegetation	See above at 1 and 4. We consider it is necessary to indicatively define the layout of the precinct at this plan change stage, including the location of intersections, number of dwellings served by each and indicative designs for these intersections. If these matters are left to resource consent stage, Council will only be able to consider the impact of any given consent, and not the cumulative requirements of the precinct as a whole. We agree with NTA's request for Safe System Assessments of intersections as a means of determining the impact of the precinct on the road network and defining safe, efficient intersection locations and layouts. That said, we consider that the	We are satisfied that the new vehicle accesses will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage.	Matter resolved.	As previous

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	trimming and a small volume of earthworks is all that will be necessary to address the issue. This is another existing issue that should already have been addressed. Overall, we maintain that no significant work is warranted at existing intersections as a result of additional traffic from this plan change.	SSA for the Mangawhai Heads Road/Molesworth Drive roundabout only needs to consider pedestrians and cyclists, as the roundabout treatment is safe for most vehicles.	However, we consider that further work is required to demonstrate that the existing Mangawhai Heads Road intersections can function safely and efficiently once the precinct is developed.	Matter not resolved. We understand through our meeting that the applicant does not intend to provide a Safe System Assessment of the Mangawhai Heads Road/Cove Road intersection. The intersection is a high-speed rural intersection, and adding additional traffic to this intersection without further safety mitigation may not be consistent with the Safe Systems approach.	Matter partially resolved. The New Transport Assessment has provided Safe System Analysis (SSA). The SSA only considers the existing intersections and has not assessed the potential future environment. Furthermore, sensitivity testing for the holiday periods on traffic needs to be further evaluated.
9. The Plan outlines the indicative street and cycling connection on Mangawhai Heads Road but does not address the effects on the existing footpath on Mangawhai Heads Road and have shown an indicative off road shared path connecting to an existing footpath which would not be ideal. Request applicant to address this.	Again, it is only necessary that space be available for future installations or upgrades of such facilities. A future footpath along Mangawhai Heads Road is likely to be 1.8 metres wide and there is ample space within the road reserve for this even if the necessary space cannot be made available along site frontages (and it is likely this will be feasible). There is absolutely no reason why shared paths cannot be connected to footpaths. In fact, such is common, an example being the Hatea Loop path in Whangarei.	See above at 3. For reasons outlined above, we consider it is necessary to define an indicative walking and cycling network for the precinct at this stage. We suggest Council include a District Plan rule within the precinct plan requiring pedestrian upgrades and identifying triggers for when these must be delivered, including: <ul style="list-style-type: none"> The urbanisation of the precinct's frontage to Mangawhai Heads Road and Cove Road (South of Pigeonwood – dependent on other proposed pedestrian connections) with sealed footpaths Safe, sealed connection to existing footpath on the southern side of Mangawhai Heads Road 	No response provided by applicant. In response, we recommended that this indicative transport plan be amended to include footpaths/shared paths, as per items 1-3 above.	Addressed through items 1-3 above.	As previous
10. Request TIA to address the effects on Pigeonwood Place due to this proposed plan change both traffic effects and active modes.	Pigeonwood Place has a legal corridor 20 metres wide. This is ample space for any future traffic and upgrades for active modes, even with the catchment of the road at full development. It is noted that the traffic on most of Pigeonwood Place will be less than 1,500 movements per day at full development even during holiday periods. This is a long way from a busy urban road, so special treatments that might be especially space intensive will simply never be necessary.	Requirements for Pigeonwood Place are dependent on the overall layout of the precinct and the number of dwellings served by the road. We note that a 20 m legal road width meets the Kaipara District Council Engineering Standards' requirement for roads serving more than 50 households. We suggest Council define expectations for roads within the precinct and include these as rules for the precinct within the District Plan, including things such as providing for safe walking and cycling, with footpaths and speed calming.	We are satisfied that the vehicle accesses to the precinct will be relatively minor local roads and that intersection performance and safety for these intersections can be dealt with at the resource consent stage in line with the Kaipara District Council's existing Engineering Standards.	Matter resolved.	As previous
11. TIA has stated that a future possible connection to Cullen Street can be made – request TIA to further address the effects on Cullen Street and the roundabout due to this additional movements and the active modes along Cullen Street.	The recommendation is simply for such a future link to be facilitated. Any such link would rely on land outside the plan change area, so is far from certain. The effects on Cullen Street would have to be evaluated at the time in which such a link is actually proposed but this is not warranted at this stage.	In our view a road connection to Cullen Street is not desirable, and traffic should be directed to Cullen Street and Molesworth Drive via existing main roads (Cove Road and Mangawhai Heads Road). A future walking and cycling link to Cullen Street, however, would provide an alternative route for people from the northern side of the precinct to move towards Mangawhai Heads. We support this and think it should be included in the indicative walking and cycling network for the precinct.	Our previous comments still stand, but as no connection to Cullen Street is currently proposed we do not require any further information at this stage.	Matter resolved.	As previous

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12. Has the applicant considered future growth while undertaking the assessments of the intersection? If not request applicant to consider 10% future growth especially for Mangawhai Heads Road/Cove Road intersection, Mangawhai Heads Road/Cullen Street/Molesworth Drive, and the effects on Cove Road/Pigeonwood Place once Robert Hastie Drive has been fully developed/occupied.	The average daily traffic on both Cove Road and Mangawhai Heads Road is currently less than 2,500 movements per day - well below the level of traffic that can create capacity issues even at conventional tee intersections. In particular, Molesworth Drive currently carries traffic close to 10,000 movements on an average day and has a number of conventional tee intersections on it. One – Wood Street, carries close to 5,000 movements and three others carry close to 1,000 movements on an average day. The speed limit is lower at all of those intersections, but this does not have a significant influence on the capacity of the most challenging turn – right turns out of the side road. Wood Street has a right-turn bay but, as already shown, there is ample space for right-turn bays at all future intersections along the frontage of the plan-change precinct area if/when those are warranted. There are also numerous other intersections in much busier locations in locations with similar or higher speed limit. Examples are the intersections of Mangawhai Road, Baldrick Road, SH12 (Brynderwyn), Marsden Point Road, Mangapai Road, Maungakamea Road and Portland all on SH1N. No upgrades that would have a material impact on the capacity of those intersections are proposed. While Mangawhai is growing more rapidly than most, the traffic along the road frontages of the plan-change precinct will not reach the levels at any of the cited locations for many decades, probably never.	We accept the applicant’s evidence regarding the capacity of the Cove Road/Mangawhai Heads Road and Mangawhai Heads Road/Molesworth Drive/ Cullen Street intersections, and are satisfied with the modelling undertaken provided there has not been a significant under-estimation of traffic volumes (see above at 6). However, we support NTA’s request for SIDRA modelling of the Pigeonwood Place/Cove Road/Robert Hastie Drive intersection and other intersections connecting the precinct to Cove Road/Mangawhai Heads Road (see above at 7), as this will help to determine the appropriate layout for these intersections.	Addressed in item 8 above	Addressed in item 8 above	Matter resolved. The SIDRA analysis has been provided.
13. Request a minimum of 4.5m setback from the road boundary based off Exposure Draft District Plan.	No response provided	Agree with NTA’s request. Suggest this is included as a provision within the precinct rules in the District Plan (unless the Exposure Draft District Plan is adopted prior to approval of the precinct plan).	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter	As previous
14. Request applicant to include commercial/industrial activity as a Discretionary Activity or Non-complying in the District Plan.	No response provided	Agree with NTA’s request.	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter	As previous
15. The minimum lot sizes proposed is 400sq.m and the TIA has assumed that the lot sizes are 1000sq.m to determine the number of lots that can be accommodated. Request the TIA to address the possibility for smaller 400-500sq.m lots in these sections, which would create additional effects. Request TIA to address this possibility and carry out SIDRA modelling accordingly.	The average lot size estimated in the TIA was agreed by all project team members. It is based on a number of factors including the larger minimum lot size specified for part of the area (including the northern slope), the need for space for access, reserves, other services and the likelihood that some ground will be unsuitable for the establishment of dwellings. We maintain that an average 1,000 sq.m lot area is realistic and, also for the reasons already given, disagree that it is necessary to revisit the analysis.	Noted. Suggest the precinct rules in the District Plan include a provision that an average lot size of 1,000 sq.m will be maintained or stipulating the maximum number of dwellings for the precinct. As outlined above, this needs to be defined at a precinct level as it will influence the infrastructure required to serve the precinct as a whole.	Precinct provision to be drafted. No response provided by applicant.	Matter not resolved. No further discussions of this matter	As previous
16. Request applicant to carry out SIDRA modelling to determine if the one-lane bridge on the southern end of Cove Rd/Mangawhai Heads Rd would be able to accommodate the additional traffic generated. While we note there are many one-lane bridges throughout Northland which carry higher ADT than this one, Mangawhai is developing at a rapid rate and has a higher volume during the summer periods. Hence, we would like the modelling to be undertaken. Note: We request the SIDRA modelling to be undertaken for existing, future growth and peak summer periods as well.	This analysis has been carried out and finds that the bridge has capacity for at least 1,000 vehicle movements per hour (total in both directions), even with a bias in one direction - only likely outside peak holiday periods. The bridge has been modelled with a conservative “gap acceptance” of 10 seconds and vehicles in both directions giving way. Even at 1,000 vehicle movements per hour, the average delay in the busier direction is predicted at less than 22 seconds, with an overall average delay of 15 seconds. The 95-percentile queue in the busier direction is predicted at 24 vehicles with virtually no queues in the other direction. The bridge currently carries fewer than 200 movements during peak hours on average days and this is unlikely to increase to more than 300 during holiday periods. Even with growth in Mangawhai being more rapid than average, it will be many decades before the bridges on Cove Road experience levels of traffic that might create significant and/or regular congestion.	Request that the applicant clarify how many peak hour vehicle movements on the bridge they estimate will be generated by the development. We also note that the approaches to the one lane bridge appear to be mislabelled, unless we have been provided modelling for a different location. In general, we accept the applicant’s response and agree that some degree of congestion is to be expected and tolerated during the busiest peak periods.	Further consideration required. No response provided by applicant.	Matter resolved. No further information provided by applicant. However, we accept that the additional traffic associated with the Plan Change is unlikely to have a significant effect on the bridge’s operation.	As previous

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17. TIA has stated that the Mangawhai Heads Road/Cove Road intersection has capacity for more than 300 right-turns out of Heads Road even during holiday season – Request applicant to provide further information on how this was determined, was modelling or Austroads treatment check carried out to determine this?	<p>The methodology use is stated in Footnote 18, page 10, of the TIA. It was based on models as described in various Austroads publications. However, for completeness, a SIDRA analysis has been carried out of the intersection for current traffic plus 30% representing some 10 years of future growth plus traffic from the plan change precinct at full development and during peak hours of holiday periods. This shows that the greatest average delay for any turn – right turns out of Mangawhai Heads Road, will be only 12 seconds, with 95 percentile queues of fewer than 2 vehicles and less than 30% of the practical capacity of the turn. This analysis is conservative because it omits the left turn lane from Cove Road north. The high capacity is partly a result of the low frequency of through movements on the priority route – Cove Road. Summary output of the analysis, both with and without PPC83, are appended.</p> <p>It is further noted that there is space for the Cove Road/Mangawhai Heads Road intersection to be converted to a roundabout in future. Figure R1 shows an indicative roundabout with an outside diameter of 25 metres. A roundabout is the highest standard of treatment ever likely to be necessary for this intersection.</p>	Noted. No further information required unless updated traffic counts (see above at 6) indicate volumes have been significantly underestimated.	We are satisfied with the analysis undertaken, provided updated traffic counts can be used to update the analysis per item 6.	<p>Matter potentially resolved, subject to further information to be supplied at the Hearing.</p> <p>Subject to the resolution of item 6 above, confirming that the traffic data collected was representative.</p>	<p>Matter resolved.</p> <p>Updated recent traffic counts are provided and has been utilised for the updated SIDRA analysis.</p>
<p>18. 13.14.2 – Reads</p> <p>“the Cove Road North Precinct Road, Cycleway and Pedestrian Connection</p> <p>2. Council will have regard to the following additional matters when considering an application for resource consent under this rule within the Cove Road North Precinct:</p> <p>i. The extent to which any road, cycling and pedestrian connections are established in accordance with the Cove Road North Precinct Map 1 and Cove Road North Precinct Concept Plan 1”</p> <p>Request applicant to remove the wording “in accordance with Cove Road North Precinct Map 1 and Cove Road North Precinct Concept Plan 1” as the active modes connection has not been addressed completely.</p>	No response provided	Agree with NTA’s request. To be updated within the precinct rules.	<p>Precinct provision to be drafted.</p> <p>No response provided by applicant.</p>	<p>Matter potentially resolved subject to further information to be supplied at the Hearing.</p> <p>Subject to the applicant providing an amended indicative transport plan through the Hearing process, as per items 1-3 above.</p>	<p>Matter partially resolved.</p> <p>A shared path should be provided along the PC83 frontage on Cove and Mangawhai Heads Road.</p>

**APPENDIX A Proposed changes to indicative
transport plan**

Figure 1: Proposed changes to indicative transport network – April 2023

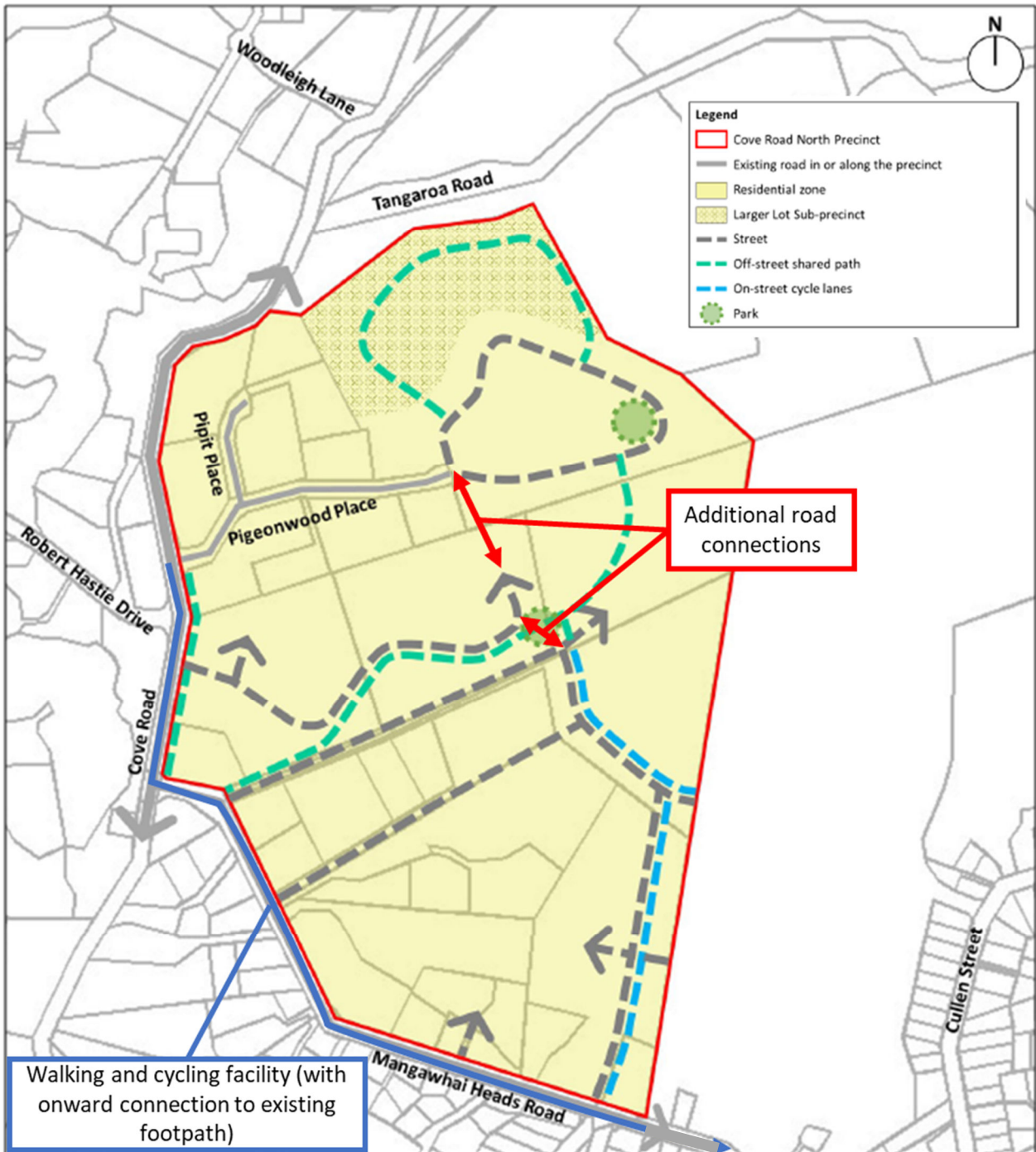


Figure 2: Proposed changes to indicative transport network – January 2024

