



| PROJECT | PRIVATE PLAN CHANGE 83 (MANGAWHAI HEADS) |
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| SUBJECT | SUMMARY OF REQUESTS FOR FURTHER INFORMATION AND SUBSEQUENT |
| JODICI | RESPONSES |
| то | 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.

Reference: P:\flow\024 Proposals\Local Govmt\Council - Whangarei Kaipara Northland NTA\Kaipara NTA\Plan Change 83\Reporting\TN2B230418 PPC83 RFI response commentary.docx - James Georgetti

| 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 |
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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 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. | novement network in Urban Design Assessment) to show Indicative intersection/vehicle crossing locations indicative number of lots accessed from each road/access his needs to be resolved at a Plan Change level as it will ictate what intersection designs are appropriate for the | 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. |
| 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 | | this indicative transport plan be amended to include: 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 | |
| 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 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. |
| 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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| 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. |
| 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 | 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 queueing 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. 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 resolved. 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. |

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| 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. | 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 trimming and a small volume of earthworks is all that will be necessary to address the issue. This is another existing issue | 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 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. | 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. |
| | | | 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. |
| 9. The Plan outlines the indicative street an cycling connection on Mangawhai Heads Road but does not address the effects or the existing footpath on Mangawhai Hea Road and have shown an indicative off road shared path connecting to an existin footpath which would not be ideal. Request applicant to address this. | 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 | 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: 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. |

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| 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, Baldrock 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 |
| 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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| 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, disagee that it is necessity 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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| 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? | 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. 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. | | We are satisfied with the analysis undertaken, provided updated traffic counts can be used to update the analysis per item 6. | Matter potentially resolved, subject to further information to be supplied at the Hearing. Subject to the resolution of item 6 above, confirming that the traffic data collected was representative. |
| 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 Plan 1" | No response provided | Agree with NTA's request. To be updated within the precinct rules. | Precinct provision to be drafted. No response provided by applicant. | Matter potentially resolved subject to further information to be supplied at the Hearing. Subject to the applicant providing an amended indicative transport plan through the Hearing process, as per items 1-3 above. |

APPENDIX A

Proposed changes to indicative transport plan



