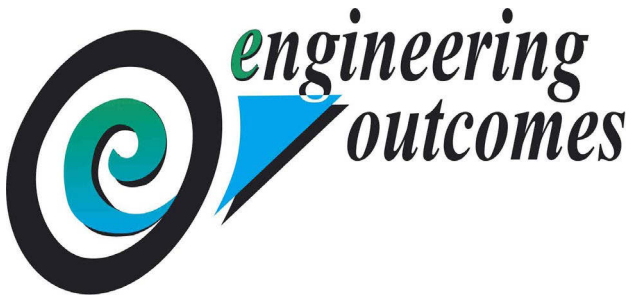


Appendix 7

Integrated Traffic Impact Report



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SUBDIVISION

131 & 189 THREE MILE BUSH ROAD, WHANGAREI



INTEGRATED TRAFFIC ASSESSMENT

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1 October 2021

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1. PURPOSE, DESCRIPTION OF THE PROPOSAL AND SITE

This report is an integrated traffic assessment of a proposed subdivision at 131 and 189 Three Mile Bush Road, Whangarei. It is provided in accordance with the Whangarei District Plan including Rules TRA-R15, TRA-R16 and TRA-R17 and information requirements TRA-REQ2 and TRA-REQ3.

The site is situated at the north-western residential edge of the suburb of Kamo. It is on the north side of Three Mile Bush Road, along which one of the parent lots has frontage and the other is accessed by way of a pan handle strip.

The proposal is a subdivision of the parent lots into seventy-six lots. A new cafe is proposed on Lot 23. It has a gross floor area of 200 square metres and ten parking spaces will be provided on the same site. Its hours of operation are proposed to be 6am to 10pm.

The subdivision is described in plans by Blue Wallace Surveyors Ltd entitled “Lots 2 & 3 DP 99045; 151 Three Mile Bush Road, Kamo – Whangarei. Prepared For: Hurupaki Holdings Ltd”, referenced 20183-00-PL-100 Revision 18 and dated 31 August 2021. The access and road designs are described in plans by Blue Wallace Surveyors Ltd referenced 20183-00-RC-300 Revision 2 and dated 19 August 2021. The café site is shown on another plan by Blue Wallace Surveyors Ltd referenced 20183-00-PL-101 Revision 1 and dated 26 August 2021.

2. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed new intersection and pedestrian refuge on Three Mile Bush Road and the internal subdivision access are suitable, fit for their intended purpose and will meet the requirements of the *Whangarei District Plan*.

In particular, a central turning bay and pedestrian refuge is proposed on Three Mile Bush Road. There is a footpath along the opposite (southern) side of Three Mile Bush Road, it is less than a 1 kilometre walk to the nearest public bus stop and the design includes safe linkages to existing walking infrastructure. A combination of carefully designed internal road alignment including the minimum suitable carriageway widths, a speed control device and other measures that will provide a calming effect on drivers, will ensure safe speeds and minimal exposure for pedestrians crossing the roads. Inset parking bays are proposed, at a rate of one parking space for each 2.4 lots, to minimise the risks associated with parking on the street. The design maximises opportunities for walking by providing safe linkages to the existing footpath on Three Mile Bush Rd and the Hurupaki school grounds and scenic reserve.

At full subdivision development, traffic generation totaling close to 800 movements is expected on an average day. Walking trips are expected to be frequent and a significant proportion of all trips. The use of bicycles will remain well below that of private cars for many years at least, but is expected to increase significantly with the advent of affordable e-bikes and ongoing future improvements to public offroad cycling and shared paths.

Even with the design maximising opportunities for walking, in particular, private cars will be the dominant mode of travel to and from this site. The road network the site leads to has more than adequate capacity to absorb the additional motor vehicle traffic from the proposal at full subdivision development, including subdivision development and construction traffic (which will be managed through an approved traffic management plan and temporary traffic management).

Existing key intersections with Three Mile Bush Road beyond the site, including those with Te Puia Street, Tuatara Drive/Crawford Crescent and Kamo Road, are assessed to be adequate in their current form and layout, so upgrading is not warranted to address the effects of the additional traffic. In general, the standard development contribution framework will address the effects on the existing road network adequately.

As such, it is concluded that the traffic generated by the proposal will be well managed such that its effects are less than minor.

3. SUBDIVISION ACCESS

All lots are proposed to lead to proposed new public roads either directly or by way of three jointly-owned access lot (JOALs). All new roads that connect to a single new intersection on the northern side of Three Mile Bush Road at RAMM distance 1.76 kilometres. None of the new lots will access Three Mile Bush Road directly.

The new intersection with Three Mile Bush Road is proposed to be a give-way controlled tee intersection. On Three Mile Bush Road, a right-turn bay is proposed for the new intersection and a pedestrian refuge is proposed a short distance to its west, all as shown in Figure 1. It is possible, indeed desirable, to carry out all widening on the site (northern) side of Three Mile Bush Road. This would be achieved with a small realignment that actually eliminates one of the two bends on the road. This is the basis of the preliminary design in Figure 1.

Sight distances in relation to the new connection with Three Mile Bush Road are as follows:

- 119 metres towards the east; and
- More than 290 metres towards the west.

The sight distances towards the east are currently restricted by a crest in the road. Some minor bank trimming might be necessary to achieve the full available sight distance of 119 metres from the new intersection itself. As necessary, this will be carried out at the time of intersection construction.

The new roads are proposed to be kerbed and formed to a carriageway width of 6.0 metres and with a footpath on one side. Traffic calming is proposed in the form of a combination of planting, several flush threshold-type treatments consisting of patterned concrete, and one speed table (between Lots 23 and 52). The relatively narrow roads will also provide a natural calming effect on the traffic.

Parking bays are proposed such that, even when allowance is made for driveway crossings into each lot, there is space for a total of 36 cars to park as shown in Figure 1 (heavy blue lines). That is a rate of at least one parking space for each 2.1 lots houses

Figure 1. Onstreet parking clear of the likely locations of driveway crossings and street trees.



With the exception of Lots 67 to 73, at least one on-street parking bay is provided within 100 metres walking distance of each lot. Lots 67 to 73 are larger than average – the smallest of them being 740 sq.m, so it will be feasible to provide sufficiently for parking on those lots themselves.

The shared access on JOAL 302, which leads to ten lots, is proposed to have a 5.5 metre carriageway width and a 1.0 metre footpath along one side. The other JOALs (300 and 301), which lead to no more than three lots each, are proposed to be formed to a 3.15 metre carriageway width (including the channel on one side and concrete bond beam on the other). The proposed widths of JOALs 300 and 301 meet the council standards for shared access that leads to as many as four lots¹.

The site adjoins another subdivision that is currently under construction – “The James” at #115 Three Mile Bush Road. It is proposed that the two subdivisions be linked for people on foot – by way of Lot 202 of The James. The James includes footpaths on all internal roads and its Lot 202 links to one of them. The James has a public walkway linkage to the playing fields of Hurupaki school.

Another proposed reserve provides a linkage to the existing recreation reserve on Mount Hurupaki (via Lot 205). Yet another – Lot 203, provides potential foot access to the adjoining block along the western boundary of the site (although Lot 203 is, primarily a drainage easement and physical walking infrastructure is not proposed on it as part of this subdivision).

There are currently three road connections to Three Mile Bush Road along the frontage – two on Lot 2 DP 99045 (#131) and one at the pan-handle connection for Lot 3 DP 99045 (#189). All are proposed to be closed and replaced by the single intersection, although the crossing for #189 might be used as an access for construction traffic.

¹ Whangarei District Plan Table TRA 9.

4. DESCRIPTION OF EXISTING ROADS

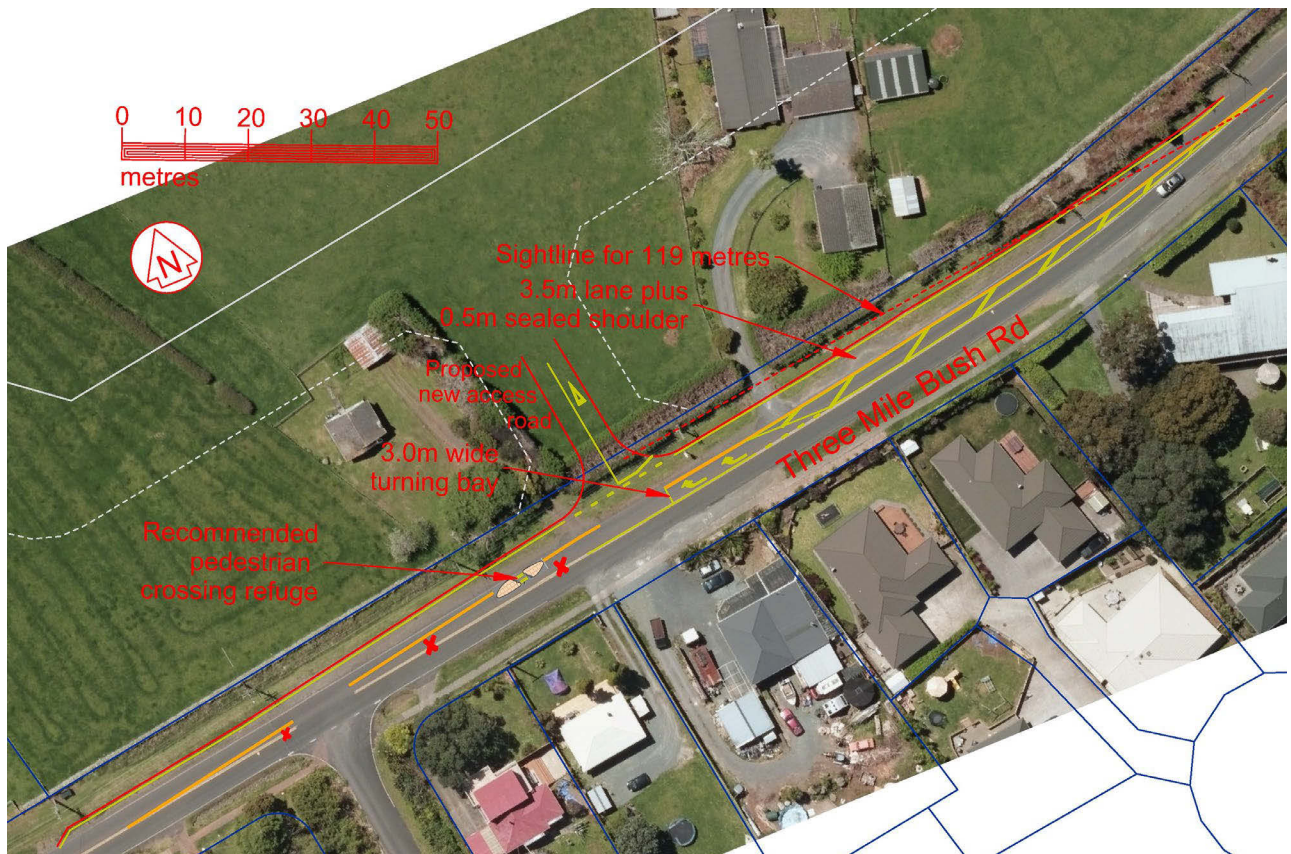
Three Mile Bush Road is sealed with two lanes, a carriageway of width varying between 6.5 and 7.0 metres and a footpath on the southern side. It is mostly straight, although there is a gentle s-bend a short distance east of the proposed new intersection. Three Mile Bush Road has undulating vertical alignment with a general climb towards the west. Its gradient in the vicinity of the new intersection is a 2% climb towards the west. Three Mile Bush Road has the status of primary collector road².

The current speed limit on Three Mile Bush Road is 50 kilometres per hour through the site frontage and for a little more than 300 metres west of the proposed intersection, where there is a transition to 80 km/hr.

At its eastern end, Three Mile Bush Road links to Kamo Road in the Kamo CBD and, at its western end, Pipiwai Road, Ruatangata. The intersection with Kamo Road has traffic signals and also includes Station Road – part of the route between Kamo and the suburb of Tikipunga. There is a roundabout on the route between the site and Kamo CBD. It is 1.1 kilometres east of the site and also includes Tuatara Drive and Crawford Crescent.

The new intersection is 600 metres from Hurupaki School entrance and 840 metres from the nearest bus stop³

Figure 2. The site and proposed access arrangements including associated right-turn bay, widening and pavement marking.



² Whangarei District Plan interactive maps.

³ Which is outside 63 Three Mile Bush Road.

Photo 1. A panorama of the site looking north from the opposite side of Three Mile Bush Road, opposite the proposed intersection location.

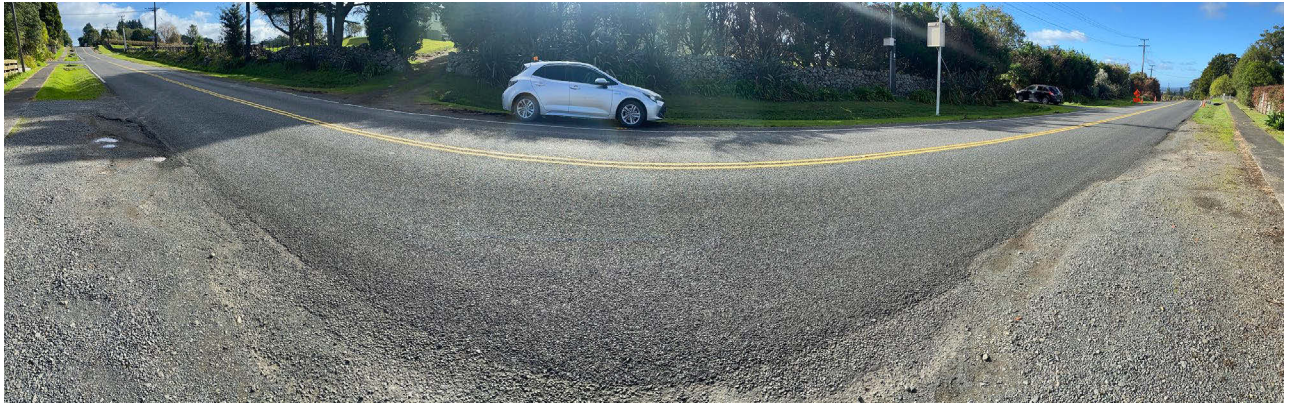


Photo 2. Looking east along Three Mile Bush Road from the proposed intersection location.



Photo 3. Looking west along Three Mile Bush Road from the proposed new intersection location. The pedestrian refuge is proposed on the frontage with the timber fence at upper left.



5. TRAFFIC

All traffic movements referred to here are one-way movements whether an entry, exit or a movement along a road, during a specified time period, vmpd = vehicle movements per day.

5.1 Motor vehicle traffic generation, origins and destinations

The subdivision is expected to generate an average of 8 to 9 vehicle movements per developed lot per day. The café will have capacity for close to 50 seats. For an average day, 4 sittings are expected per seat, so a total of 200 customers, 6 staff, 80% of café patrons and 90% of staff being from outside the subdivision and average vehicle occupancy of 2.2 people per vehicle for customers and 1.2 for staff. On this basis, the café will generate 150 to 155 vehicle movements on an average day. At full development, that is a total of close to 800 movements on an average day for the entire proposal. A high proportion – at least 98% will be cars and light vehicles, especially once the subdivision is fully developed⁴.

It is estimated that 80 to 85% of generated traffic on will travel to/from the east. There are two main destinations in that direction – Whangarei CBD or Kamo/Tikipunga. To inform the proportions that will travel to/from each destination, a survey⁵ has been carried out of the northern node (common) point for two route options between this locality and the Whangarei CBD. The northern node point is Three Mile Bush Rd/Te Puia Street intersection and the southern node point is the intersection of Kamo Road and Whau Valley Road. The route options between those points are:

- A. Three Mile Bush Rd and Kamo Road; or
- B. Te Puia Street, Fairway Drive and Whau Valley Road.

The distances between node points by way of each route are, respectively:

- A. 3.3 kilometres; and
- B. 3.1 kilometres.

The speed limit on all roads on both routes is 50km/hr. Route A has the traffic signals at Kamo Road and the roundabout on Three Mile Bush Road. Route B has one roundabout, and a give-way controlled tee intersection with predominant left-turn out of the priority route and right-turn into it. Most of Route B has traffic calming devices in the form of concrete chicanes, although the safe speeds of most are generally not much below the speed limit on the route.

Overall, Route B is somewhat superior to Route A. However, with Kamo and Tikipunga being significant destinations in themselves and significant destinations being accessible by way of Fairway Drive and/or Te Puia Street (including part of Kamo and the Jane Mander rest home and retirement village), the survey was necessary to estimate the split of traffic at the northern node point.

⁴ After which only occasional trips by delivery, rubbish, furniture and occasional service trucks are expected – rarely more than 4 visits (8 trips) per day and only on rubbish pickup days, usually significantly fewer and often no more than one visit by a small or medium truck.

⁵ Between 4.30 and 5.15pm on a Tuesday in July 2021 on a day in which schools were open. The frequency of all traffic movements through the intersection was recorded including the straight-through movements on Three Mile Bush Road.

The survey at the Three Mile Bush Road/Te Puia Street intersection determined that 55% of traffic travelling to and from locations west of Te Puia Street⁶ travels to/from Kamo and Tikipunga by way of Three Mile Bush Road. The other 45% uses Te Puia Street and most will continue along Fairway Drive. This split is expected to be mirrored by subdivision traffic for most of the day, with the only difference being a change in the tidality of the traffic⁷.

Between 9.5 and 10% of daily traffic is expected during the peak afternoon hour, with a slightly lower proportion during the morning peak period. Variations in traffic generation across seasons are not expected to be significant.

5.2 Other transport modes

Bicycle use is expected to comprise some 2% of trips for transport purposes. The high recent uptake of e-bikes should improve this and some recreational cycling is also likely, especially with future improvements planned by the council in the area⁸.

Hurupaki School is within easy walking distance of the site, especially with the linkage by way of The James subdivision, so is expected to result in a significant number of walking trips – mainly by children but also some adults. The nearest bus stop is also within a relatively easy walking distance – less than one kilometre for almost all lots, so will be another significant destination for people on foot. With the site being more than 1.8km to Kamo CBD and more than 1 kilometre to the nearest shop, most other walking is expected to be recreational.

5.3 Traffic on Existing Roads

Mobile Road estimates average daily traffic of a little over 2,300 vehicle movements per day on Three Mile Bush Road at the site location, nearly 7,000 movements per day at the eastern end of Three Mile Bush Road, nearly 14,000 movements per day on Kamo Road south of Three Mile Bush Road and 10,500 movements per day on Kamo Road north of Three Mile Bush Road. At the roundabout 1.1 kilometres east of the site, the traffic is estimated at 3,490 and 4,650 metres on the western and eastern legs of Three Mile Bush Road respectively, 650 movements on Tuatara Drive and 870 on Crawford Crescent. Observations of the roundabout during both the morning and afternoon peak periods did not highlight any capacity issues. In fact, the intersection was operating well within its capacity at those times.

There is also potential for significant future growth in traffic on Three Mile Bush Road because of a large area of land in its catchment zoned “rural urban expansion zone” (RUEZ – 82 hectares west of the subject site, on both sides of Three Mile Bush Road), rural living (140 hectares), large-lot residential (180 hectares) and low-density residential (2.9 hectares). There is more land zoned both general residential and RUEZ leading onto Three Mile Bush Road east of the site.

⁶ Including Three Mile Bush Road and side roads including Dip Road

⁷ There was a definite bias of flows away from both Kamo and Whangarei CBDs at the time of the survey.

⁸ Including the Three Mile Bush Rd shared walking/cycling path which links Kamo Road to Dip Road and is shown in the council’s Walking and Cycling strategy as a future route. Nick Marshall, senior traffic engineer with the Northland Transport Alliance, states that this path was originally (2016) programmed outside the 10-year planning horizon, but that “We are looking at updating the strategy in the next few years, and the 3 Mile Bush trail/path is one of the routes we anticipate gaining emphasis.”

With servicing by the three community waters, the district plan provides for subdivision of RUE zoned land down to 500 square metre lots. This has the potential to create between 1,100 and 1,200 additional lots west of the site and some 220 to its east. The other zones have the potential to add another 200 to 210 lots west of the site and up to 150 to 160 between the site and Kamo Road (with full servicing). More details are provided in section 7.2.

With full servicing, there is potential for at least 10,000 additional traffic movements each day from west of the side alone and as many as 13,000 per day from the total catchment of Three Mile Bush Road.

The westbound operating speed of traffic approaching the new intersection from the east has been measured at 68 km/hr at the limit of visibility east of the intersection location.

5.4 Crashes

The New Zealand Transport Agency's *CAS* database of crashes reported to the Police has been searched for all crashes on the key road routes that the proposal will increase traffic on, since the start of 2016.

A total of 21 crashes have been reported on Three Mile Bush Road between the site and Kamo Road in that time of which 8 resulted in minor injuries but none resulted in either serious injuries or fatalities. Two of those injury crashes involved vulnerable road users, both at intersections and both a result of errors on the part of the motor vehicle driver. Another six involved various turns at side roads or private crossings. There were no obvious road factors involved in the crashes. Most occurred in locations in which Three Mile Bush Road is at least 11 metres wide and/or were caused by inattention on the part of the driver at fault and/or excessive speed.

Only one crash has been reported on the 460 metre long unkerbed section of Three Mile Bush Road between Brentwood Avenue and the proposed new intersection. That involved a loss of control on a straight section of road due to the driver falling asleep, with no injuries resulting.

Twelve crashes have been reported on Te Puia Street and Fairway Drive of which three resulted in injuries, one serious. The crash that caused serious injuries was caused by car undertaking a motorbike on the approach to a worksite. The other injury crashes involved a cyclist being "doored" by a careless driver exiting from a parked car and a vehicle turning right out of Granfield Place into the path of another northbound vehicle. Granfield Place is an uncontrolled intersection with poor visibility to the right on the approach to the intersection.

6. ASSESSMENT OF TRAFFIC EFFECTS AND PROPOSED MITIGATION MEASURES

The most significant traffic issue in relation to the proposal is considered to be conflict created by right turns into the new side road and demand for additional crossings of Three Mile Bush Road by people on foot. The potential effect on the existing routes and intersections that the generated traffic will add the highest significant proportions of traffic to, also warrant consideration.

At the current levels of traffic on Three Mile Bush Road combined with the strong bias of traffic to and from the east – the frequency of exits to the right will always be low, so it will almost certainly be many decades before the capacity of the new intersection becomes a potential concern and this aspect is not evaluated in detail.

6.1 Safety of the new intersection

With a westbound operating speed of 68 km/hr, the safe-intersection sight distance (SISD) on a 2% uphill gradient is 142 metres⁹. The available sight distance of 119 metres is considered adequate for the following reasons:

- The sight distance towards the east is necessary for right-turns in both directions. The full right-turn bay, in providing shelter for vehicles turning right into the subdivision, reduces the need for a high standard of sight-distance on that approach (SISD is the highest standard applicable to safety).
- A high proportion of turns out of the subdivision will be left turns in which the sight-distance towards the east is not relevant;
- Design for operating speeds 18 km/hr above the speed limit is excessive. It is acknowledged that a margin is appropriate over and above the speed limit but, when that is only 50 km/hr, a margin of not more than 10 km/hr is generally accepted. SISD is achieved for an operating speed of 60 km/hr;
- Even at an operating speed of 68 km/hr, the sight-distance towards the east comfortably exceeds the “safe-stopping sight distance” (SSSD) standard by 33 metres or 1.8 seconds at the full operating speed.

Overall, it is concluded that the new intersection will be fit-for-purpose and the risks associated with it will be well within acceptable limits.

6.2 Safety of internal roads and shared access

The safety of internal roads and access is assured through a combination of carefully designed internal road alignment¹⁰, carriageway width, flush thresholds and a speed table. This will ensure safe speeds and minimal exposure for pedestrians crossing the roads. The inset parking bays minimise the risks associated with parking on the street.

The access on JOAL 302 will be adequate. It is acknowledged that the district plan only permits accesses that lead to more than eight lots and that previous council standards¹¹ were for a wider carriageway than is proposed. However, a carriageway 5.5 metres wide provides comfortable two-way travel while moderating speeds below levels that are a potential hazard for people on foot. Narrower widths also minimise exposure for people crossing the roadway on foot. This is supported by previous analysis of rural roads of various widths, which have always found that the “social cost” of crashes in which the widths of roads is relevant, consistently increases with the widths of roads.

⁹ Calculated with friction coefficient of 0.36, 2.0 second reaction time and 3 second “observation” time at the full operating speed.

¹⁰ Including a minimum safe design speed of slightly more than 30 km/hr on the tightest bends – curve radii 20 metres. The approaches to all but one of those bends is less than 40 metres long. A speed control device with 30km/hr design speed is proposed on the approach greater than 40 metres long – the northern approach to the southwestern bend.

¹¹ *Environmental Engineering Standards 2010* Table 3.1. These are now only one means of compliance with the district plan and there are no standards in the district plan for public roads.

6.3 Heavy traffic

With no more than 2% of generated motor vehicle traffic expected to be heavy vehicles, the proposed facilities will also be fit for the small number of large vehicle movements. Suitable temporary traffic management will be used to managed construction traffic including heavy traffic.

6.4 Pedestrian and cyclist safety and accessibility, other modes

The proposed pedestrian refuge, which will be linked to the internal subdivision footpaths and then the existing footpath along the southern side of Three Mile Bush Road, will ensure a safe pathway for pedestrians to all of the most common destinations¹².

Accessibility for people on foot will be enhanced by the linkage to The James subdivision and thence both Hurupaki school and the recreational reserve on Hurupaki mountain.

With a public bus service available within a relatively easy walking distance of this locality and the good pedestrian linkage to the nearest bus stop, the usage of public buses is expected to be close to average for Whangarei.

6.5 Existing road network

In terms of safety, the crash history on the routes between the site and both Whangarei and Kamo CBDs does not indicate anything of particular concern with the routes that the proposal will increase traffic on. In particular, only one damage-only crash has been reported on the narrower section of the route (between the site and Brentwood Avenue). The only serious-injury causing crash occurred at a worksite and was likely due to a combination of poor traffic control and driver inattention. Most, possibly all, other injury-causing crashes are due to driver inattention and/or excessive speed – factors that the subdivision cannot be expected to address.

Three Mile Bush Road and Fairway Drive both have sufficient midblock capacity for future growth well into the decades and the proposal will only take up a small proportion of it. Furthermore, the narrower section between the site and Brentwood Avenue is being upgraded and widened as part of another subdivision.

The intersections that the proposal will increase turning traffic through are three on Three Mile Bush Road (those with Te Puia Street, Tuatara Drive/Crawford Crescent and Kamo Road), Whau Valley Road with Kamo Road and SH1N with Kamo Road. These are addressed in turn.

6.5.1 Three Mile Bush Road/Te Puia Street Intersection

This is a give-way controlled tee intersection with a central turning bay that continues to Dip Road (which is 68 metres west of Te Puia Road and on a “left-right” configuration). According to Mobile Road, current traffic on Three Mile Bush Road through the intersection is some 2,800 movements per day with 1,400 on Te Puia Street turning approximately equally in both directions¹³.

¹² Including the store near the roundabout, Onoke scenic reserve and a park and playground on Tuhangi Street. The intersection is also 600 metres from the entrance to Hurupaki school.

¹³Mobile Road shows equal flows on Three Mile Bush Road each side of Te Puia Street, which indicates equal turn frequencies in each direction.

Contrary to what Mobile Road indicates, the survey of traffic at this intersection showed a significant bias in turns to/from the west including Dip Road – 81%. It also indicated more traffic on Te Puia Street than indicated by Mobile Road. During the afternoon peak hour, a total of 280 movements was recorded¹⁴ including 28 exits to the right and 97 right-turns into Te Puia Street. Also based on the survey, the subdivision is expected to add some 310 movements to the daily through-traffic each day and 255 per day to the daily turning traffic of which 10 to 11 will be right turns into Te Puia Street during the afternoon peak hour. There will be no increase in right-turn exits from Te Puia Street as a result of the subdivision.

During the peak afternoon hour with the subdivision at full development, with 306 movements on Te Puia Street of which 108 are right-turn entries, 310 through movements per hour on Three Mile Bush Road and 60% of all Te Puia Street traffic being exits¹⁵, the capacity of right-turn exits will be more than 300 movements per hour¹⁶ This compares with the 28 right-turns out of Te Puia Street during that hour. The capacity for right-turns into Te Puia Street will be more than 1,000 movements per hour.

On this basis, during the afternoon peak hour, the capacity of the Three Mile Bush Road/Te Puia Street will never be exceeded even with the proposed subdivision at full development.

6.5.2 Three Mile Bush Road/Tuatara Drive/Crawford Crescent Roundabout

Based on the survey, the subdivision is expected to add some 310 movements to the daily traffic through this roundabout each day, a large majority of which will remain on Three Mile Such Road in both directions. This will take up only a small proportion of the surplus capacity of the roundabout and, in fact, is unlikely to even be noticed by existing drivers and other users of it.

It is particularly noted that demand on this roundabout is, significantly less traffic than several other four-leg, single-lane roundabouts in Whangarei that are operating with an adequate level of service and are not proposed for upgrading, and this will continue. Only two relatively minor crashes have been reported at the roundabout and, while no crash is desirable, this is far from unusual for such roundabouts. In fact, one of the crashes was a loss of control and not strictly related to the presence of the roundabout.

6.5.3 Three Mile Bush Road/Kamo Road intersection

The proposal is expected to add some 30 to 32 movements to Three Mile Bush Road at this intersection during peak hours. Three Mile Bush Road traffic through this intersection. This is approximately a 5% increase on current traffic on Three Mile Bush Road at the intersection and less than 1% of all traffic through the intersection.

The Whangarei transportation model shows this intersection operating at Level of Service D during the afternoon peak hour in both 2023 and 2043 and during the morning peak only by 2043. This indicates significant surplus capacity in the intersection as Level of Service D is acceptable during peak hours and the 2043 analysis will have included development in the growth areas of the catchment including most of the subject site (which is zoned general residential).

The intersection is also not proposed for any upgrading work in at least the next 10 years¹⁷

¹⁴Approximately double that indicated by Mobile Road

¹⁵During the survey, which was carried out during an afternoon peak hour, 57.3% of Te Puia Street traffic was exiting.

¹⁶ When accepted intersection capacity theory, for random traffic flows, is applied.

¹⁷ Advice from Nick Marshall, senior traffic engineer at the Northland Transport Alliance.

Observations of the intersection during both morning and afternoon commuter peaks showed some congestion for southbound through traffic on Kamo Road north of the intersection in the mornings. Otherwise, and on other legs, almost all traffic was having to wait for no more than two phases of signals to clear the intersection.

The proposal will not add to the southbound through traffic on Kamo Road and so is not expected to have a significant impact on this intersection. In any event, it is only expected to add less than 2% to the total traffic through this intersection.

Furthermore, the contribution of the subdivision to the traffic through this intersection will decrease as other development occurs in the zones in the catchment that enable development at urban densities.

6.5.4 Other locations

The Whau Valley Road/Kamo Road and SH1N/Kamo Road intersections are both major intersection with traffic signals and one has recently been upgraded. The Whangarei transportation model shows one, or both intersections operating at Level of Service F during the afternoon peak hour even by 2023. Any additional traffic can only exacerbate this existing situation.

This said, the proposal will generate only a tiny percentage increase in the traffic those intersections. A single development that generates such a small increment in the traffic cannot be responsible for problems on a major route that it leads onto, even if congestion is already being experienced on that route. Development contributions are the appropriate means of addressing effects on such routes;

The proposal will also attract development contributions, which are related to effects on the overall road network in Whangarei district including, in fact especially, the Whangarei urban network;

Beyond Three Mile Bush Road and Whau Valley, the subdivision will only add a tiny proportion to the traffic, which will also be well dispersed. Any effects on those locations are also appropriately addressed by way of the standard transport development contribution.

6.6 Parking

The café will have capacity for close to fifty patrons. When operating at capacity, the parking supply of ten spaces is likely to be exceeded. The additional parking demand will be catered for by the new onstreet parking bays, which are suitable designed for such parking.

7. ASSESSMENTS AGAINST THE WHANGAREI DISTRICT PLAN TRANSPORT (TRA) PROVISIONS

7.1 Required information and assessments

In accordance with the April 2021 environment court consent order¹⁸, an integrated transport assessment (ITA) is required of the subdivision in accordance with information requirement TRA-REQ2. With the new roads vesting in the council, assessment and information is also required in accordance with information requirement TRA-REQ3.

In both cases, much of the information is contained within sections 2 to 6 of this report, in which case the location is simply cross-referenced. Additional information and/or assessment is provided as necessary and/or in reports and plan sets produced by others (also forming part of the application and referenced here as necessary). The information requirements are reproduced in black text and the information and/or assessment and/or a reference to this in the main body of this report, is given in green.

7.2 TRA-REQ2 information and assessment

- a. A description of the site characteristics, existing development, existing traffic conditions and trip generation, surrounding land uses, proposed activity and its intensity, and future development potential of the site.

A full description of the site characteristics, existing development, surrounding land uses, proposed activity and its intensity is given in the application report and summarised here along with answers to the other questions.

The site subject site totals 13.978ha in two existing allotments - Lots 2 and 3 DP 99045. The site is situated at the north-western residential edge of the suburb of Kamo, located north of Three Mile Bush Road. The site extends north from the road with a generally flat topography that then falls away to the Waitaua Stream, which bisects the site and flows towards the east. North of Waitaua Stream the site extends steeply up the base of the Hurupaki volcanic cone and the edge of the indigenous vegetation on the slope of the cone.

The site includes both scattered vegetation, including exotic planting around the existing residential units and broadleaf forest remnants encompassing the Waitaua Stream and also near the eastern boundary. There are also dry-stone walls but no other known archaeological sites.

Lot 2 DP 99045, which is close to 9.0 hectares, contains two existing residential units and accessory buildings with boundary fencing and exotic vegetation surrounding the residential units. Fifty-four lots and the proposed café are proposed to be created from it.

Lot 3 DP 99045 contains one existing residential unit and accessory buildings with boundary fencing and indigenous vegetation. The remainder of the site is a greenfield and currently largely vacant. Twenty-two lots are proposed to be created from Lot 3 DP 99045. Most are similar in size to most of those created from Lot 2 DP 99045, although most of those off ROW H are somewhat larger.

¹⁸ In relation to the TRA provisions. Court reference numbers ENV-2020-AKL-00132 and ENV-2020-AKL-00132.

Three Mile Bush Road is defined as a primary collector road, with two sealed lanes and a carriageway width varying between 6.5 and 7. metres and a footpath on the southern side. It has a legal width of 20m including carriageway and a speed limit of 50 kilometres per hour through the site frontage. There are no street trees in the road reserve adjacent to the site. However, there are a number of power poles and light poles. The three existing vehicle crossings on Three Mile Bush Road (two within #131 Three Mile Bush Road and one within #189 Three Mile Bush Road) will be replaced by the single proposed new intersection.

The Operative District Plan Environment maps identify the site as being zoned Living 1 Environment, with a Living Overlay. The Operative District Plan Resource Area maps identify the northern portion of the site as Outstanding Natural Landscape and Outstanding Natural Feature (Hurupaki Cone) and a Critical Electricity Line (overhead) which traverses the north-eastern corner of the site.

The Proposed District Plan (Urban and Services plan changes) zone maps identify the site as being zoned General Residential Zone and Rural Production Zone.

With these zones, especially in the balance area of Lot 3 DP 99045 along with the other restrictions on development on Hurupaki mountain, there is little or no potential for further development beyond what is already proposed.

The surrounding locality is predominantly residential in nature, featuring a mix of single-storey and two-storey dwellings. The existing built form comprises houses that are typically set back from the street by around 5 to 8 metres, with either fully open front yards or low fencing.

Existing residential development is located to the south of the site, situated across Three Mile Bush Road. Residential development (immediately adjacent under construction), Hurupaki Primary School and Kindergarten are located directly east of the site, within Dip Road.

The recreation reserve and native vegetation of Hurupaki Cone is located directly north of the site. While rural residential development of Cow Shed Lane is located to the west. A large vacant site, currently in pasture is located directly to the west.

With respect to schools and amenities, Hurupaki Primary School and Kindergarten are located immediately to the east, while Kamo Primary School is located approximately 1km to the east. The Local Centre of Kamo approximately 1.2km east of the site providing community services, convenience shopping and Kamo High School. Neighbourhood shops are within approximately 800m of the site, including dairy and takeaway outlets.

The area is served by public transport and pedestrian infrastructure. The bus network includes services along Three Mile Bush Road within less than 1 kilometre walking distance from the site.

The area is well serviced by public open space networks with natural reserves within Hurupaki Cone to the north, Onoke Reserve and Hodges Park to the east. Kamo park has active open space located within Kamo Centre.

- b. An assessment of the features of the existing transport network, including the following (where relevant to the proposal):
- i. Existing access arrangements, on-site car parking and crossing locations.
 - ii. Existing internal vehicle and pedestrian circulation.
 - iii. Existing walking and cycling networks.
 - iv. Existing public transport service routes and frequencies including bus stops and lanes.
 - v. Hours of operation for non-residential activities.
 - vi. The adjacent transport network road hierarchy and the safety of the transport network in the vicinity including crash history if relevant.
 - vii. The location and type of any existing level crossings in the locality.

For items i to iv and the road's place in the hierarchy, see sections 3 and 4. The crash history is described in section 5.4. There are no level rail crossings in the vicinity of the site.

- c. Description of the estimated number of trips which will be generated by each transport mode (public transport, walking, cycling and private vehicles, including heavy vehicles).

This is given in section 5.1.

- d. An assessment of the suitability of the proposal for all users within the development and connecting to the adjacent transport network. This shall include assessments of:

i. The accessibility of the development for public transport and how the design of the development will encourage public transport use by considering the attractiveness, safety, distance and suitability of the walking routes to the nearest bus stop.

See section 6.4.

ii. The accessibility of the development for pedestrians and cyclists and how the design of the development will encourage walking and cycling, particularly to nearby destinations such as reserves, other public spaces and commercial or community facilities.

iii. Any safety implications that may detract from walking or cycling to/from the development.

With the proposed pedestrian linkages including a new crossing refuge on Three Mile Bush Road and a walkway to the neighbouring subdivision to the east (The James), there are no particular features that will detract from walking to/from the development. The uphill gradient and relatively narrow carriageway in the last 460 metres of Three Mile Bush Road might be a barrier to cycling, although the increasing use of e-bikes and likely future upgrades due to future development will largely remove even this minor barrier.

iv. The accessibility of the development by private motor vehicles and the suitability of the proposed access and use of the site with respect to the safe, efficient and effective functioning of the transport network.

See section 6. This shows that the components of the road network that the subdivision will add significant traffic to have more than adequate surplus capacity and that the design of the vehicle access and pedestrian facilities will ensure that the traffic is well managed and the associated risks well within acceptable limits.

- e. An evaluation of the effects of the development on the surrounding transport network, including:

i. Impacts on the operation of public transport infrastructure, and any vehicle and pedestrian/cyclist conflicts likely to arise from vehicle movements to and from the development.

The nearest public transport infrastructure on Three Mile Bush Road is more than 0.8 kilometres from the site so, apart from increasing the usage of the public bus service, the subdivision will not have material effects on it. No unusual pedestrian/cyclist conflicts will arise from vehicle movements to and from the development. In particular, the footpath on Three Mile Bush Road is on the opposite side from the site, so very few pedestrian movements across the intersection will be necessary. Left-turn lanes are a potential hazard for cyclists, but no left-turn lane is proposed (and neither is one warranted).

- ii. The impacts that any additional vehicle movements are likely to have on the capacity and operation of adjacent road and rail networks, including any intersections and level crossings. See section 6.5. There is no rail network in this vicinity.
 - iii. For heavy vehicle trips per day, whether there are any effects from these trips on roading infrastructure. See section 6.3.
 - iv. Where the development will directly impact the State highway, a summary of consultation with the New Zealand Transport Agency. The proposal will have only negligible impact on roads managed by the NZTA, the nearest of which is SH1N nearly 4 kilometres from the site by road by which point the generated traffic will only be a tiny proportion of all traffic.
 - v. The impacts of construction traffic where a development will require a significant amount of construction work. The development of the subdivision will require relatively small volumes of earthworks and no importation of fill nor export of surplus spoil. Access road construction will be carried out under an approved traffic management plan and temporary traffic control suited to the levels of both construction traffic and that on Three Mile Bush Road.
 - vi. Where the development will directly impact the railway corridor, a summary of consultation with the railway operator. No impact.
- f. An assessment of how the transport network will be designed to accommodate infrastructure and services, stormwater, lighting, landscaping and street trees. For internal roads, this is shown in the plan set attached to the application. For larger scale non-residential developments this shall include consideration of underground electrical supply system for electric vehicle charging stations. No electric-vehicle charging stations are proposed at this stage.
- g. Identification of any necessary mitigation measures that will be required to address any impacts on the transport network, including:
- i. Potential mitigation measures needed both within the proposed development and on the transport network surrounding the development including any improvements, upgrades, alterations or extensions to the transport network (including at level crossings).
 - ii. Any mitigation required to achieve convenient and safe operation of access points and loading areas for all users.
- The key traffic management and mitigation measures are shown in Figure 2 of this report and described in section 3. Details of internal road design and on-street parking are given in the road design plan set. The key measures are:
- the right-turn bay for the new intersection on Three Mile Bush Road;
 - a new pedestrian refuge on Three Mile Bush Road a short distance west of the new intersection and linking to the internal footpaths;
 - a combination of internal road alignment and width, threshold treatments and a speed control device that will ensure safe speeds and minimal exposure for pedestrians crossing the roads. Inset parking bays minimise the risks associated with parking on the street.
- iii. How the design and layout of the proposed activity maximises opportunities, to the extent practical, for travel other than by private car. The new pedestrian refuge will ensure safe linkage to the existing footpath on Three Mile Bush Road.

iv. Where appropriate, the use of Crime Prevention Through Environmental Design principles and techniques to mitigate any safety issues for pedestrians or cyclists.

The proposal will be addressing CPTED matters in the road spaces and immediately related pedestrian routes by:

- Ensuring good sightlines and visibility;
- Encouraging passive surveillance from adjacent homes by ensuring that houses address the street and neighbouring open space;
- Promoting heightened community use of public areas, including road corridors, by developing them as appealing places to move through and occupy. Encouraging moderate speeds of motor vehicles is another key to this;
- Designing the project in a way that fosters regular engagement between people and a growing sense of neighbourhood and community in which people know and regularly engage with each other;
- Providing suitable levels of lighting to streets; and
- Drawing in established character themes of the site and its setting, including stone walls and indigenous vegetation, into the new, residential identity of the place.

v. A description of measures that will be put in place to mitigate against the effects of the construction process. See item e(v). Earthworks will be almost entirely a cut and fill operation on the site. Temporary traffic management under an approved TMP will manage construction traffic that must move onto and off the site.

vi. A summary of the Integrated Transport Assessment including key findings and implications that the development will have for transport including any proposed mitigation measures. See section 2.

h. An overview of the transport implications of existing land uses and any land use characteristics that affect the proposal, including in the wider surrounding area those that will affect assessment of the proposal. This shall consider projected growth predictions and predicted annual average daily traffic.

The catchment of Three Mile Bush Road west of the site includes the following zones:

- Rural urban expansion zone (RUEZ): 82 hectares in 45 lots, all west of the site;
- Rural Living zone: 140 hectares in 50 lots;
- Large-lot residential zone: 180 hectares in 220 lots;
- Rural production: 1,730 hectares in 333 lots; and
- Low-density residential zone: 2.9 hectares in part of one lot.

There are also significant tracts of land zoned Open Space in the catchment including part of the Pukenui Forest. No development potential is assumed for those areas.

These zones provide for development as follows (in all cases, it is assumed that up to 30% of the area is used for access infrastructure and/or cannot be developed at the maximum density because of terrain and/or engineering - geotechnical or flood susceptibility, considerations. Some allowance is also made for subdivision applications that are more restrictive than controlled):

- The RUEZ provides for subdivision development down to 1 hectare lots before reticulated services are available and 500m² once reticulated. Of the 45 lots in this area, 15, totalling 60 hectares, are larger than 2 hectares. So the estimated development potential of this, over and above the existing 140 lots, is estimated at some 35 to 40 lots prior to reticulated servicing and at least 1,100 lots post-servicing;
- The Rural Living zone provides for an average lot size of 2 hectares. Five lots, totalling 84 hectares are larger than 4 hectares, so the estimated development potential, over and above the existing 50 lots, is estimated at some 30 to 35 lots over and above those already within this area;
- The large-lot residential zone provides for 5000m² lots. Only 30 lots totalling 122 hectares are larger than 5000m², the estimated development potential is estimated at 150 to 160 additional lots;
- The low-density residential zone provides for 2000m² lots, so there is potential for another 10 to 11 lots in this zone; and
- The RPZ provides for an average lot size of 20 hectares. Only two lots, totalling 211 hectares, are more than 40 hectares. The development potential should be more than the 9 to 10 additional lots this indicates. Under more restrictive consent applications – say another 20 to 25 should be realistic.

That is, in the catchment of Three Mile Bush Road west of the site, a total of 240 to 250 additional lots prior to servicing and more than 1,300 lots with full servicing. This compares with a little more than 660 existing lots within that catchment.

Much of the catchment of Three Mile Bush Road between the site and Kamo Road is development at full urban intensity and/or at the intensity anticipated by the zone. However, some is rural-residential but zoned either General Residential or RUEZ and a few large blocks are zoned General Residential which provides for 400m² lots. In that area, there is estimated potential for another 150 to 160 lots in the General Residential zone and some 220 in the RUEZ once it is serviced.

On this basis, the overall development potential of the catchment of Three Mile Bush Road is an additional 680 to 690 lots prior to servicing of the RUEZ and some 1,700 after full servicing.

The Council has no known plans to reticulate this RUEZ area in the immediate future, but it is reasonable to expect the area to be reticulated in response to significant future subdivision and development pressure within it. The timeframe associated with this is unpredictable.

Three Mile Bush Road and its intersection with Kamo Road will very likely need upgrading prior to the time of ultimate development with council servicing of the RUEZ, but probably not without it. With the uncertainty associated with servicing, no additional measures are considered warranted in response to potential future development.

- i. An assessment of the traffic volumes on the wider transport network serving the development and any intersections that will be affected by the proposal. Include consideration of the existing peak-hour congestion near the site, level of service, turning volumes, and comparisons between peak and interpeak conditions. See the previous discussion (for h.) and Section 6.5. The proposal will not create congestion at the new intersection nor at others along Three Mile Bush Road at existing levels of traffic. Some congestion is already experienced at the Three Mile Bush Road/Kamo Road intersection, although not in traffic streams that the proposal will add any traffic to. That intersection will almost certainly need to be upgraded when the catchment of Three Mile Bush Road is fully developed. However, as discussed, the subdivision adds only a very small proportion to the traffic at that intersection. The generated traffic will be significantly dispersed and only a very small proportion of existing traffic once it reaches all locations remote from the site, especially with significantly more development in the catchment of Three Mile Bush Road. This development cannot be expected to mitigate that (existing) situation.
- j. A description of any proposed transport upgrades or changes within the vicinity of the proposed development such as known intersection or road upgrades, cycle infrastructure, parking restrictions or public transport upgrades or changes. If the proposed development is to be staged this description shall consider how the proposal will correspond with planned transport upgrades. The only known future upgrade is a possible shared walking and cycling path along part of Three Mile Bush Road that will connect to and cross Kamo Road. This is expected to create only a relatively small, but not insignificant, reduction in traffic generation from the site, but is also not expected for at least 10 years.
- k. An assessment of the proposal's consistency with relevant strategic documents including the Blue/Green Network Strategy for Whangārei City, the Walking and Cycling Strategy and the Whangārei Transport Strategy.

The Blue/Green Network Strategy for Whangārei City provides a vision and action plan for planning around waterways (the “blue”) and “green” spaces, combining elements of recreation, amenity, infrastructure and natural features to enhance a sense of place and wellbeing. The proposals will contribute to at least some of the key tenets of the blue/green strategy with its walkway connections to important destinations including Hurupaki school, local playgrounds and recreational reserves, and with the careful landscape design.

The proposal will be consistent with the Walking and Cycling Strategy with its safe connections to the footpath on Three Mile Bush Road and existing walkways, via The James subdivision, that link to important destinations within easy walking distance, including Hurupaki school, a bus stop outside #63 Three Mile Bush Road, a general store on Crawford Crescent, Onoke scenic reserve and a park and playground at nearby Tuhangi Street. The facilities will provide direct links to a future shared path between Kamo Road and Dip Road.

The Whangārei Transport Strategy (2019) covers the Whangārei urban area and is intended to address three problems: 1) Excessive concentration of traffic on State highways; 2) Severance created by those roads (with a particular issue being difficulties in crossing them on either foot or on bikes); and 3) a high or medium-high overall risk profile on Whangārei's main road routes.

The proposal will have some effect on the concentration of traffic on State highways. The nearest connection is southeast of the site in Whau Valley at a major signalized intersection that was upgraded relatively recently. The other connection is to SH1N at Great North Road, Springs Flat. It is several kilometres from the site, not in the dominant direction of travel and the generated traffic will be well dispersed by the time it reaches that location. The proposal is not inconsistent with the other problems the transport strategy attempts to address. In particular, the pedestrian crossing facility (refuge) proposed on Three Mile Bush Road and the other pedestrian linkages. In terms of general safety, both Three Mile Bush Road and Kamo Road are considered to be a suitable standard for the traffic they will carry with the subdivision at full development as discussed in section 6.

1. An assessment of the overall suitability of the site to accommodate the proposed activity and its transportation effects in a manner that is consistent with relevant District and Regional transport policies and objectives.

The Transport Chapter sets out the policy direction for the establishment, maintenance and use of the transport network. The chapter states that the future growth expectation for Whangārei is consolidated urban development. Its objectives and policies generally seek to integrate land use and transport planning to ensure that land use activities, development and subdivision maintain the safety and efficiency of the transport network. The proposal will give effect to the relevant objectives and policies as detailed in the analysis that follows.

Objective TRA-O1 Transport Network

Provide and maintain a safe, efficient, accessible and sustainable transport network while avoiding, remedying or mitigating adverse effects on the environment, adjoining land users and the surrounding amenity and character.

The proposed subdivision will be accessed by way of a new public road and intersection with Three Mile Bush Road, all of which has been designed to ensure safe and efficient access. The proposed road has been designed to minimise impacts on the amenity of existing residents through careful landscape and urban design including street trees.

The proposal includes pedestrian links and access to the adjacent residential development (The James) and other key destinations including Hurupaki School and the recreational reserve on Hurupaki volcanic cone.

Objective TRA-O2 Integrate Transport and Land Use Planning

Integrate land use and transport planning to ensure that land use activities, development and subdivision maintain the safety and efficiency of the transport network.

The proposal has been designed to establish an integrated development, to provide a safe, efficient, accessible, sustainable and integrated transport network including suitable vehicle access to the proposed residential allotments, onsite walkability and connectivity to adjoining residential developments and the open space network. Accessibility and safety of the community have been taken into account within the proposed development, the proposed intersection with Three Mile Bush Road and a safe connection to the footpath along its southern side. This report is an integrated traffic assessment of the proposal. It includes an assessment of the transport effects of the proposal on the transport network including the wider network and concludes that those effects are adequately mitigated by the transport-related measures proposed.

Objective TRA-O3 Active and Public Transport

Encourage and facilitate active transport and public transportation.

Active transport is promoted through the creation of new pedestrian linkages to the wider pedestrian network, including the safe linkage to the footpath along the southern side of Three Mile Bush Road, proposed extensive areas of open space and walking tracks including one to the existing reserve on Hurupaki mountain. The site is within easy walking distance of the nearest public bus stop and there is a continuous footpath for the entire distance to it.

Objective TRA-O4 Safety and Efficiency

Provide suitable and sufficient vehicle crossings, access, parking, loading and manoeuvring areas that minimise adverse effects on the safe, effective and efficient functioning of the transport network.

The proposed new intersection and internal roads are suitable for the level of traffic they will be subject to. In particular, they have ample capacity and will ensure safe entry and egress to/from the site.

Three shared private accesses are proposed as part of the residential subdivision, each has been designed to ensure safe and efficient access to the proposed residential allotments.

Vehicle crossings to each allotment have been carefully considered, and where appropriate location has been specified to ensure safe and effective access to the allotments while ensuring the new road, parking bays, lighting and street trees are unimpeded.

The on-street parking is in bays outside the live lanes, so will not impede the flow of traffic and provides for safe entry and egress.

Parking at the café, including the associated manoeuvring, meets the dimensional specifications of the district plan.

Objective TRA-O5 Urban Design

Design and locate transport infrastructure in a manner that is consistent with the amenity and urban design outcomes anticipated for the zone.

The urban design and amenity of the proposed road has been a key consideration for the proposal. The subdivision has been comprehensively designed and a landscape master plan is included with the application. Amenity within the road reserve has been considered through special paving treatments, traffic calming, street trees and carriageway widths that ensure the moderation of vehicle speeds.

Objective TRA-O6 Future Growth

Ensure that future growth can be supported by appropriate transport infrastructure.

The new roads and intersections will not be subject to significant, if any, future growth in traffic because of the intensity of the development and the zonings applicable to the site. Some of the intersections that the proposal will increase traffic on are already experiencing some congestion. Those are considered sufficiently isolated from the site, and the generated traffic such a small addition to the traffic through them, that the standard development contribution framework is considered the appropriate means of addressing any effects on them. This also applies to future growth external to this site.

Policy TRA-P1 Design, Construction and Maintenance

To design, construct and maintain roads, cycleways, walkways, public transport infrastructure, car parks and pedestrian access in a manner that:

1. Provides a safe and efficient transport network.
2. Enables the efficient provision of network utility infrastructure while providing for suitable streetscape amenity including lighting and landscaping.
3. Has regard to the future capacity and growth of the transport network.
4. Is multi-modal and provides for the needs of all users, as appropriate for the surrounding environment and the function of the road within the transport network hierarchy.
5. Avoids no exit roads where through roads and connected networks can be designed, particularly in commercial and industrial areas.
6. Provides pedestrian and cyclist access to connect roads and public spaces where they would offer a shorter route.
7. Ensures access to multiple allotments is constructed to an acceptable standard and vested as a public road where appropriate.
8. Appropriately manages stormwater to ensure the risk of flooding is not increased and water quality is maintained.

The proposal is compatible with sub-policies 1, 3, and 4 for the reasons already given in multiple locations in this report.

The proposed road has been designed to provide suitable and sufficient accommodation of network utility and infrastructure services, parking bays, street trees and lighting within the road reserve.

The proposed road will not result in a through-road due to the change in site contour and timing of adjoining development.

Pedestrian connectivity has been provided to other locations as already described. The proposal will not compromise the use of the road network by cyclists in any way.

The shared access via ROW H, which leads to ten lots, is not proposed to be a public road, but is concluded to be of a suitable standard given the location and the size of the lots it leads to.

It is proposed that stormwater be managed through carefully designed onsite stormwater ponds.

Policy TRA-P2 Roads

Allow new public roads or major roading upgrades to public roads where the location and design of the road:

1. Provides for the needs of all users, as appropriate for the surrounding environment and the function of the road within the transport network hierarchy.
2. Minimises adverse effects on surrounding sensitive activities, including severance effects and streetscape amenity.
3. Maintains or enhances the safety and efficiency of the transport network.
4. Does not compromise, and where possible provides, connections to surrounding areas, particularly for buses, pedestrians, and cyclists.
5. Provides sufficient area for landscaping and tree planting in appropriate areas while balancing the need to maintain safety and provide underground services and footpaths.
6. Contributes to positive urban design outcomes within the Urban Area

The proposal achieves sub-policy 1 with the internal road design and associated traffic calming as already described, on-street parking, the turning bay and pedestrian refuge on Three Mile Bush Road and the pedestrian linkages to key locations including Hurupaki School and mountain. This also achieves part of sub-policy 4.

The proposal minimises adverse effects on surrounding sensitive activities through the careful landscape design and stormwater management. This also meets or exceeds the intent of sub-policy 6. It minimises severance with the pedestrian refuge on Three Mile Bush Road.

The café is surrounded by residential lots created by the subdivision and well clear – more than 100 metres, of all existing residences.

With the turning bay and pedestrian refuge on Three Mile Bush Road, the proposal is considered to enhance the safety and efficiency of the transport network despite the traffic it will generate.

The proposal includes specific areas for tree planting that are designed to be consistent with the safety of the roads and underground services.

Policy TRA-P3 Transport Network Capacity

To manage the scale and design of subdivision and development by:

1. Ensuring that there is sufficient capacity within the transport network to cater for the proposal.
2. Requiring subdividers and developers to meet the costs of any upgrades and/or extensions to the transport network which are directly attributed to measurable impacts of the subdivision or development.

Some of the intersections that the proposal will increase traffic on are already experiencing some congestion. Those are considered sufficiently isolated from the site, and the generated traffic such a small addition to the traffic through them, that the standard development contribution framework is considered the appropriate means of addressing any effects on them.

The applicant will fund the proposed turning bay and pedestrian refuge on Three Mile Bush Rd.

Policy TRA-P4 Integrated Transport Assessments

To avoid remedy or mitigate adverse effects on the adjacent and wider transport network by requiring Integrated Transport Assessments for large scale developments and subdivisions.

This report is an integrated traffic assessment of the proposal and has been prepared in accordance with the accepted principles and content of such assessments.

Policy TRA-P5 Active Transport

To promote active transport by facilitating cycle and pedestrian connectivity within new subdivisions and developments and, where appropriate, to existing developments, reserves and other public spaces.

The proposal achieves this policy with the pedestrian refuge on Three Mile Bush Road and pedestrian linkages to key locations into Hurupaki School and mountain, plus traffic calming, footpaths and pedestrian crossing facilities on the internal roads (including relatively narrow live carriageway lanes that have the dual benefit of speed moderation and minimisation of exposure of people crossing the roads). The proposal will not reduce the safety or level of service of the existing road network for cyclists.

Policy TRA-P6 Dust Nuisance

To avoid dust nuisances in the Urban Area and improve amenity and accessibility by implementing formation standards for access and parking whilst managing stormwater.

Potential dust nuisance during construction will be managed by way of conditions of consent and the onsite construction management plan. The proposed new road, shared private accesses, parking bays and vehicle crossings will be constructed in all-weather surfaces to avoid ongoing dust nuisance.

Policy TRA-P7 Access and Intersections

To ensure that access and intersections are designed and located so that:

1. Good visibility is provided.
2. Vehicle manoeuvres and public and active transport modes are appropriately accommodated.
3. They are sufficiently separated so as not to adversely affect the free flow of traffic.

The sight distances in relation to the new intersection on Three Mile Bush Road are at least adequate for the reasons given in section 6.1. The intersection has been designed to accommodate the turning path of a medium rigid truck. The lot layout ensures that all new driveway crossings achieve the specifications in the Whangarei district plan for separation from each other and the new road intersections.

Policy TRA-P8 Vehicle Crossings and Access

To require vehicle crossings and associated access to be designed and located to ensure safe and efficient movement to and from sites for vehicles, pedestrians and cyclists by managing:

1. Separation distances between vehicle crossings.
2. Separation distances from intersections, railway crossings and pedestrian crossing facilities.
3. Vehicle crossing sight distances.
4. The number of vehicle crossings per site.
5. The design, formation and construction standards of crossings and access.

The lot layout ensures that all new driveway crossings achieve the specifications in the Whangarei district plan for separation from each other and the new road intersections.

Driveway crossing locations are drawn on the subdivision plan for lots in which it is necessary that this be specified. For other lots, there is more than one possible location for a complying crossing and its location is best left to the ultimate owner of those lots. In this regard, the numbers of crossings and their design and formation can safely be left to the building consent stage of development.

Policy TRA-P9 Car Parking

To specify minimum on-site car parking space requirements while allowing for reduced on-site parking spaces where appropriate based on:

1. Surrounding transport infrastructure.
2. Proximity to the City Centre, Local Centre or Neighbourhood Centre Zones.
3. The provision of additional amenities on-site.
4. The ability to mitigate car parking spillover effects.

The proposed allotments are all of sufficient size to accommodate onsite car parking as necessary to support the future development including the residential component and the café. The proposed new road will accommodate 36 on-street parking bays to service the development. This will cater for any and all spillover from individual lots including the café, noting that previous surveys of Totara Parklands, which also has a café, never found more than one car parked on the street for each five lots.

In any event, that the district plan no longer requires minimum numbers of parking spaces for any activity. Despite this, all parking demand will still be catered for more than adequately.

Policy TRA-P10 Parking and Loading

To require parking and loading areas and access to be designed and located to ensure safe movement on-site and safe ingress and egress of vehicles, pedestrians and cyclists by managing:

1. Parking and loading space dimensions and gradient.
2. The location and identification of car parking and loading spaces.
3. Manoeuvring space within the site.
4. The formation and construction standards of parking areas.
5. The design and layout of parking areas.

The proposed residential allotments are all of sufficient size to accommodate onsite manoeuvring for car parking as necessary to support the future development. The café carpark meets or exceeds the dimensional specifications in Appendix 1F of the Whangarei district plan.

No loading space is required for the café, which is less than 300 sq.m GFA¹⁹.

Policy TRA-P11 [Electric vehicle] charge stations.

Not applicable to residential developments or the café with a relatively small parking area²⁰.

¹⁹ Whangarei district plan Table TRA 3.

²⁰ Whangarei district plan rule TRA R13.

Policy TRA-P12 Landscaping

To require landscape planting where uncovered on-site car parking is provided to improve visual amenity, navigability and stormwater management.

There are no longer specific rules in the district plan for landscape planting of parking areas. The landscape effects of the cafe parking area and on-street parking have been adequately addressed in the landscape assessment for the project.

Policy TRA-P13 Indicative roads and strategic road protection areas

To identify indicative roads and strategic road protection areas based on long term growth projections, and to require development and subdivision to have regard to effects on any indicative road or strategic road protection area.

Not applicable to this site or proposal.

Policy TRA-P14 Transport network hierarchy

To identify and apply a transport network hierarchy to ensure that the functions of transport network assets are recognised and protected in the management of land use and subdivision.

Three Mile Bush Road has a status of primary collector road. With the traffic management proposed, the proposal will not compromise the function of the road nor its place in the road hierarchy.

Policy TRA-P15 Rail infrastructure

Not applicable to this locality or proposal.

7.3 TRA-R15 Matters of discretion

The matters listed in the *Whangarei district plan* are reproduced in bold and discussion then follows.

1. Effects on the sustainability, safety, efficiency, effectiveness and accessibility of the affected transport network, including cumulative effects from incremental changes to the activity on the site or sites.

This is assessed in section 6.5, which finds that the effects of the proposal on the transport network will be less than minor. With the intensity of the subdivision and the zoning of the lane, there is little or no scope for future incremental changes such as further subdivision.

2. Required improvements, alternations or extensions to the affected transport network to mitigate adverse effects (including at level crossings).

The key proposed measures are the central turning bay at the new intersection and the pedestrian refuge on Three Mile Bush Road. There are no level crossings in the vicinity of the site.

3. The need for pedestrian and cyclist connections to nearby destinations.

Pedestrian connections are proposed – to Hurupaki scenic reserve and school and the existing footpath on Three Mile Bush Road. No particular facilities are considered necessary for cyclists at this stage. With the urban speed limit, the road network in which vicinity is relatively safe for cyclists.

4. Adverse effects on streetscape and amenity.

These effects are being avoided or mitigated through careful and sensitive landscape design including the provision of street trees, protected view shafts and strong walking linkages.

5. The location, design, scale and intensity of the proposed activity in relation to its effect on the affected transport network.

The assessments in this report show that the transport network downstream of the proposal will increase traffic on has more than adequate surplus capacity for the generated traffic.

6. Demonstrated characteristics of the activity or proposal which result in low traffic generation relative to the size of scale of the activity.

The proposed pedestrian linkages and proximity to public bus services will minimise the generation of motor traffic.

7. Recommendations and proposed mitigation measures of the Integrated Transport Assessment....

See section 2

7.4 TRA-REQ3 information and assessment

This requirement arises from section TRA-R17, which is triggered with the construction of any new public road and is as follows:

Any application pursuant to TRA-R17 shall include a detailed assessment including the following:

- a. The details required under TRA-REQ2.
- b. A roading layout plan, including:
 - i. The provision of landscaping and street trees.
 - ii. The provision of on-street parking.
 - iii. The provision of street lighting and amenities (e.g. benches, bus shelters, etc.).
 - iv. Geometric design.
 - v. Drainage design.
 - vi. Road marking and signage. Transport (TRA) Whangarei District Plan March 2019 Page 19
 - vii. Traffic calming devices.
 - viii. Utility service locations.
 - ix. Sight distance plans.
 - x. Clear distinction between public and private assets.
- c. Consideration of the sufficiency of space within the legal road reserve for proposed and potential future street trees, landscaping and/or underground and overhead services and structures.

Most of this information is given in engineering plans provided by others and included with the application. Figure 2 shows the treatment proposed at the new intersection including the turning bay and pedestrian refuge plus the most restricted sightline. See also Photo 2.

- d. An assessment of traffic volumes and vehicle operating speeds.

Refer to section 5.1 for traffic volumes and 6.1 regarding operating speeds.

- e. An assessment of how the road design is compatible with the character and amenity of the surrounding environment taking into account urban design and Crime Prevention Through Environmental Design principles.

The proposal will be addressing CPTED matters in the road spaces and immediately related pedestrian routes by:

- Ensuring good sightlines and visibility;
- Encouraging passive surveillance from adjacent homes by ensuring that houses address the street and neighbouring open space;
- Promoting heightened community use of public areas, including road corridors, by developing them as appealing places to move through and occupy. Encouragement of moderate speeds of motor vehicles is another key to this;
- Designing the project in a way that fosters regular engagement between people and a growing sense of neighbourhood and community in which people know and regularly engage with each other;
- Providing suitable levels of lighting to streets; and
- Drawing in established character themes of the site and its setting, including stone walls and indigenous vegetation, into the new, residential identity of the neighbourhood.

7.5 TRA-R16 and R17 Matters of discretion

These provisions are triggered because it is proposed that the internal roads be vested in the council (which triggers R16 – new roads) and alterations are proposed on Three Mile Bush Road at the location of the new intersection (R17- alterations to an existing road).

The matters are reproduced in bold and discussion then follows.

1. The ... design ... of the road....

The design of the internal roads is of a high standard, will ensure the safe passage of all vehicles while moderating speeds at safe levels. They also cater well for pedestrians by including footpaths and links to other locations and minimising their exposure to live lanes while crossing the roads.

The central turning bay on Three Mile Bush Road will mostly address the minor sight distance restriction east of the new intersection and provide full separation between vehicles turning right into the site and westbound vehicles that are not turning. The intersection has ample capacity for the proposal and, with the turning bay, will be fit for its intended purpose.

The pedestrian refuge on Three Mile Bush Road will ensure safe linkage to the footpath on the southern side of that road.

2. Effects on the sustainability, safety, efficiency, effectiveness and accessibility of the transport network.

This is assessed in section 6.5, which finds that the effects of the proposal on the transport network will be less than minor.

3. Streetscape, urban design and amenity effects of the transport infrastructure.

These effects are being avoided or mitigated through careful and sensitive landscape design including the provision of street trees, protected view shafts and strong walking linkages.

4. Provision and encouragement of active and public modes of transport.

The new roads will cater well for pedestrians and encourage walking with the inclusion of footpaths and links to other locations including the Hurupaki scenic reserve and school grounds. The relatively narrow live lanes minimise the exposure of people when they are crossing the roads.

5. Integration with surrounding land uses and transport infrastructure.

Active walking links are proposed to Hurupaki scenic reserve and school grounds plus the footpath on the southern side of Three Mile Bush Road.

The proposed turning bay will ensure that additional traffic generated by future development west of the site will not be impeded, or subject to an unacceptable hazard, by vehicles turning right into the site.

6. Recommendations and proposed mitigation measures of the Integrated Transport Assessment....

This is given in Section 2. Key measures include the active pedestrian linkages, relatively narrow internal carriageways and other traffic calming measures, internal on-street parking and the central turning bay on Three Mile Bush Road.