

65 and 73 Ratanui Road, Paraparaumu Private Plan Change Integrated Transport Assessment

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Prepared by:
Stantec NZ

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310205437



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65 and 73 Ratanui Road Private Plan Change Integrated Transport Assessment

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Prepared by 

Sayuni Jayasinghe

Prepared by 

Andrew Leckie

Reviewed and approved by 

Andrew Metherell



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1 Introduction

Welhom Developments Limited is requesting a private plan change to the Operative Kāpiti Coast District Plan 2021 (the District Plan) to re-zone a block of rural lifestyle land on the north-eastern edge of Paraparaumu for general residential use (the Plan Change). The Plan Change relates to an approximately 12.7 ha block, made up of 73 Ratanui Road and part of 65 Ratanui Road (the Site).

This report provides an assessment of transportation matters associated with the Plan Change, including integration of the Site with the adjacent transport network and the future safety and performance of the surrounding road network. To provide a detailed assessment of transportation matters in relation to the Site, this report considers the following:

- Existing Transport Network;
- Existing Traffic Volumes;
- Existing Road Safety;
- Future Environment;
- Proposed Plan Change;
- Traffic Generation and Distribution;
- Impacts on the Road Network;
- Non-Car Travel; and
- District Plan Provisions.

By way of summary, residential development of the Site enabled by the proposed rezoning will generate additional traffic on the transport network. The scale of traffic generation will not present capacity issues for Ratanui Road and its connecting network, such that this assessment is focused on access between the Site and Ratanui Road, and accessibility for a range of travel modes. This approach has generally been agreed with Kāpiti Coast District Council (Council) through preliminary discussions. Additional traffic can be accommodated safely and efficiently with some improvements to the Ratanui Road frontage, including through right turning facilities at a new intersection. With a Structure Plan addressing transport connectivity, the Site is able to integrate with existing development in the area to achieve a well-connected transport network.

2 Site Location

2.1 Location in Road Network

Figure 2-1 shows the location of the Site in the context of Kāpiti Coast and the District Plan road hierarchy. The road hierarchy within the vicinity of the site includes a mix of Strategic Arterial, Major Community Connector Route, Local Community Connector Route, and local roads. Major Community Connector routes are described as:

- Roads joining significant centres of population and / or sometimes providing for national and inter-regional traffic flow. These may include strategic arterials.
- Connects suburbs and / or major transport nodes.
- May include access to regionally significant destinations.
- Major entry point from highway to the Coast.



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2 Site Location

- Can be higher speed than local / centres streets but likely to be 70km/h or less – case by case consideration.
- Some roads will have major traffic volumes.
- On-street parking may be discouraged in some areas.

The District Plan describes Local Community Connector routes as

- Larger urban roads linking local roads to the connector network.
- In rural areas, includes minor roads linking smaller rural communities to the connector network.
- Provides main access routes through suburbs.
- Connect local centres.
- Traffic movements mainly locally generated.
- Significant walkways / cycleways between local centres, schools and employment areas.
- May be some routes with relatively high traffic volumes.
- Expect moderate speed.

The Site is located on Ratanui Road, a 'Local Community Connector' route, on the north-eastern edge of Paraparaumu and close to Paraparaumu Beach. At its western end, Ratanui Road connects to Mazengarb Road, a 'Major Community Connector' route, which provides routes to the Paraparaumu town centre to the south and Paraparaumu Beach to the north. To the east of the Site, Ratanui Road continues as Otaihanga Road, connecting to Old State Highway 1 (Old SH1) and onto Waikanae.





Figure 2-1: Site Location (Yellow Star) in Context of Kāpiti Coast and the District Plan Road Hierarchy

2.2 Location in Local Context

The location of the Site in the local area context can be seen in Figure 2-2. There is a mix of residential and rural-residential land uses along Ratanui Road. The 'About Kids' preschool which is located close to the Site on the opposite side of the road is highlighted in the figure.





Figure 2-2: Location of the Site in Local Context (Aerial Image Source: KDCDC LocalMaps)

2.3 District Plan Zoning

The location of the Site in the context of the District Plan zoning can be seen in Figure 2-3. The site is located on Rural Lifestyle zoned land, with the surrounding land being a mix of Rural Lifestyle and General Residential Zones.



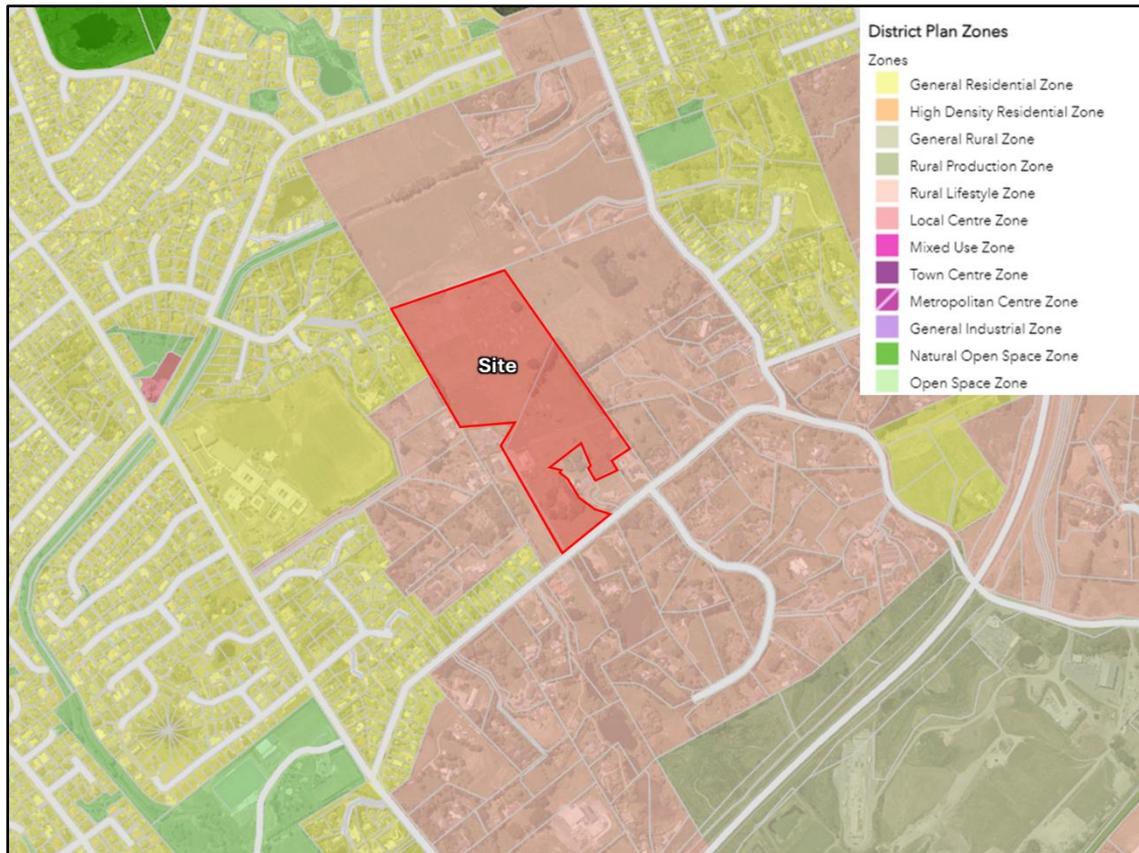


Figure 2-3: Land Zoning – Operative Kāpiti Coast District Plan 2021

3 Existing Transport Network

3.1 Ratanui Road

As outlined above, Ratanui Road is classified as a Local Community Connector route, as defined by the road hierarchy in the District Plan.

At its western end, Ratanui Road intersects with Mazengarb Road (Figure 3-1). This intersection was upgraded from a standard priority T-intersection form to a roundabout in late 2019, affording good safety and operating improvements. At its eastern end, Ratanui Road meets Otaihanga Road at a priority T-intersection (Figure 3-2). The priority route is between Ratanui Road to the west and Otaihanga Road to the east.



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3 Existing Transport Network



Figure 3-1: Mazengarb Road / Ratanui Road Intersection (Aerial Image Source: Emap)



Figure 3-2: Otaihanga Road / Ratanui Road Intersection (Aerial Image Source: Emap)



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3 Existing Transport Network

Ratanui Road has one traffic lane in each direction, each measuring around 3.25m in width. From Mazengarb Road to just west of the Site, Ratanui Road is formed with kerb and channel, has kerbside shoulders of approximately 1m in width, and has a footpath on its southern side. It operates with a posted speed limit of 50km/h in this section, as seen in Figure 3-3.



Figure 3-3: Ratanui Road (Looking West, Site on the Right)

Eastwards across the frontage of the Site, the speed limit on Ratanui Road changes to 60km/h as seen in Figure 3-4, and the form of the road changes. Along this section, there is no kerb and channel, the roadside shoulders lessen, and the footpath becomes a gravel shared path on the northern side of the road.



Figure 3-4: Ratanui Road (Looking East, Site on the Left)



3.2 Public Transport

Figure 3-5 shows the nearest bus stops to the Site. The closest bus stops are on Mazengarb Road south of Ratanui Road, an approximate 700m walk from the Site.

The Metlink Route 262 bus service travels along Mazengarb Road providing a connection between Paraparaumu Beach and the Paraparaumu town centre. The service runs half hourly in each direction on weekdays, with more frequent buses during peak commuter times. Buses run hourly in each direction on weekends.

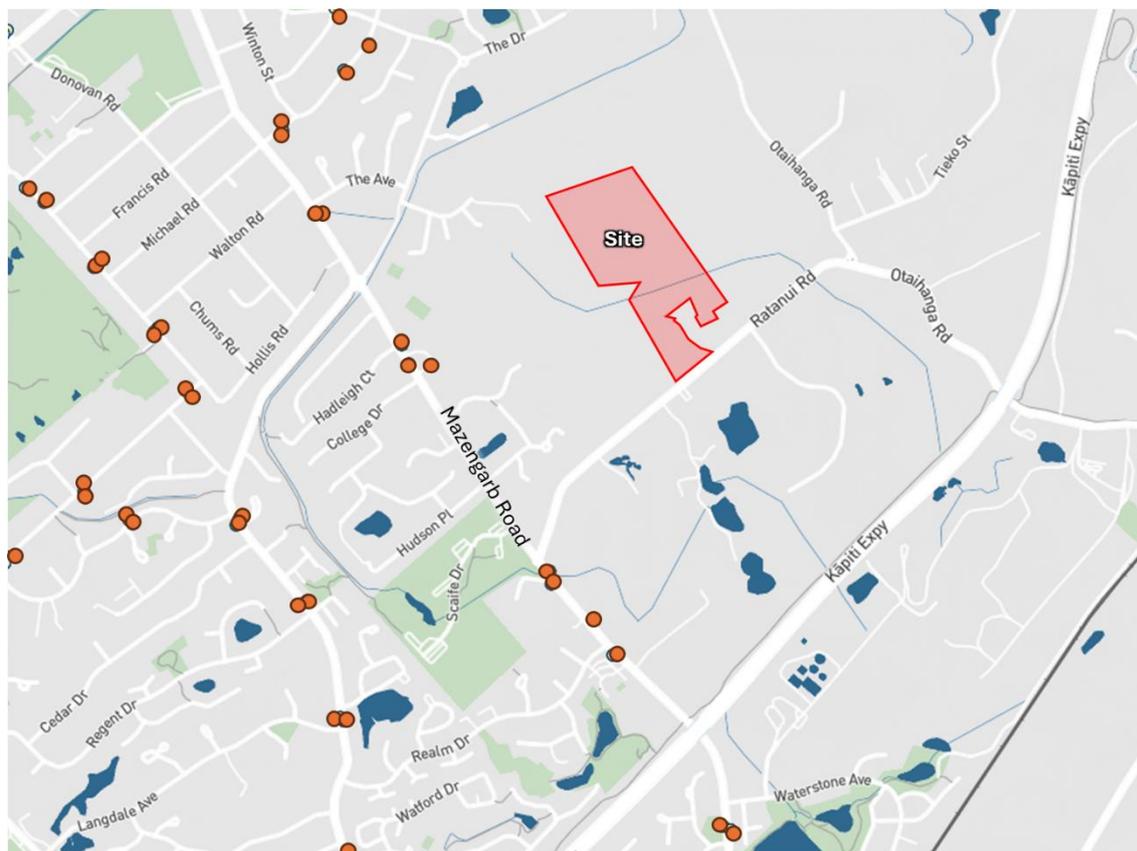


Figure 3-5: Bus Stops Near the Site (Metlink)

4 Existing Traffic Volumes

4.1 Daily Traffic Volumes

The Council carried out a traffic count on Ratanui Road, approximately 300m west of the Site, in November 2023. Ratanui Road carries weekday traffic volumes of between 6,000 and 7,000 vehicles per day (vpd). These are relatively high volumes compared to traffic volumes on most other Local Community Connector routes in Paraparaumu and Waikanae and it is apparent that the road has some wider-area traffic carrying function between Paraparaumu Beach and Waikanae. On balance, it is considered that Ratanui Road is functioning as a Local Community Connector, as defined in the



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4 Existing Traffic Volumes

District Plan (presented in Section 2.1 of this report), noting that the District Plan hierarchy was adopted recently in 2021.

The District Plan Table 7 'Transport Network Hierarchy' references NZS4404 which outlines typical maximum volumes for connector / collector roads are in the order of 8,000vpd. NZS4404 road classifications are more relevant for new greenfield roads, and it is noted that traffic volumes in the order of 10,000vpd are not uncommon for urban connector / collector roads.

Figure 4-1 summarises daily traffic volumes (sourced from the Mobile Road website) on the key roads in the Paraparaumu area. Mazengarb Road carries higher traffic volumes than Ratanui Road, as anticipated by its higher classification in the road hierarchy.

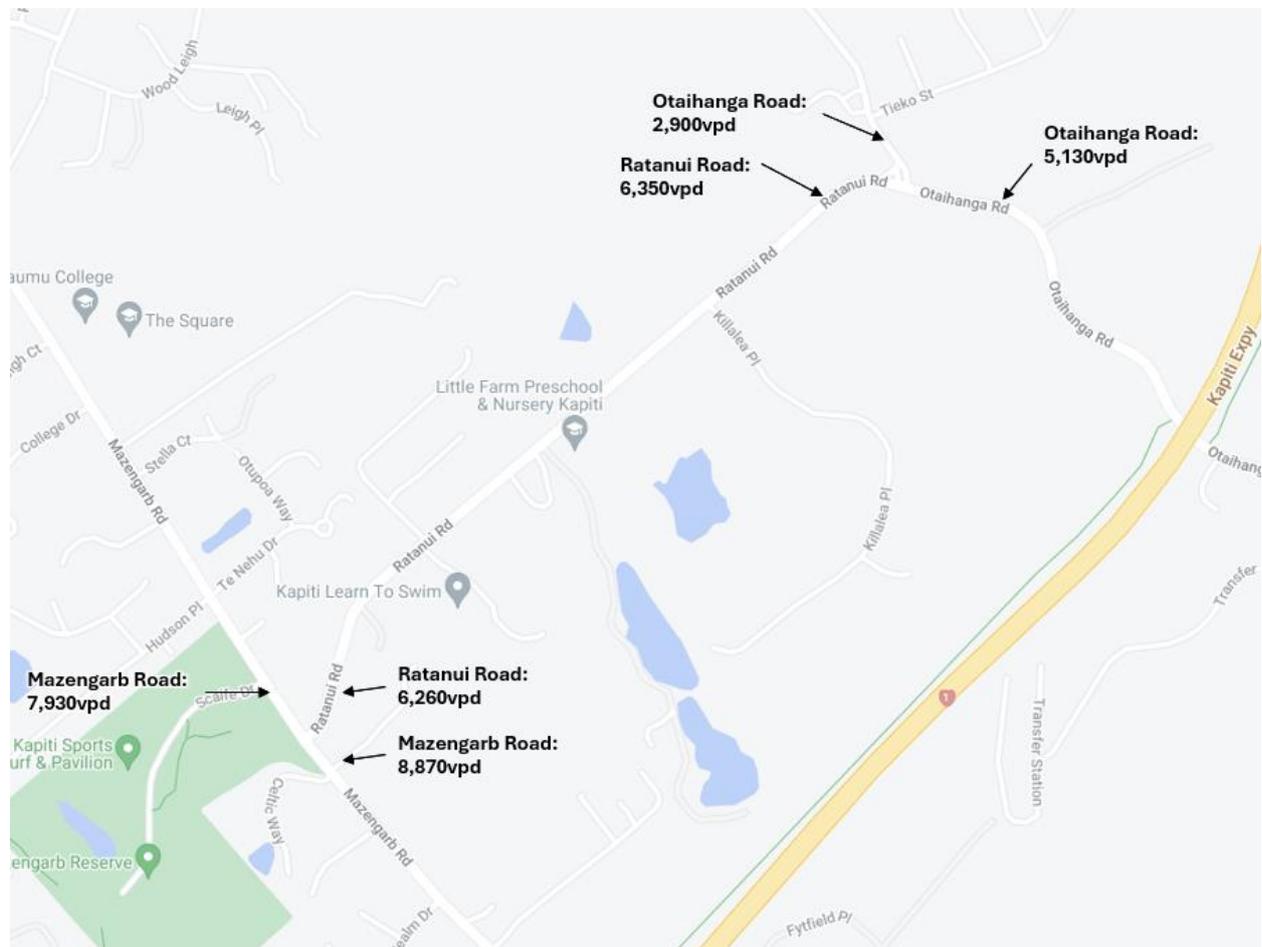


Figure 4-1: Daily Traffic Volumes (Mobile Road)

4.2 Hourly Traffic Volumes

Figure 4-2 shows the average weekday hourly traffic volumes on Ratanui Road, by direction. There are both morning and late afternoon / evening peaks in traffic volumes, with two-way volumes up to 600-700 vehicles per hour (vph). Traffic volumes are relatively balanced by direction, although there is a small level of tidality with westbound volumes towards Paraparaumu higher in the morning, and eastbound volumes away from Paraparaumu higher in the evening.



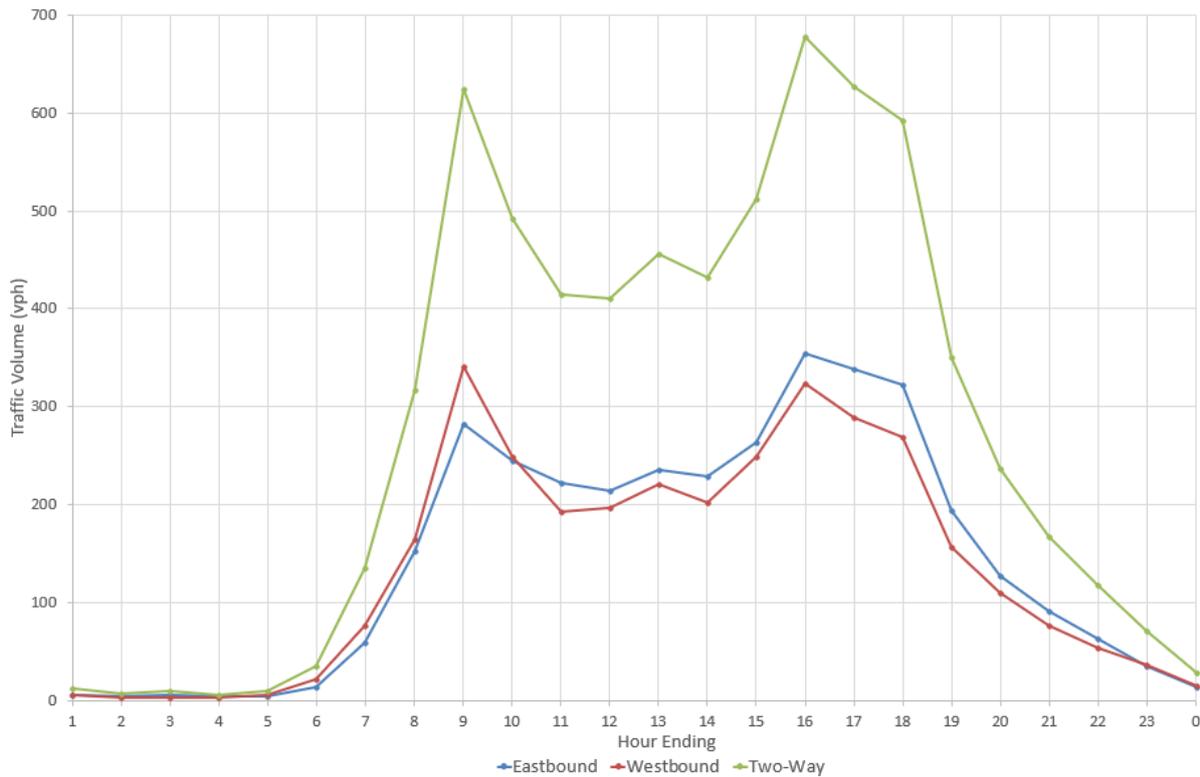


Figure 4-2: Weekday Average Hourly Traffic Volumes on Ratanui Road, 16-23 November 2023

5 Existing Road Safety

NZTA Mega Maps identifies that collective safety risk, personal safety risk and infrastructure risk¹ vary from Low to Medium along Ratanui Road. There are no Medium-High or High risk sections of Ratanui Road.

The NZTA Waka Kotahi Crash Analysis System has been used to review crash records in the vicinity of the Site for the full five-year period between 2019 and 2023. Three crashes reported in 2024, as of 14 October 2024, are also included in the analysis.

The crash search area, pictured in Figure 5-1 below, includes the entire length of Ratanui Road between and including the intersections of Mazengarb Road and Otaihangā Road.

¹ Collective safety risk is risk density measured as the number of fatal and serious casualties over a distance. Personal safety risk is risk to the individual of a fatal or serious casualty measured as casualties per million vehicle kilometres travelled. Infrastructure risk rating is a proactive measure of risk that aligns with personal risk but does not rely on crash history.



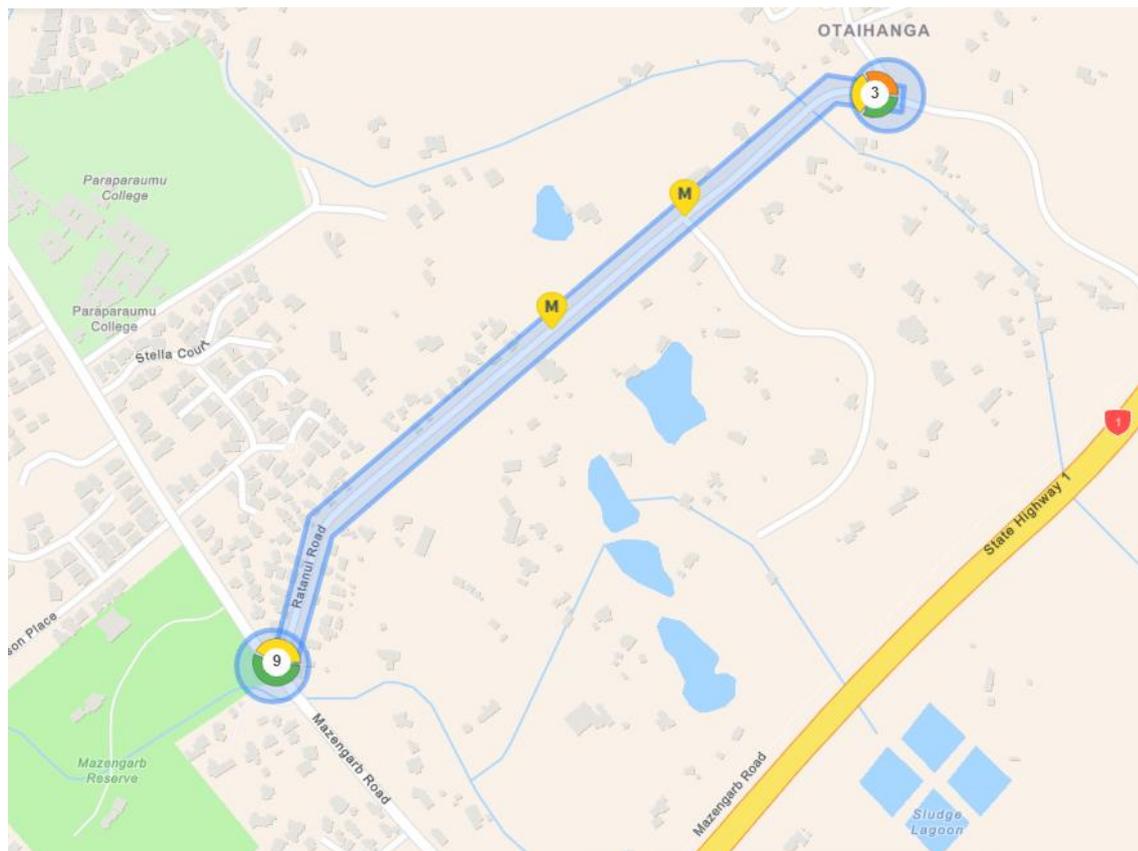


Figure 5-1: Crash Search Area and Results, 2019 to October 2024

A total of 14 crashes have been recorded within the crash search area since 2019. Eight of these occurred at the Mazengarb Road / Ratanui Road intersection, three occurred at the Otaihanga Road / Ratanui Road intersection, and three occurred on Ratanui Road between these two intersections. One of the crashes on Ratanui Road occurred close to the Mazengarb Road intersection and as a result is grouped with the intersection crashes in the above figure.

Of the eight crashes at the Mazengarb Road / Ratanui Road intersection, three were minor-injury crashes and five were non-injury crashes. One of the minor-injury crashes involved a driver having a medical event leaving the road and hitting a pedestrian on the footpath. A second involved a cyclist with passenger crossing the southern leg of the intersection being hit by a vehicle turning left out of Ratanui Road. The third minor-injury crash was a single-vehicle, loss-of-control crash. The non-injury crashes predominantly involved two vehicles colliding at slow speed, typical of roundabout-type crashes.

The three crashes at the Otaihanga Road / Ratanui Road intersection, including one serious-injury crash and one minor-injury crash, were single-vehicle crashes involving either loss-of-control or running off the road. None of the crashes involved vehicles turning into or out of the minor leg (Otaihanga Road north of the intersection) colliding with through traffic.

There were two minor-injury crashes and one non-injury crash along Ratanui Road between the two intersections. One of the minor-injury crashes was an accessway-type crash when a vehicle turning right into the preschool was hit from the rear by a following vehicle that was travelling too close. The



other minor-injury crash was an unusual occurrence near the Killalea Place intersection. A driver stopped to clear a box from the road and mistakenly put their vehicle into reverse. The vehicle knocked the person over before hitting a light pole. The non-injury crash involved a driver hitting a parked vehicle at the western end of Ratanui Road.

To summarise, the crash records do not suggest any serious safety concerns with Ratanui Road and particularly its ability to accommodate additional access. Most of the crashes have been minor crashes (minor-injury or non-injury) at the Mazengarb Road / Ratanui Road roundabout, typical of crashes at urban roundabouts. Only one minor-injury crash on Ratanui Road, a rear-end crash at the preschool, was related to property access.

6 Future Environment

6.1 Kāpiti Coast Growth Strategy

The 'Te Tupu Pai – Growing Well' growth strategy is the Council's strategy for enabling sustainable growth and diverse, high-quality development in the Kāpiti Coast District over the next 30 years. The strategy is shown in Figure 6-1. The Site is located within a medium-priority greenfield growth area to the north-east of Paraparaumu.

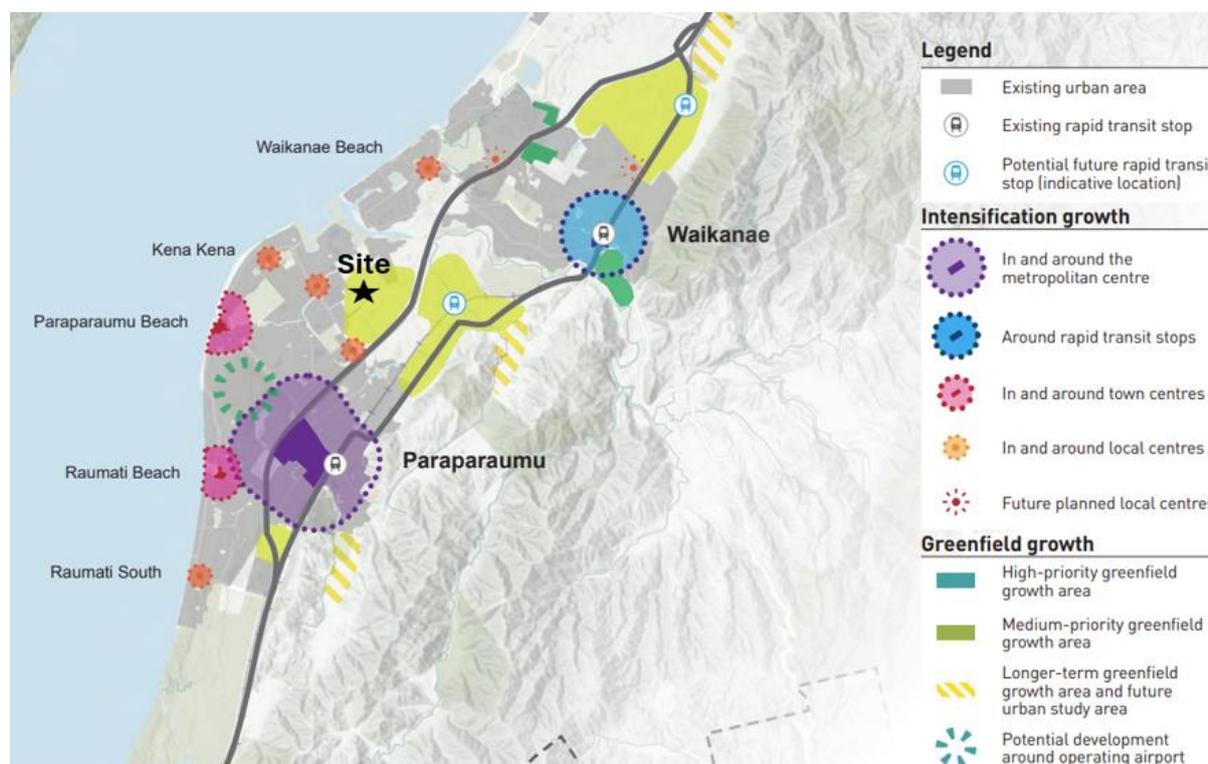


Figure 6-1: Kāpiti Coast Growth Strategy (Approximate Site Location Indicated by Black Star)



6.2 Long Term Plan

No transport-related projects relevant to the Site and surrounding area along Ratanui Road have been identified in the Council's 'Long-term Plan 2024-34'.

6.3 Speed Limits

Ratanui Road has a 50/60km/h speed limit where it is 50km/h from the Mazengarb Road intersection to the 'Little Farm' preschool, and then 60km/h from there onwards. No changes to these speed limit arrangements have been proposed through the Council's 'Speed Management Plan 2023-2033'. 50km/h and 60km/h speed limits are both typically considered to be urban and readily able to accommodate vehicle access. Speed limits are reviewed periodically and further development along Ratanui Road would be expected to help justify an extension of the 50km/h zone.

6.4 Otaihanga Development

The Council has advised that a subdivision consent application has been made for a 150-lot residential subdivision on Otaihanga Road, just west of State Highway 1 (SH1). Travel to the Paraparaumu town centre from this location (as well as Waikanae and further destinations to the north) will be more convenient via Old SH1 (rather than Ratanui Road). Ratanui Road will likely be the preferred route for travel towards those parts of Paraparaumu to the north of SH1, as well as possibly Wellington via the SH1 Kāpiti Road interchange. The increase in traffic volumes along Ratanui Road resulting from the Otaihanga development would be expected to be modest and not at a level that will noticeably change the operation of Otaihanga Road.

7 Proposed Plan Change

The Plan Change seeks to change the zoning of the Site from Rural Lifestyle to General Residential Zone, which would enable typical residential dwellings to be constructed on the Site. It is understood that the Site could realistically yield approximately 235 residential dwellings based on a range of lot sizes and allowing for some medium-density housing. A residential road network would service the internal layout of the Site.

Aside from the rezoning that is the key change proposed, specific provision is intended to be made to allow for the development of a retirement village on the Site. An indicative scale of a comprehensive care retirement village could include 260 independent living units and 90 care units. A village of this type is usually serviced by a main vehicle access as well as a secondary vehicle exit, and supporting resident pedestrian access.

These represent the two potential development scenarios assessed in this report.

A structure plan, shown in Figure 7-1, and accompanying text provisions are proposed to guide development of the Site. From a transport perspective, the key features of the proposed structure plan and accompanying text provisions are:



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7 Proposed Plan Change

- A new intersection / vehicle access location on Ratanui Road, approximately 85m east of the preschool entry and 150m west of Killalea Place; and
- A matter of discretion for Council for a residential development of the Site relating to connectivity to adjacent land.



Figure 7-1: Proposed Structure Plan

Connectivity to adjacent land for a residential development of the Site will be able to be considered and assessed at the subdivision consent stage. For a residential development, connectivity to the north and / or the east of the Site, for vehicles and active travel modes, may be desirable to allow possible future development to be integrated. Connectivity to the west of the Site may not be feasible given the existing residential parcels along the western boundary, as shown in Figure 7-2.



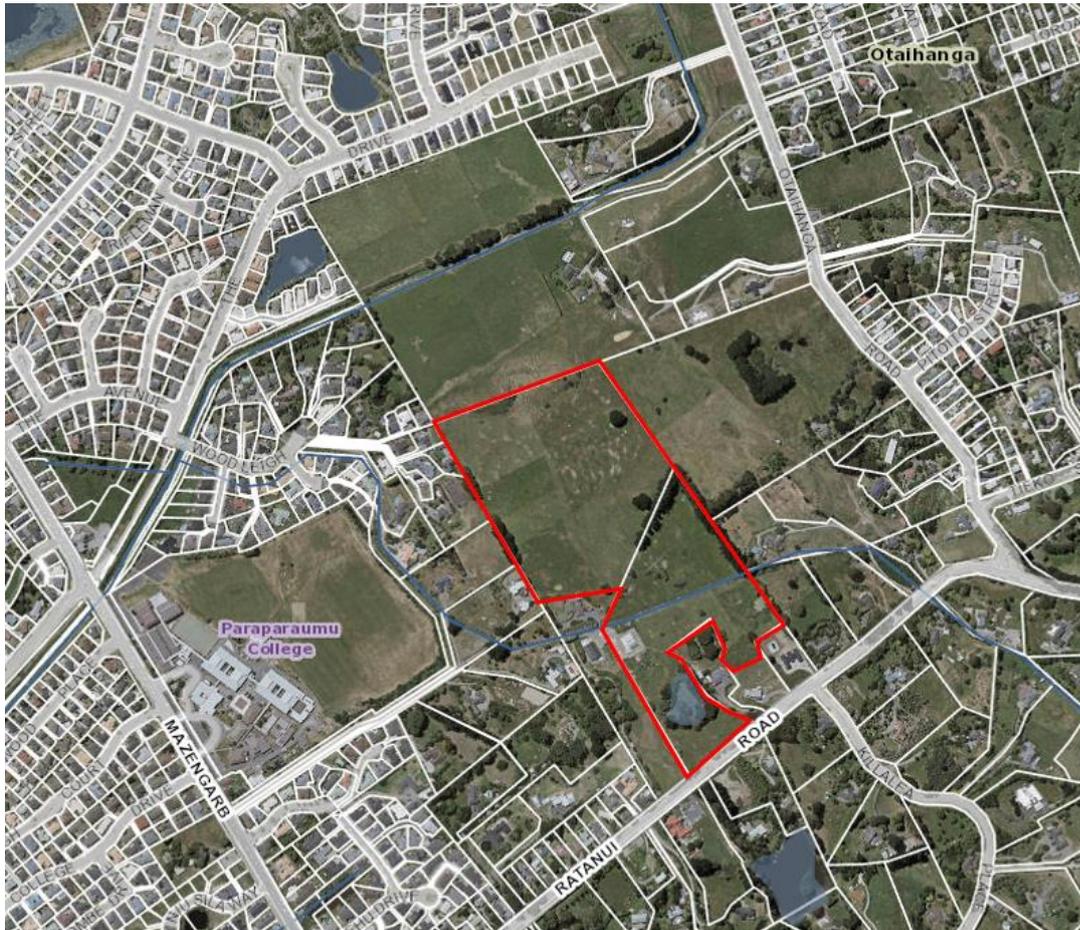


Figure 7-2: Surrounding Land Parcels (Aerial Image Source: EMap)

Connectivity to the adjacent land is not proposed as a matter of control for a retirement village, noting that comprehensive care retirement villages do not typically allow for through travel by external traffic. A retirement village will be considered a 'major traffic activity' under the District Plan and require a transport assessment at the resource consent stage, with Council having discretion over consistency with all District Plan transport policies. Connectivity for future retirement village residents to adjacent land, for example by way of a secondary vehicle access and / or a pedestrian access point(s), can be considered at this stage. For any future development north and east of the Site, vehicle access to Otaihanga Road will be feasible. A new intersection on Ratanui Road to the east of Killalea Place and suitably separated from the Otaihanga Road intersection may also be feasible.

8 Traffic Generation and Distribution

The analysis in this section is split into the two potential development scenarios for the Site, and traffic generation and distribution has been contemplated for both options. Scenario 1 considers traffic generation for standard residential development of the Site, and Scenario 2 considers traffic generation for the Site should it be developed as a comprehensive care retirement village.



8.1 Scenario 1: Indicative Standard Residential Traffic Generation

Traditionally, peak hour traffic generation rates between 0.8 – 1.0 vph per house have been adopted for assessment of standard residential development.

Recognising the location of the proposed rezoning on the northeastern edge of Paraparaumu, traffic generation surveys for the residential subdivision on Cashmere Oaks Drive on the northern edge of Masterton have been considered. The Cashmere Oaks residential subdivision is on the outskirts of Masterton, similar to the Site location relative to Paraparaumu. Those surveys were recently carried out for a transport assessment of a proposed rezoning by Welhom Developments Limited in that location. Those surveys recorded weekday peak hour traffic generation rates of 0.7vph (morning) and 0.8vph (evening) per house. However, the Cashmere Oaks subdivision comprises standard, stand-alone residential development, whereas some medium-density development (which is typically lower-traffic generating²) is allowed for in the estimated yield of 235 units that could reasonably be developed on this Site. Accordingly, the surveyed traffic generation rates are considered to be conservative for the purpose of this assessment.

The following inbound / outbound splits were recorded at Cashmere Oaks and have been adopted in this assessment:

- AM peak – 75% outbound and 25% inbound; and
- PM peak – 65% inbound and 35% outbound.

Based on existing passing traffic patterns and a likely preference for travel to and from Paraparaumu (rather than Waikanae), the following distribution has been assumed. For the purpose of assessment, all traffic is allocated to a single access road to Ratanui Road:

- Two-thirds of traffic to / from the west (Paraparaumu)
- One third of traffic to / from the east (Waikanae)

The following Table 8-1 summarises the possible peak hour traffic generation and distribution of 235 residential dwellings, based on the rates and distribution outlined above.

Table 8-1: Potential Traffic Generation / Distribution of 235-Dwelling Residential Development

Peak Period	Left In	Right In	Left Out	Right Out	Total
AM	27vph	14vph	41vph	82vph	164vph
PM	81vph	41vph	22vph	44vph	188vph

Based on a daily traffic generation rate of 7.5vpd per dwelling (10x average peak hour traffic generation), a 235-dwelling development could generate approximately 1,760vpd. This is a level of traffic consistent with a residential local road classification for a road connection to Ratanui Road.

² Stantec has surveyed medium density residential development in Petone and recorded peak hour traffic generation rates of 0.4 – 0.5vph per dwelling.



8.2 Scenario 2: Indicative Retirement Village Traffic Generation

Scenario 2 provides an indicative assessment for traffic generation should a comprehensive care retirement village be developed on the Site. This scenario assumes a village with 260 independent living units and 90 care units over the entire Site.

The most recent traffic surveys of a modern retirement village were carried out at the 5.2ha Summerset Wigram retirement village in Christchurch in 2018. The traffic generation rates derived from those traffic surveys that are applicable to Scenario 2 are outlined in Appendix A to this report.

As outlined in Appendix A, a retirement village occupying all the Site could generate approximately 1,020vpd. This is approximately 740vpd fewer than the 1,760vpd that could be generated by a 235-dwelling residential development determined in Scenario 1.

The following Table 8-2 shows the potential hourly traffic generation by direction based on the survey data.

Table 8-2: Potential Retirement Village Traffic Generation by Direction

Peak Period	In	Out	Total
AM	16vph	18vph	34vph
Village Peak	52vph	46vph	98vph
PM	47vph	42vph	89vph

The development of a comprehensive care retirement village on the Site would generate approximately 130 fewer vph during the morning peak and 100 fewer vph during the evening peak compared to a standard residential development on the Site. Peak hour traffic generation is also typically more balanced by direction than that of a residential development.

As for Scenario 1, it is assumed that two thirds of traffic would turn to and from the west and the remaining one third would turn to and from the east.

9 Ratanui Road Vehicle Access Assessment

9.1 Feasibility Concept Design

The Site has an approximately 120m road frontage to Ratanui Road, which is expected to accommodate a single road or vehicle access (for a retirement village) accessing the Site. The proposed structure plan shows an intersection / vehicle access location approximately 85m east of the preschool entry and 150m west of Killalea Place. This location has been identified based on a range of matters including the feasible location of a suitable intersection formation, taking into consideration existing nearby land uses and access points.



A feasibility concept design for an intersection on Ratanui Road has been carried out, as shown in Figure 9-1. To support safe access to the new road accessing the Site, the design allows for a 3m-wide right turn bay, with the eastbound lane diverting around. This would allow the road widening to be contained to the Site side of the road and for the westbound lane to be unaffected. Diverge and merge tapers for a 50km/h design speed are indicated, based on eastbound vehicles approaching from the 50km/h environment. The diverge taper starts east of the preschool entry, meaning preschool entry movements would not be impacted.



Figure 9-1: Indicative Design for Intersection with Right Turn Bay

The existing shared path on the Site side of the road is indicated to cross the new road close to the Ratanui Road intersection, and then a crossing point with a new refuge island on Ratanui Road is indicated west of the intersection. The existing footpath on the southern side of the road is indicated extending from the preschool to the crossing point. The section of unsealed shared path on the Site side of the road and west of the crossing point would be redundant and could be removed.

Based on the above, it is concluded that a T-intersection with a right turn bay in this location is feasible to support development of the Site, with works predominantly being carried out on the Site side of Ratanui Road. The design will be subject to refinement at subsequent consent and engineering design stages. The existing speed limit change point is approximately 35m west of the proposed intersection location and the position of the signs is a detail to be confirmed through design refinement.

9.2 Intersection Performance

The performance of a new T-intersection consistent with that presented above has been modelled using SIDRA Intersection 9 software.

The residential development scenario would generate higher peak hour traffic volumes than a comprehensive care retirement village on the Site and is therefore the focus of this assessment.

Morning peak (8:00am-9:00am) and evening peak (4:00pm-5:00pm) through traffic volumes on Ratanui Road are similar, whereas residential development generates more exiting traffic during the morning peak. Accordingly, the morning peak hour would be the critical period for the performance of the new intersection.

A 30% growth in Ratanui Road through traffic volumes, allowing for 10 years' linear growth at 3% per annum, has been applied to the modelling. This will allow for general growth in traffic volumes,



including any increases associated with the possible Otaihanga subdivision described in Section 6.4 of this report.

The following gap acceptance parameters, which are consistent with those recommended in the Sidra User Guide, have been adopted:

- 5.5 second critical gap and 3.2 second follow-up headway for the right turn out;
- 5 second critical gap and 3 second follow-up headway for the left turn out; and
- 4.5 second critical gap and 2.5 second follow-up headway for the right turn in.

The following Figure 9-2 presents the traffic modelling outputs. These outputs show that a new T-intersection serving approximately 235 residential dwellings would be expected to operate efficiently in the proposed location. The average delay for the critical right turn exit movement of 14s represents a good level of service, and queue lengths would only be up to one or two vehicles at any given point in time. As there will be negligible queuing on Ratanui Road, there is expected to be no practical influence on the performance of nearby access.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist] m				
East: Ratanui East															
5	T1	All MCs	466	3.0	466	3.0	0.241	1.1	LOS A	0.0	0.0	0.00	0.20	0.00	58.6
6	R2	All MCs	15	0.0	15	0.0	0.016	7.3	LOS A	0.1	0.4	0.45	0.63	0.45	36.9
Approach			481	2.9	481	2.9	0.241	1.3	NA	0.1	0.4	0.01	0.21	0.01	57.6
North: Site Road															
7	L2	All MCs	43	0.0	43	0.0	0.319	5.6	LOS A	1.4	9.5	0.69	0.89	0.85	34.5
9	R2	All MCs	86	0.0	86	0.0	0.319	14.4	LOS B	1.4	9.5	0.69	0.89	0.85	32.8
Approach			129	0.0	129	0.0	0.319	11.5	LOS B	1.4	9.5	0.69	0.89	0.85	33.4
West: Ratanui West															
10	L2	All MCs	28	0.0	28	0.0	0.216	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	48.5
11	T1	All MCs	386	3.5	386	3.5	0.216	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	49.7
Approach			415	3.3	415	3.3	0.216	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.6
All Vehicles			1025	2.7	1025	2.7	0.319	2.2	NA	1.4	9.5	0.09	0.23	0.11	49.8

Figure 9-2: Summary of Forecast Intersection Performance, Future AM Peak, Residential Development Scenario

Queuing will have a minimal effect on delays and therefore similar delays could be expected during the evening peak when passing traffic volumes are similar, and also in the retirement village scenario (albeit with lower turning volumes).

9.3 Intersection Safety

The traffic modelling presented in Figure 9-2 above shows that a T-intersection on Ratanui Road will operate efficiently, with low delays and minimal queuing, into the future. Ratanui Road is relatively straight and flat in the location of the proposed intersection, meaning that good visibility will be available for drivers turning out of the minor road from the Site and for drivers approaching the intersection when travelling on Ratanui Road.

A right turn bay, as indicated in the feasibility concept design presented in Section 9.1 of this report, would ensure that any vehicles waiting to turn right into the Site do not affect the safety and efficiency



of the westbound traffic lane. Urban vehicle speeds will help to ensure that drivers can turn to and from the Site safely. Based on all of the above, it is concluded that a T-intersection in the proposed location on Ratanui Road will be able to operate safely and efficiently into the future, and with negligible effect on the safety and efficiency of Ratanui Road.

10 Wider Traffic Effects

As outlined, Ratanui Road carries 6,000 – 7,000vpd on weekdays. If traffic volumes grow by 30% in the next decade as a result of background traffic growth, volumes could be in the 8,000 – 9,000vpd range. It is considered that daily traffic volumes in this range would be getting towards the upper end of traffic volumes that could be expected on a Local Community Connector route, and regardless of the proposed Plan Change it may be appropriate for the classification of the road to be revisited at the next District Plan review. If the classification changed in the future, it is considered the proposed access connection (whether local residential road or retirement village access) will still be suitable.

Based on two thirds of traffic generated by potential development of the Site travelling to and from the west (towards Paraparamu), development of the Site could result in traffic volume increases on Ratanui Road of approximately 680 – 1,170vpd to the west of the Site and 340 – 590vpd to the east of the Site. These increases will not alter the function of Ratanui Road, regardless of District Plan road classification, with traffic volumes remaining at a level that can accommodate safe and convenient access to properties along the road, including for the nearby preschool. As outlined in Section 9.1, it will be possible for a right turn bay design that does not impact the preschool entry movement.

Traffic volumes on Mazengarb Road, the nearby Major Community Connector route, are in the order of 8,000 – 9,000vpd. Even with growth in traffic volumes, the recently constructed roundabout at the Mazengarb Road / Ratanui Road intersection will continue to accommodate through movements on Mazengarb Road and turning movements into and out of Ratanui Road safely and efficiently.

Traffic volumes on Otaihanga Road to the east are lower than those on Ratanui Road, therefore small increases in traffic volumes associated with development of the Site will be able to be accommodated.

In preliminary discussions, Council has accepted that the scale of traffic generation from a potential retirement village scenario on the Site does not cause concerns in terms of the safety or efficiency of the wider transport network. The standard residential development scenario assessed would result in a larger daily traffic generation, albeit one generally of the same order (1,760vpd vs 1,020vpd).

Based on the above, it is concluded that traffic generated by development of the Site will be accommodated safely and efficiently on the wider network.

11 Accessibility by Non-Car Travel

The assessment to follow in respect of pedestrians, cyclists and public transport is applicable for the future development options represented by both Scenarios 1 and 2.



11.1 Pedestrian / Cyclist Accessibility

The Site has a single road frontage on Ratanui Road. This road currently has a gravel path along the Site frontage running east to the Otaihanga Road intersection and a footpath on the southern side of the road between Mazengarb Road and the Little Farm preschool.

The feasibility concept design presented in Section 9.1 of this report includes an extension of the southern footpath beyond the preschool and a crossing point to link to the path on the northern side of Ratanui Road.

The feasibility concept design shows that a new intersection in the proposed location on Ratanui Road will be able to contribute to a better-connected path network. The crossing point and extension of the southern footpath will provide benefits to existing path users, as well as ensuring development of the Site is appropriately connected to existing infrastructure in the area.

Connectivity to potential future development adjacent to the Site is proposed as a matter of discretion for Council for a residential development of the Site and it will be appropriate to consider this further at the subdivision consent stage. If a retirement village is to be developed on the Site, connectivity for future residents of the retirement village to surrounding areas for walking and cycling will be able to be considered at the resource consent stage through the District Plan 'major traffic activity' transport assessment process.

11.2 Public Transport

As outlined in Section 3.2 earlier, the nearest bus route is on Mazengarb Road approximately 700m to the west of the Site. Given this distance and the limited frequency of the bus service on Mazengarb Road, it is considered that the bus service uptake from the development of the Site would be relatively low unless the frequency is increased to at least every 15 minutes³. However, development of the Site will be able to be connected to the existing path network, as outlined above, to ensure that the Site is accessible by public transport.

It is noted that public transport provision typically responds to demand and routes can be re-evaluated as part of future service reviews. If a bus route is to connect the residential areas of Paraparaumu Beach with Waikanae in the future, Ratanui Road / Otaihanga Road / Old SH1 would appear to be a logical route. Development of the Site would also be connected to any service running along Ratanui Road via the path network.

³ NZTA guidance on walking catchments is that people may be willing to walk up to 800m for a high frequency public transport stop (a service at least every 15 minutes).

<https://www.nzta.govt.nz/walking-cycling-and-public-transport/public-transport/public-transport-framework/integrated-planning-and-design/public-transport-design-guidance/getting-to-and-from-public-transport/walking/>



12 District Plan Provisions

The requirements of Part 2 – District Wide Matters – Transport of the District Plan have been reviewed to assess the appropriateness of these applying to development of the Site at the consenting stage. Relevant requirements along with comments on the suitability of these requirements are outlined in the table in Appendix B to this report. From this review, it is concluded that there are no concerns with the rules being applied to a development of the Site for either standard residential or retirement village use. Of note, a retirement village or a residential subdivision generating more than 100vpd would be considered a ‘major traffic activity’ under Transport Rule 2, requiring a transport assessment at the consenting stage with Council having discretion over consistency with all District Plan transport policies.

13 Conclusion

This assessment has considered the possible development of the Site for either standard residential development or a comprehensive care retirement village.

From a traffic perspective, the residential development scenario would generate higher traffic volumes, and the morning peak period is the critical period for assessment due to a greater volume of exiting movements. It has been concluded that a new T-intersection with a right turn bay on Ratanui Road will be able to accommodate traffic from either residential or retirement village uses safely and efficiently, with a negligible effect on the safe and efficient operation of Ratanui Road.

There is capacity on Ratanui Road and the wider roading network to accommodate traffic volume increases associated with either development scenario.

A feasibility concept design for a new T-intersection on Ratanui Road has confirmed that an intersection layout appropriate for the existing speed environment will be able to be designed through consent and approval processes to follow. The intersection and associated frontage upgrades will provide the opportunity for a crossing point between the existing path on the northern side of the road, and an extended footpath on the southern side of the road. This will benefit existing users of the paths as well as ensure development of the Site is connected to existing infrastructure.

The proposed text provisions accompanying the structure plan include a matter of discretion for a residential development relating to connectivity to adjacent land. It will be appropriate for this matter to be considered further through subdivision consenting. Existing District Plan transport provisions will require a transport assessment for a retirement village development generating 100vpd, with that assessment giving Council discretion to consider consistency with District Plan transport policies.

It is concluded that the proposed rezoning of the Site from Rural Lifestyle to General Residential Zone, with development to be guided by the proposed structure plan and accompanying text provisions, and required to go through future consenting processes, is supported from a transport perspective.



Appendices



Appendix A Traffic Generation Calculations for Retirement Village

The most recent traffic surveys of a modern retirement village were carried out at the 5.2ha Summerset Wigram retirement village in Christchurch in 2018.

Table A-1 shows the traffic generation rates calculated from these surveys for independent living units and assisted living suites / care beds, which have been adopted in transport assessments for a number of retirement villages, and consented as appropriate.

A-1 Recorded Retirement Village Traffic Generation Rates

Unit Type	AM Peak	Village Peak	PM Peak	Daily
Independent Living Unit	0.11vph/unit	0.25vph/unit	0.26vph/unit	3.03vpd/unit
Assisted Living / Care Bed	0.06vph/unit	0.37vph/unit	0.24vph/unit	2.56vpd/unit

The AM and PM peak traffic generation rates coincide with the highest hourly traffic generation rates recorded during the road network peak periods i.e. 7:00am-9:00am and 4:00pm-6:00pm. The 'village peak' traffic generation was recorded earlier in the afternoon.

With a potential retirement village development on the Site involving 260 independent living units and 90 assisted living suites / memory care suites / care beds, the following **Table A-2** summarises the possible traffic generation of the village applying the rates determined from the survey.

A-2 Potential Traffic Generation of Retirement Village

Unit Type	AM Peak	Village Peak	PM Peak	Daily
Independent Living Unit	29vph	65vph	67vph	788vpd
Assisted Living / Care Bed	5vph	33vph	22vph	230vpd
Total	34vph	98vph	89vph	1,018vpd

The following **Table A-3** summarises the directionality of traffic generation recorded at the Wigram village by period.

A-3 Directionality of Wigram Village Traffic Generation

Period	In	Out
AM Peak	48%	52%
Village Peak	53%	47%
PM Peak	53%	47%



Appendix B Assessment of Appropriateness of District Plan Transport Requirements

Requirement	Comment
<p>TR-R2 Vehicle Movements</p> <p>2. In all other zones, any activity must not generate more than 100 vpd. An activity generating more than 100vpd is a 'major traffic activity', requiring a Transport Assessment and a Travel Plan with the resource consent application.</p>	<p>Appropriate for development of the Site to be assessed as a major traffic activity at consent stage if threshold is met.</p>
<p>TR-R3 Site access and loading</p> <p>1. Access - every site must provide either:</p> <ol style="list-style-type: none"> vehicular access over land or by mutual right of way or service lane for parking and/or loading and shall be in accordance with TR-Diagram - 2; 	<p>Appropriate for vehicle access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>2. Vehicle access and pedestrian access - all vehicle accesses and pedestrian accesses must be designed, constructed and maintained to ensure that:</p> <ol style="list-style-type: none"> they are able to be used in all weather conditions; they have no adverse impact on the roadside drainage system; and surface water and detritus (including gravel and silt) does not migrate onto the highway pavement. 	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>3. Vehicle access - all vehicle accesses must meet the following:</p> <ol style="list-style-type: none"> be a minimum of 3.5 metres wide, except for as set out in TR-Table 1. be a maximum of 9 metres wide, except in the Beach Residential Zone at Waikanae Beach where the maximum shall be 6.0 metres wide. 	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>4. Vehicle access- sites containing non-residential activities and which provide more than six car parks, shall provide two-way vehicle accesses which must be a minimum of 6m wide.</p>	<p>Appropriate for retirement village access arrangements to be assessed at resource consent stage.</p>
<p>7. Vehicle access spacing- rule sets out requirements for vehicle access separation to intersections carrying less than 1,000vph.</p>	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>8. Vehicle Access spacing for major traffic activities - no crossing point must be located closer to any intersection than the distance specified in TR-Table 2 - Access Distance Dimensions. Distances are measured in metres (m) to the intersecting kerb line.</p> <p>-Vehicle access on a Local Community Connector to be at least 15m from a Local Community Connector or Neighbourhood Access intersection</p>	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>



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<p>9. Vehicle access sight distances - the required minimum sight distance between the vehicle access and the road must be in accordance with TR-Diagram - 3 and TR-Table 3 - Sight Distance Dimensions</p> <p>- Table 3: Minimum sight distance for private access on 'other roads' with 60 km/h speed limit: 60m.</p>	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>12. Manoeuvring</p> <p>a. Private residential access - unless the driveway accesses directly from a Neighbourhood Access Route, sufficient manoeuvring space must be provided on-site to ensure no reversing onto the road is necessary.</p> <p>b. Commercial properties- must ensure that all buildings and parking areas are designed so that sufficient manoeuvring space is provided on-site to ensure no reversing onto the road is necessary.</p>	<p>Appropriate for access requirements to apply to individual residential lots or a retirement village as a whole.</p>
<p>TR-R4 Design and layout of vehicle parking for all activities</p> <ol style="list-style-type: none"> 1. All parking must be formed, marked out and maintained for use in all weathers. 2. Surface water originating from the parking area must be managed without adversely impacting other properties either upstream or downstream of the development subject site. 3. Vehicles using the parking area must only use the formed vehicle access point (crossing point) to enter and exit the vehicle parking areas. 	<p>Appropriate for these parking requirements to apply to development of the Site.</p>
<p>TR-R5 Parking layout and design for all activities except residential activities.</p> <ol style="list-style-type: none"> 1. All parking must be sealed or otherwise maintained to have a dust free surface, at all times, and shall comply with car parking dimension standards in TR-Diagram 8 2. All parking must be formed, marked out and maintained for use in all weathers 3. When a parking area is required to accommodate three or more vehicles, parking spaces together with access and turning spaces must be designed so as to ensure that vehicles are not required to reverse either onto or off legal road 	<p>Appropriate for requirements to apply to retirement village parking.</p>
<p>TR-R9 New roads including where they are to serve a subdivision</p> <p>New roads are Controlled Activities with matters of control including routes, design and construction and provision for pedestrians and cyclists.</p>	<p>Appropriate for requirements to apply to any new roads within a residential subdivision of the Site.</p>
<p>TR-PARK-R18 Accessible carparks</p> <p>Accessible car parks must be provided at the rate shown in TR-Table 6A.</p> <p>Requirements apply to multi-unit residential developments. Unclear whether requirements apply to a retirement village.</p>	<p>Appropriate for rules to apply to development of the Site. Accessible parking would be provided for retirement village regardless of requirement.</p>



TR-PARK-R19 Cycle parking

Requirements for number and standard of cycle parking spaces to be provided for a range of activities, including multi-unit residential. Unclear whether requirements apply to a retirement village.

Appropriate for rules to apply to development of the Site. Cycle parking would be provided for retirement village regardless of requirement.





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