Momentum Land Limited (Submitter #173)

Request for Rezoning
142-151 Ferry Road / 310 Beach Road
Kaiapoi

Transportation Assessment

CARRIAGEWAY
CONSULTING
traffic engineering | transport planning

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1. Introduction

1.1. Waimakariri District Council is presently reviewing its District Plan, as part of which it is also considering the rezoning of land. Land at 142-151 Ferry Road and 310 Beach Road in Kaiapoi is proposed by the Council to be zoned as Rural Lifestyle Zone with a 'Development Area' overlay.

1.2. Momentum Land Limited has made a submission to the District Plan review process, seeking that these areas of land are zoned as Medium Density Residential Zone (**MDRZ**).

1.3. This Transportation Assessment sets out a detailed analysis of the transportation issues associated with the requested zoning of the sites as MDRZ, including changes in travel patterns that are likely to arise. Where potential adverse effects are identified, ways in which these can be addressed are set out.

1.4. This report is cognisant of the guidance specified in the New Zealand Transport Agency's '*Integrated Transport Assessment Guidelines'* and although travel by private motor vehicle is addressed within this report, in accordance with best practice the importance of other transport modes is also recognised. Consequently, travel by walking, cycling and public transport is also considered.

2. Site Overview

2.1. Location

2.1.1. The submission relates to two sites, located towards the north and the west of the Beach Grove subdivision. These are referred to within this report as the **North Block** and **South Block** respectively (or **the sites**).

2.1.2. The location of the sites in the context of the local area is shown in Figure 1 and in more detail in Figure 2. It should be noted that the total built area of Beach Grove is greater than shown on the aerial photograph.

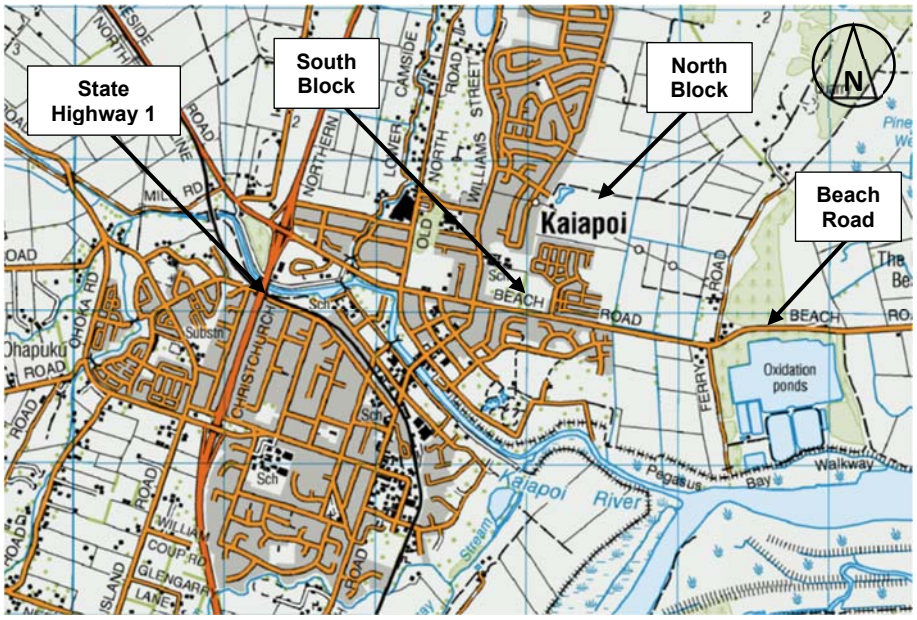


Figure 1: General Location of Sites

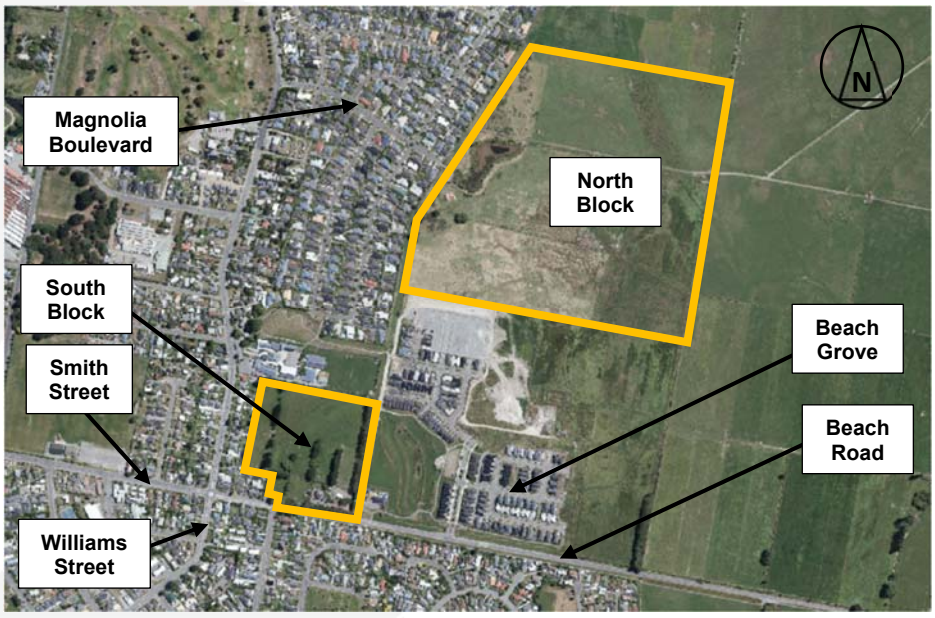


Figure 2: Aerial Photograph of Sites and Environs

2.2. Roading Classification

2.2.1. The South Block has frontage onto Beach Road towards the south. This proposed District Plan (**PDP**) classifies Beach Road as a Collector Road, indicating a role of providing direct property access as well as accommodating through traffic.

2.2.2. There is also a partially-formed legal road that runs along the eastern side of the South Block, although this presently functions as an accessway. Accordingly, it is not classified within the roading hierarchy.

2.2.3. The North Block has frontage towards the west onto Magnolia Boulevard. This is a Local Road, meaning that it provides for local journeys and property access. In turn, this connects onto Williams Street, which is an Arterial Road, indicating a role of primarily providing for through traffic and a connection between settlements.

2.2.4. Towards the southwest, the North Block has frontage onto roads within Beach Grove. The westernmost of these connections is via Isa Lei Road and Tuhoe Avenue, and onto Beach Road. As the road network in the area is still under construction, the roading hierarchy is not formalised in places. However Tuhoe Avenue is classified as a Collector Road in the PDP and the Outline Development Plan for Beach Grove classifies Isa Lei Road as a Collector Road also.

2.2.5. Towards the southeast, the North Block has frontage onto other roads within Beach Grove, notably McGarry Drive, which connects to Beach Road approximately 800m from Tuhoe Avenue. Under the Outline Development Plan for Beach Grove, this is a Collector Road.

2.2.6. Towards the west, Smith Street is a Strategic Road indicating a role of predominately carrying through traffic.

3. Current Transportation Networks

3.1. Roading Network

3.1.1. All roads in the area of the site have a speed limit of 50km/h unless otherwise noted below.

South Block

3.1.2. At the site frontage, Beach Road runs with a flat and straight east-west alignment, and provides one traffic lane in each direction of 3.3m width within a 20m wide legal width. The road is formed with a narrow shoulder, but at the southwestern corner of the side, the road has parking lanes on each side that are in excess of 3m wide. The road has a centreline and edgeline markings.

Photograph 1: Beach Road Looking East (Site on Left)

3.1.3. At the southwestern corner of the South Block, Meadow Street joins Beach Road from the south. The intersection is priority ('give-way') controlled, and the Meadow Street leg has build-outs and a threshold treatment to slow vehicles at they turn. The intersection does not have any auxiliary turning bays for vehicles turning left or right from Beach Road. Meadow Street rises up slightly to meet Beach Road.

Photograph 2: Beach Road / Meadow Street Looking Southeast

3.1.4. Meadow Street is flat and straight, and provides one traffic lane in each direction of 3m width, with parking lanes of 2.1m width on each side. It serves residential property, meaning that there are multiple driveways on each side. There is a build-out located 100m south of Beach Road, which it is anticipated was put in place to slow vehicle speeds.

Photograph 3: Meadow Street Looking South

3.1.5. At the southeastern corner of the South Block, an un-named legal road joins Beach Road from the north at a priority ('give-way') intersection. The intersection has an auxiliary right-turn bay for vehicles turning from the east to the north, but no left-turn bay.

Photograph 4: Beach Road / Un-Named Road Intersection Looking East

3.1.6. The un-named road has a legal width of 20m, and although it is largely unformed over much of its length, it has been formed with a 6m carriageway over a distance of around 80m in order to provide access to a preschool and a sales office for the Beach Grove development towards the east.

Photograph 5: Un-Named Road Looking North to Beach Road (South Block on Right)

3.1.7. Some 200m towards the east, Tuhoe Avenue joins Beach Road from the north, and provides access to the Beach Grove residential subdivision (this is discussed further subsequently).

3.1.8. Approximately 130m west of Meadow Street, Beach Road terminates at a roundabout, with Williams Street forming the northern and southern approaches, and Smith Street forming the western approach. Each approach to the roundabout has one traffic lane, and the central island of the roundabout is provided with a low over-run area to allow larger vehicles to turn more easily.

Photograph 6: Williams Street / Beach Road Roundabout Looking North

3.1.9. Towards the south, Williams Street provides access to Kaiapoi town centre, and to the north, connects to State Highway 1. Smith Street runs westwards and also joins State Highway 1, around 2.8km south of Williams Street.

North Block

3.1.10. On the western side of the North Block, Magnolia Boulevard terminates without a turning head[1], but with landscaping and a narrow roadway formation provided. Immediately west of this however, the road is formed with a 12m carriageway within a 20m wide road reserve. The road is characterised by private driveways on each side, with parking permitted on both sides of the road. The alignment is flat and straight.

Photograph 7: Eastern End of Magnolia Boulevard Looking East

[1] This is usually an indication of a presumption that a road will be extended at some time in future

3.1.11. Approximately 75m west, Magnolia Boulevard meet Allison Crescent and Fergus Street, at a small roundabout. These two Local Roads serve residential property to the north and south.

Photograph 8: Magnolia Boulevard / Allison Crescent / Fergus Street Roundabout Looking East

3.1.12. Immediately west of the roundabout, and as far as it's termination at Williams Street, the cross-section of Magnolia Boulevard is characterised by a dual carriageway arrangement, with a 5.2m wide carriageway on either side of a 1.5m wide landscaped median. The legal width also increases, to 25m. The road continues to have a flat and straight alignment with private driveways on each side.

Photograph 9: Magnolia Boulevard Looking West and Showing Median

3.1.13. Approximately 300m west of the North Block, Magnolia Boulevard turns slightly towards the south and then rises to meet Williams Street at a priority ('give way') intersection. The intersection has an auxiliary right-turn bay for traffic turning off Williams Street and onto Magnolia Boulevard. Williams Street in this location has a gentle curve which means that sight distances for all turning traffic are excellent.

Photograph 10: Williams Street / Magnolia Boulevard Intersection Looking North

3.1.14. Approximately 2km towards the north, Williams Street joins State Highway 1. To the south, the road provides one traffic lane in each direction, with a flat vertical alignment and gently curving horizontal alignment within a 20m legal width. Parking is generally permitted on both sides of the road, with a parking lane intermittently marked, plus a centreline. There are numerous private driveways that connect to the road on each side.

Photograph 11: Typical Cross-Section of Williams Street Looking North

3.1.15. Around 700m south of its intersection with Magnolia Boulevard, Williams Street meets Beach Road at the roundabout discussed above.

3.1.16. Towards the south of the North Block, there are a series of roading connections through the Beach Grove subdivision. On the southwestern side of the site, the roading connectivity is provided by Isa Lei Road, and while this presently terminates at a tee-intersection with Ranginui Drive, the lot that lies directly to the north of this intersection is reserved for a future

roading extension with corner splays and the same legal width as the formed part of Isa Lei Road further south.

Photograph 12: Northern End of Isa Lei Road Looking North to Future Road Extension

3.1.17. Ise Lei Road itself (and the lot for future extension) has a 20m legal width, and a formed carriageway width of 6.4m with indented parking bays on either side and a speed hump mid-way along. The road is flat, with a gentle horizontal curve, and meets Tuhoe Avenue at a priority intersection approximately 220m from the North Block southern boundary.

Photograph 13: Isa Lei Road Looking North

3.1.18. From this intersection, for approximately 170m Tuhoe Avenue has a 6.4m wide carriageway within a 20m legal width, but does not have indented parking. However from this location southwards (as far as Beach Road), Tuhoe Avenue has a raised median which separates two carriageways of 3.5m width each.

Photograph 14: Tuhoe Drive Looking South

3.1.19. Tuhoe Avenue meets Beach Grove at a priority intersection. The intersection does not have any right-turn bay, but a short auxiliary left-turn lane is provided for vehicles turning from Beach Road into Tuhoe Avenue.

Photograph 15: Beach Road / Tuhoe Avenue Intersection Looking West

3.1.20. As noted above, the partially formed legal road at the eastern boundary of the South Block joins Beach Road from the north approximately 200m to the west of Tuhoe Avenue.

3.1.21. The North Block also gains access to Beach Road via McGarry Drive. This road is currently under construction (as it forms an ongoing stage of Beach Grove), but is consented with a 7m wide carriageway and indented parking on each side. The drawings show that the road has flat vertical alignment, and is largely straight but with one shallow curve approximately mid-way along its length.

3.1.22. McGarry Drive meets Beach Road at a priority intersection. In the location of the intersection, the speed limit of Beach Grove is 70km/h (with this changing to the urban limit of 70km/h approximately 75m east of Tuhoe Avenue).

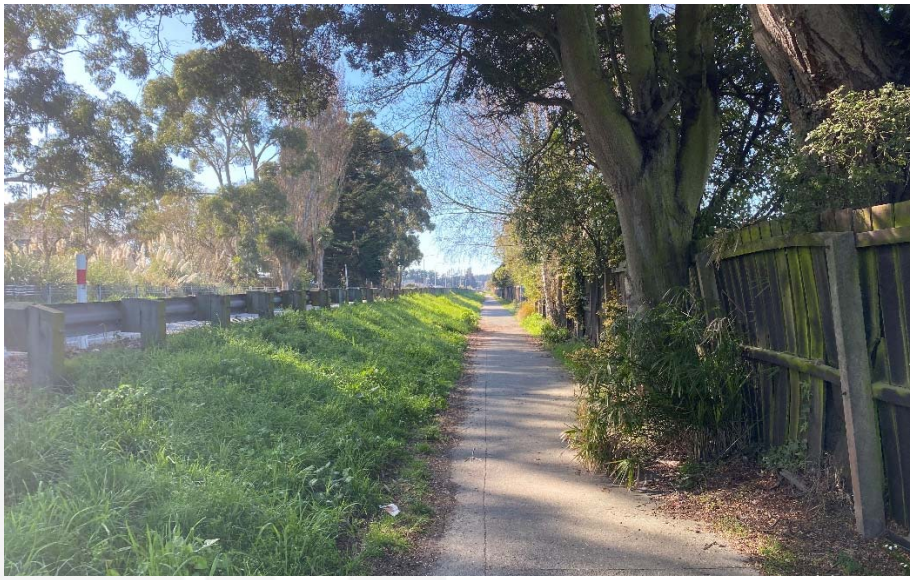
3.2. Non-Car Infrastructure

3.2.1. Because the roads in the vicinity of both sites are within urban areas, there is generally a good level of infrastructure for non-car modes of travel.

South Block

3.2.2. For a distance of 70m east of the roundabout, there are footpaths on each side of Beach Road. However further east, the northern footpath ceases and continues only on the southern side. There is a zebra crossing located 50m east of the roundabout to enable pedestrians to cross between the northern and southern footpaths.

3.2.3. The southernmost footpath terminates on the western side of the Beach Road / Meadow Street intersection. To the east of the intersection, there is a shared pedestrian/cyclist route provided along the southern side of Beach Road, located at a lower level to the roadway. This runs along Beach Road for a further 3km, to Pines Beach.



Photograph 16: Shared Walking/Cycling Route on Beach Road, just East of Meadow Street

3.2.4. Meadow Street has a footpath on each side but also has a cycle lane on the eastern side. This runs the full length of Meadow Street (but changes to a shared walking/cycling route), but terminates over a short section as it reaches Cass Street. However, it continues again on Feldwick Drive some 60m away, and extends to the shared route that runs along the northern side of the Kaiapoi Rover.

Photograph 17: Northern End of Footpath and Cycle Lane Meadow Street

3.2.5. The part of the un-named legal road that abuts Beach Grove is formed as a shared walking and cycling route. This shared route extends along the eastern side of the southernmost section of road (the part that is formed as a carriageway), and this then provides a connection to the shared route on the northern side of Beach Grove (which in turn connects into the built-up area).

Photograph 18: Northern End of Un-Named Legal Road showing Shared Route

3.2.6. To the immediate southeast of the un-named legal road, there is a refuge provided on Beach Grove for pedestrians and cyclists, which connects to a ramp on the southern side of the road and which in turn joins the shared walking/cycling route that runs along the southern side of Beach Road.

Photograph 19: Ramp Connection to Beach Road Shared Route

North Block

3.2.7. As can be seen on Photograph 9 above, Magnolia Boulevard has footpaths on each side, but there are no specific cycle facilities provided. The latter is not uncommon for low-speed residential roads. There are no formal pedestrian crossing facilities on the road, which again is not uncommon.

3.2.8. Williams Street at Magnolia Boulevard only has a footpath on the eastern side, but a second footpath commences at 120m to the south, and Williams Street then has a footpath on each side over the remainder of its length southwards. Williams Street also does not have any formal cycle infrastructure.

3.2.9. Within Beach Grove, Photographs 13 and 14 show that Isa Lei Road and Tuhoe Avenue have footpaths on both sides, with the footpath on the eastern side of Tuhoe Avenue being a shared off-road cyclepath. These terminate just to the north of Beach Road, and Beach Road itself does not have walking/cycling provision on its northern side (the provision on the southern side is discussed above). However the shared route connects to an off-road route that runs parallel to Beach Road and 200m to the west connects to the provision made on the partially-formed legal road and to the pedestrian refuge on Beach Road (also discussed above). There is also a shared walking and cycling route approximately 20m north of (and running parallel to) Beach Road. It is understood that in due course this will be extended to McGarry Drive.

3.2.10. There are other walking and cycling routes within Beach Grove which provide non-car connectivity, including a north-south route on the western side of Tuhoe Avenue, approximately 50m west of the road.

3.2.11. As noted above, the roading network towards the southeast of the North Block is presently under construction. However McGarry Drive is consented with a footpath on each side and with the western footpath being a formal shared route with cyclists.

Buses

3.2.12. There are no buses which operate along Beach Road. However Service 1 (Rangiora-Cashmere) and Service 95 (City-Pegasus) operate on Williams Street with the bus stops located 50m south of the Williams Street / Beach Road roundabout and 100m south of the Williams Street / Magnolia Boulevard intersection.

3.2.13. The bus stops to the south of the Williams Street / Beach Road roundabout are 180m walking distance from the South Block. The southbound bus stop has a shelter but the northbound bus stop is marked with just a flag and pole[2].

3.2.14. The bus stops to the south of the Williams Street / Magnolia Boulevard intersection are 500m walking distance from the North Block. Again, the southbound bus stop has a shelter but the northbound bus stop is marked with just a flag and pole.

3.3. Future Changes

3.3.1. There are no known confirmed changes to the roading environment in the immediate area that are set out in any overarching strategies or guides (other than the forthcoming changes associated with Beach Grove).

3.3.2. It is however relevant to note that in in July 2023, the Woodend Bypass was designated as a Road of National Significance by the National Party, with a statement that if elected, construction would commence "*1 to 3 years*"[3]. This would mean construction would commence by October 2026 at the latest.

3.3.3. It is relevant that one part of the road scheme will involve changes to the existing State Highway 1 / Williams Street intersection at Pineacres. Although this is located more than 2km to the north of the North and South Blocks, it is relevant because changes to this intersection may result in changes to traffic flows on Williams Street. The existing intersection is a known road safety hotspot, and so changes here may result in increases to volumes (if the intersection is improved) or decreases (if the intersection is closed). At the present time however, the scheme is not designed and so no further comment can be made on this.

[2] This arrangement is common where passengers walk to a bus stop and wait for a bus in one direction, but on returning walk from the bus stop directly to their destination without any waiting.

[3] https://assets.nationbuilder.com/nationalparty/pages/18131/attachments/original/1690759286/Transport_for_the_Future.pdf?1690759286

4. Current Transportation Patterns

4.1. Traffic Flows

4.1.1. According to the MobileRoad website, the roads in the vicinity of the sites carry the following daily traffic volumes[4]:

- Isa Lei Road / McGarry Drive: no data;
- Tuhoe Road: 1,250 vehicles (two-way);
- Beach Road at South Block: 3,520 vehicles (two-way);
- Magnolia Boulevard: 3,020 vehicles (two-way);
- Williams Street at Magnolia Boulevard: 3,810 vehicles (two-way); and
- Williams Street north of Beach Road: 9,300 vehicles (two-way).

4.1.2. It is commonly accepted that roads carry around 10% of their daily traffic volumes in the peak hours. However in order to ensure that most accurate data is used in this assessment, morning and evening weekday peak hours were surveyed at the Williams Street / Beach Road / Smith Street roundabout and the Williams Street / Magnolia Boulevard intersection. The surveys at the roundabout were undertaken in February 2024 with the surveys at the priority intersection being undertaken in March 2023. The results are summarised below.

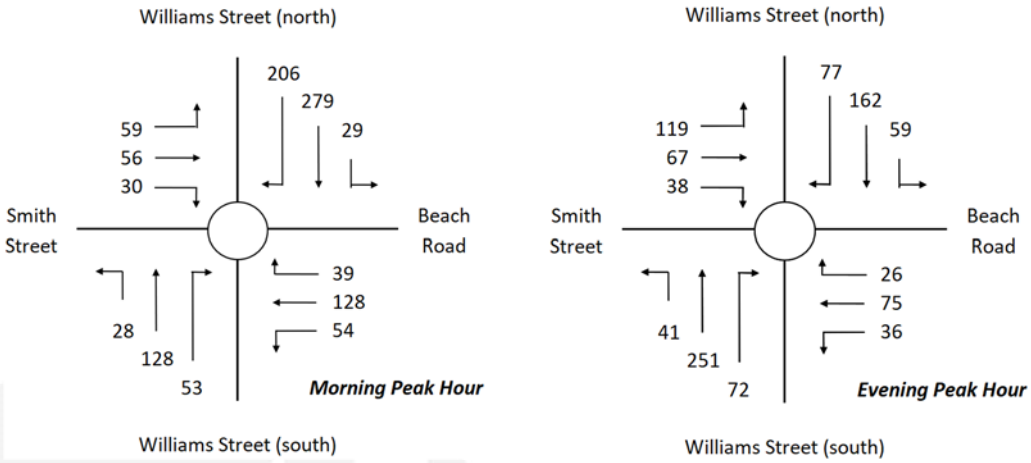


Figure 3: Williams Street / Beach Road / Smith Street Roundabout, 2024 Observed Turning Volumes

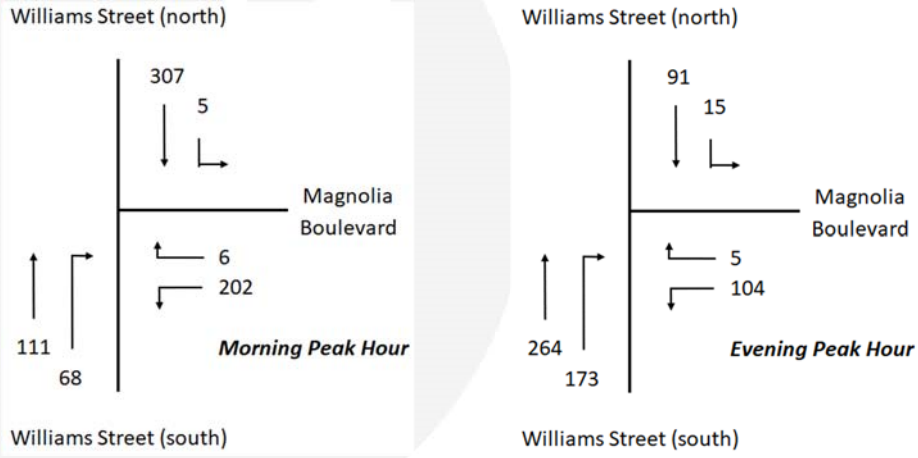


Figure 4: Williams Street / Magnolia Boulevard Intersection, 2023 Observed Turning Volumes

[4] Rounded up the nearest 10 vehicles

4.1.3. The traffic flows on Beach Road do not fully take into account the full extent of development at Beach Grove, since the subdivision is still under construction. However previous analyses have been undertaken (in respect of the appropriate form for the Beach Road / Tuhoe Avenue and Beach Road / McGarry Drive intersections) which have addressed the matter of the incomplete subdivision (for example, Carriageway Consulting letters dated 9 March 2022 and 7 March 2023).

4.1.4. In brief, the approach taken has been based on an understanding that when complete, Stages 1 to 8 of Beach Grove will comprise a total of 520 lots. At the time that the surveys were carried out, a further 308 lots were anticipated to be consented and/or constructed.

4.1.5. For all previous assessments of the Beach Grove development, a traffic generation rate of 1 vehicle movement per residence has been adopted. This rate has been applied for the additional 308 residences expected in future stages of Beach Grove, to the observed traffic flows. Previous traffic surveys of the Beach Road / Tuhoe Avenue intersection have shown that almost all traffic exiting or entering Beach Grove does so to/from the west, and therefore 95% of the additional traffic has been assumed to travel between Tuhoe Avenue and Williams Street. According, the vehicles associated with future stages of Beach Grove have been allocated onto the Williams Street / Beach Road / Smith Street intersection in accordance with the observed traffic volumes travelling along Beach Road.

4.1.6. Overall then, this results in the following baseline traffic volumes for the purposes of analysis with Beach Grove fully developed (but without any traffic generated by development within the North or South Blocks):

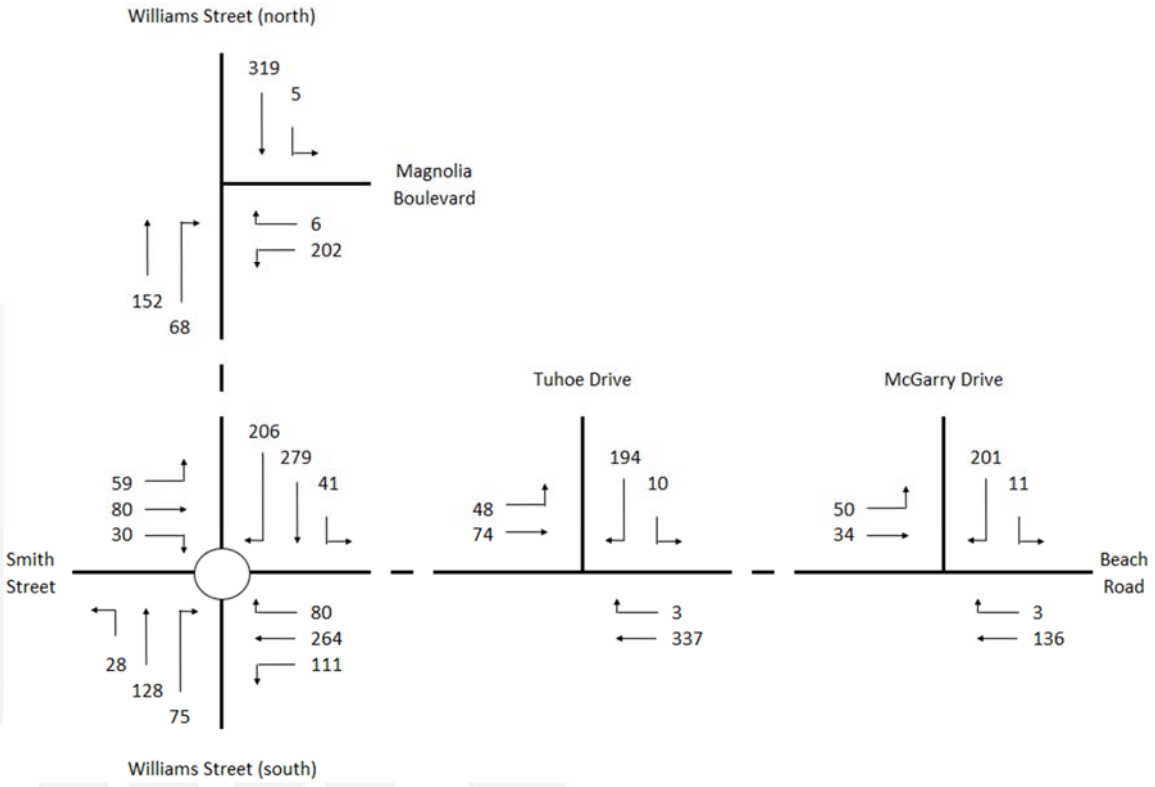


Figure 5: Roading Network in Vicinity of Site, Morning Peak Hour, Receiving Environment for Submission

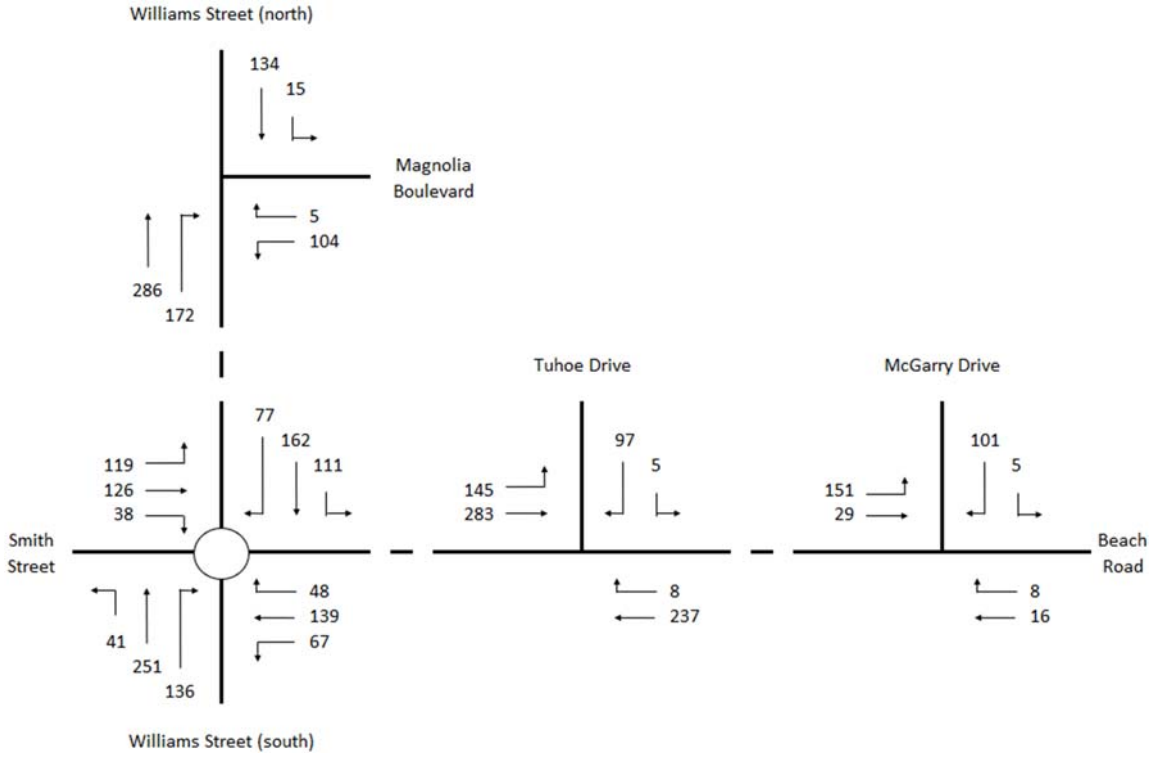


Figure 6: Roading Network in Vicinity of Site, Evening Peak Hour, Receiving Environment for Submission

4.1.7. Each of the intersections above has been assessed using the computer software package Sidra Intersection, and the results are summarised below. In the case of the Beach Grove / Tuhoe Drive intersection, the layout tested is the same as is in place. For the purposes of assessment, the layout of the Beach Grove / McGarry Drive intersection is assumed to be identical to that at the Beach Grove / Tuhoe Drive intersection.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	L	10	2	A	8	4	A
	T	10	2	A	8	4	A
	R	13	2	B	11	4	B
Beach Road	L	14	7	B	7	2	A
	T	14	7	B	7	2	A
	R	17	7	B	10	2	B
Williams Street (north)	L	7	4	A	8	3	A
	T	7	4	A	8	3	A
	R	10	4	A	11	3	B
Smith Street	L	7	1	A	9	3	A
	T	7	1	A	9	3	A
	R	10	1	A	12	3	B

Table 1: Peak Hour Levels of Service at the Williams Street / Beach Road / Smith Street Roundabout (Receiving Environment, No Development of Sites)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	R	7	0	A	6	1	A
Magnolia Boulevard	L	8	1	A	6	0	A
	R	10	0	B	11	0	B
Williams Street (north)	L	6	0	A	6	0	A

Table 2: Peak Hour Levels of Service at the Williams Street / Magnolia Boulevard Intersection (Receiving Environment, No Development of Sites)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Beach Road (east)	R	6	0	A	8	0	A
Tuhoe Drive	L	6	0	A	7	0	A
	R	10	2	A	11	1	B
Beach Road (west)	L	6	0	A	6	0	A

Table 3: Peak Hour Levels of Service at the Beach Road / Tuhoe Drive Intersection (Receiving Environment, No Development of Sites)

4.1.8. It can be seen that all three intersections operate with a good level of service and small queues and delays, even when accounting for the full development of Beach Grove.

4.2. Non-Car Modes of Travel

4.2.1. Given that the area is predominantly urban, it can reasonably be expected that it will be well-used by pedestrians and cyclists. The provision of footpaths and crossing points means that extent of infrastructure for pedestrians is good. Within Beach Grove, a good level of provision is also made for cyclists, but the traffic volumes and status of Williams Street means that cycle lanes are justified (but are not in place).

4.2.2. The bus stops on Williams Street to the south of Beach Road are within a viable walking distance of the South Block. Both services (Service 1 (Rangiora-Cashmere) and Service 95 (City-Pegasus)) operate with a 30-minute and 60-minute frequency respectively.

4.3. Road Safety

4.3.1. The Waka Kotahi Crash Analysis System has been used to establish the location and nature of the recorded traffic crashes in the vicinity of the sites. All reported crashes between 2019 and 2023, plus the partial record for 2024, were identified on Beach Road (Beach Grove to Williams Street), Williams Street (Magnolia Boulevard), Magnolia Boulevard (full length), Beach Grove (all development) and for 50m on each side of the Williams Street / Beach Road / Smith Street roundabout.

4.3.2. This showed that there was a total of 15 crashes recorded:

- One crash occurred within Beach Grove, when a driver struck a straying pet dog. The crash did not result in any injuries;
- Two crashes have occurred at the Beach Grove / Tuhoe Drive intersection:
    - One crash occurred when a driver pulled out of Tuhoe Drive and struck a westbound truck on Beach Road. The police report notes that the at-fault driver's vehicle was on false number plates, and had no Warrant of Fitness or registration. The crash did not result in any injuries;
    - One crash occurred when a driver pulled out of Tuhoe Drive and struck an eastbound vehicle on Beach Road. The police report notes that the at-fault vehicle was being driven by a learner driver. The crash resulted in minor injuries;
- One crash occurred on Beach Road. This occurred when a driver overtook a motorcyclist and then immediately braked harshly, meaning that the motorcyclist crashed into the rear of the car. The police report notes that this appears to have been an incident of road rage. The crash did not result in any injuries;
- Three crashes have occurred at the Williams Street / Beach Road / Smith Street roundabout:
    - One crash occurred when a southbound driver on Williams Street pulled out in front of a motorcyclist that was turning into Beach Road. The crash resulted in minor injuries;
    - One crash occurred when an eastbound driver on Smith Street failed to slow for the roundabout and crashed into a fence. The Police report notes that the driver was intoxicated and/or drugged. The crash resulted in minor injuries;
    - One crash occurred when an eastbound motorcyclist on Smith Street ran into the rear of a truck waiting at the roundabout. The Police report notes that the rider had suffered heatstroke and their riding abiloity was impaired. The crash resulted in minor injuries;
- Two crashes have occurred on Williams Street:
    - One crash occurred around 130m north of Beach Road, when the driver suffered a medical event, left the road and crashed into a fence. The crash resulted in serious injuries;
    - One crash occurred just south of the Coups Terrace intersection, when a driver attempted a u-turn but had insufficient road width available. Upon undertaking a short reverse movement, the driver over-accelerated and struck another vehicle. The crash did not result in any injuries;
    - One crash occurred just north of the Coups Terrace intersection, when a motorcyclist left the road and fell off. The police report notes that the rider was highly intoxicated. The crash resulted in minor injuries;
    - One crash occurred just north of the Sims Road intersection, when a northbound driver failed to negotiate a slight curve and left the road. The police report notes that this is possibility a medical event. The crash resulted in minor injuries.
    - One crash occurred 150m south of Magnolia Boulevard, when a pedestrian stepped out in front of a car and was struck. The police report notes that the pedestrian was intoxicated. The crash resulted in serious injuries.
    - One crash occurred when a driver turned right out of the access to the golf club and struck a northbound vehicle on Williams Street. The police report sets out that the driver was on a restricted licence and was emotionally upset having just attended a funeral. The crash did not result in any injuries;
    - One crash occurred near the intersection with Magnolia Boulevard when a driver looked away from the road to locate an item in their vehicle, failed to

negotiate the curve in the road, and struck a southbound motorcyclist. The crash resulted in minor injuries.

- One crash occurred at the Williams Street / Magnolia Boulevard intersection, when a car turned left out of Magnolia Boulevard and struck the trailer of a vehicle that was travelling south on Williams Street. The crash did not result in any injuries;

4.3.3. It is not considered that the historic pattern of crashes indicates any inherent road safety deficiencies in the immediate area. Of the 15 crashes, 3 involved driver intoxication, 3 involved medical incidents, and 2 involved unlawful activities by the driver. Drivers failing to pay attention to the road conditions was a factor in a further 2 crashes. Overall though, all crashes all occurred with different contributing factors and in different locations, with no indication of any concerns with road geometries or design.

5. Proposal

5.1. The proposal is for the rezoning of the two sites to MDRZ.

5.2. Information has been received that the South Block could accommodate a theoretical maximum of 144-168 residences but that taking into account the illustrative masterplans produced thus far, the yield is more likely to be 96-144 residences. The North Block could accommodate a theoretical maximum of 904-1,055 residences but that taking into account the illustrative masterplans produced thus far, the yield is more likely to be 600-900 residences.

5.3. As the proposal is for a rezoning, there are no confirmed subdivision plans at this stage. However the PDP requires proposals to have an Outline Development Plan (**ODP**) and this is shown below.

Figure 7: Outline Development Plan for North Block (Extract from Saddleback Planning Limited Drawing)

Figure 8: Outline Development Plan for South Block (Extract from Saddleback Planning Limited Drawing)

5.4. From a transportation perspective, the key feature of the North Block is the main spine road through the development which connects the northern end of McGarry Drive to the eastern end of Magnolia Boulevard. A further roading link connects to the northern end of Isa Lei Road. Tow connections run northwards to support possible further development at some point in future (note that this possible development is not addressed in this report).

5.5. The South Block has two connections shown, one to Beach Road to the south and the other to the partially formed legal road.

5.6. Although the submission process does not require it, the submitter has devised possible masterplans for the two sites. These are shown below. Note that the submission process only requires the provision of an ODP and so the masterplans are indicative/illustrative only.

Figure 9: Illustrative Masterplan for North Block (Extract from Woods Drawing)

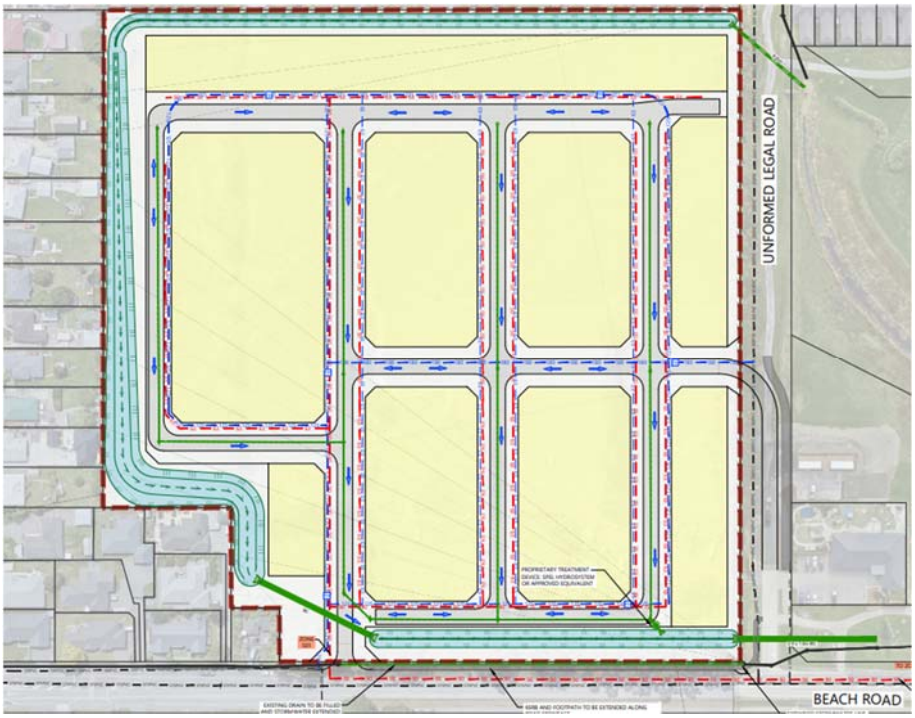


Figure 10: Illustrative Masterplan for South Block (Extract from Woods Drawing)

6. Traffic Generation and Distribution

6.1. Traffic Generation

6.1.1. Traffic generated by residential developments is known to vary for a variety of reasons, with one such reason being the proximity (or otherwise) to employment and community facilities. Where a dwelling is some distance from these types of facilities, the traffic generation rates tend to be lower than for residences that are closer due to 'trip chaining', that is, the tendency of a resident to carry out multiple visits to different destinations during the same trip away from the dwelling.

6.1.2. In this case, it is likely that traffic will be associated with employment locations in Kaiapoi, Rangiora or further afield in Christchurch, and with schools that also lie towards the west of the sites.

6.1.3. A recent (but unpublished) addendum to the traffic generation database shows that in the peak hours, the typical traffic generation rate for low density residential developments (with an example given of single dwellings) is 0.9 vehicle movements per residence. Medium density residential developments (with an example given of attached housing) has a rate of 0.5 vehicle movements per residence in the peak hours.

6.1.4. In this case, notwithstanding that the requested zoning is for medium density housing, duplex (ie attached) housing is not likely. Accordingly, the rate for single houses has been used, of 0.9 vehicle movements in the peak hours.

6.1.5. That said, the North Block makes provision for an area of mixed use activities. Based on experience of other subdivisions, this will typically include small-scale commercial activities that would reduce the need for travel. A reduction of 5% in the North Block traffic generation has been allowed for this. The reduction has also been applied to traffic associated with the Beach Grove subdivision also, since the North Block connects to this.

6.1.6. In the morning peak hour, 80% of the generated vehicles are likely to be exiting the sites, with 65% of the generated vehicle movements entering the sites in the evening peak hour (maintaining consistency with previous analyses for Beach Grove).

6.1.7. In respect of the yield of the sites, it is understood that the submitter considers it unlikely that the theoretical maximum yield will be attained. From a practical perspective, traffic modelling does not generally assume that all land will be developed to the maximum extent that is permissible under its zoning, but rather a more complex assessment is carried out based on supply and demand. Such a calculation is not within the scope of this assessment

6.1.8. Accordingly, for the purposes of assessing the submission, two scenarios have been considered:

- Minimum yield: South Block 100 residences / North Block 600 residences;
- Maximum practical yield: South Block 145 residences / North Block 900 residences;

6.2. Trip Distribution

6.2.1. With regard to the distribution of these vehicles, it is anticipated that the vast majority will be associated with travel to/from Kaiapoi, Rangiora or Christchurch. An allowance has been made for 95% of traffic to travel towards the west of both sites, with the generated traffic distributed

in accordance with the prevailing patterns for the existing residences at Magnolia Boulevard and Beach Grove.

6.2.2. Two particular issues arise with residences within the North Block, Firstly, these residents are able to use two routes through Beach Grove (Isa Lei Road and Tuhoe Drive, or McGarry Drive). Given that the route via McGarry Drive is longer, it is likely that the majority of vehicles will use Tuhoe Drive. For the purposes of this analysis, it has been assumed that all traffic will use this route (as this also produces a 'worst case' assessment for this intersection).

6.2.3. The second matter is that for many residents, they will have a choice between travelling via Magnolia Boulevard or through Beach Grove. In large part, this depends on the travel time, which is a function of both journey distance and the speeds that can be achieved (with the latter also being influenced by the need to slow down, wait and turn at intersections).

6.2.4. From the northwestern site boundary to the Williams Street / Beach Road / Smith Street roundabout, a route via Magnolia Boulevard and Williams Street involves only one intersection, where traffic only has to turn across one traffic lane. From the southern boundary of the North Block, a route via Beach Grove involves turning at two intersections and in the morning, a turn across two traffic lanes at Beach Road. However the route via Magnolia Boulevard is 20% longer than via Beach Road.

6.2.5. Taking into account travel speeds and distance, our assessment shows that the travel time from the northwestern boundary to the Williams Street / Beach Road / Smith Street roundabout is around 3-4 seconds slower than the route from the southern boundary to the roundabout. This suggests a slight bias towards the Beach Road route.

6.2.6. An assessment of the roading distances proposed masterplan suggests that traffic towards the west of the North Block will typically find it faster to travel via Magnolia Boulevard and traffic towards the centre and east of the North Block will find Isa Lei Road to be the quicker route.

Figure 11: Isochrone and Direction of Traffic within Illustrative Masterplan for North Block (Extract from Woods Drawing)

6.2.7. The isochrone suggests that around 70% of the North Block would find a route via Beach Grove to be the quickest (although this depends on the exact form of subdivision. For the purposed of assessment, an allowance has therefore been made for 30% of the generated traffic to travel by Magnolia Boulevard and 70% by Beach Road.

6.2.8. This leads to the following additional traffic on the road network:

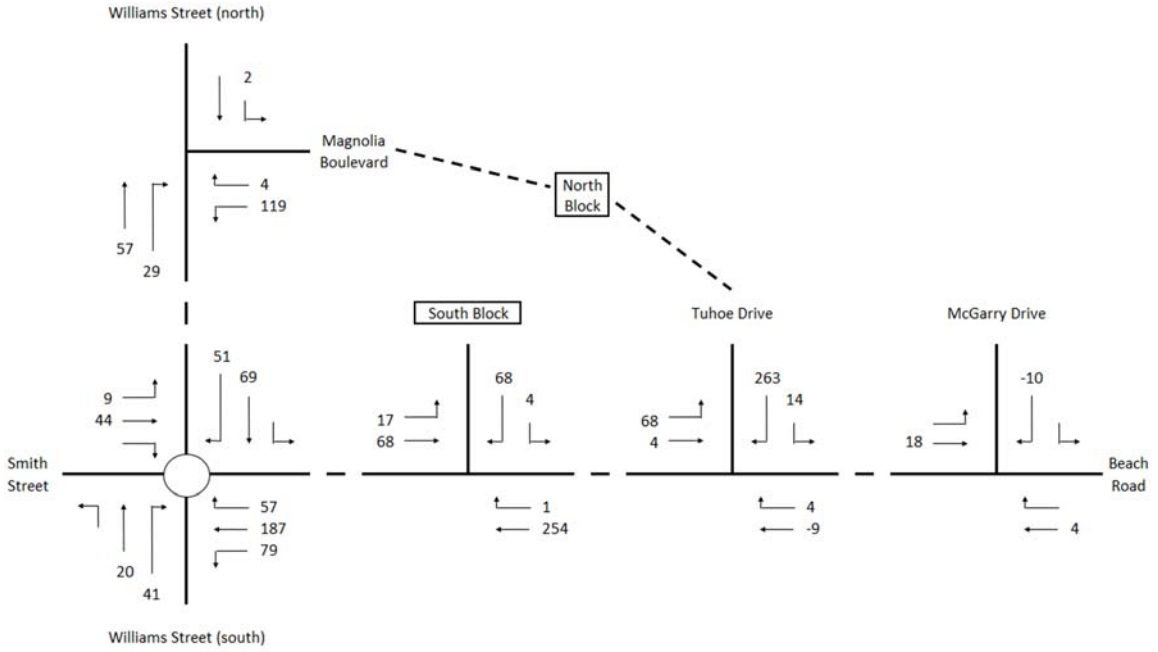


Figure 12: Traffic Generation of Proposed Sites, Morning Peak Hour, Minimum Yield (100 Residences in South Block and 600 Residences in North Block)

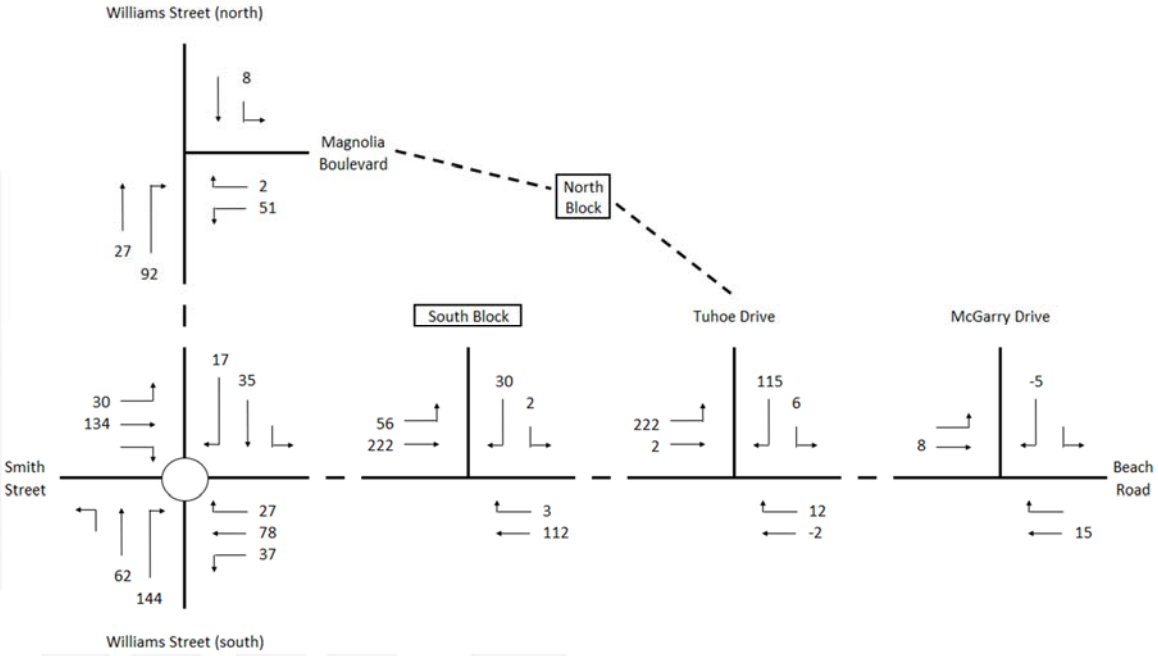


Figure 13: Traffic Generation of Proposed Sites, Evening Peak Hour, Minimum Yield (100 Residences in South Block and 600 Residences in North Block)

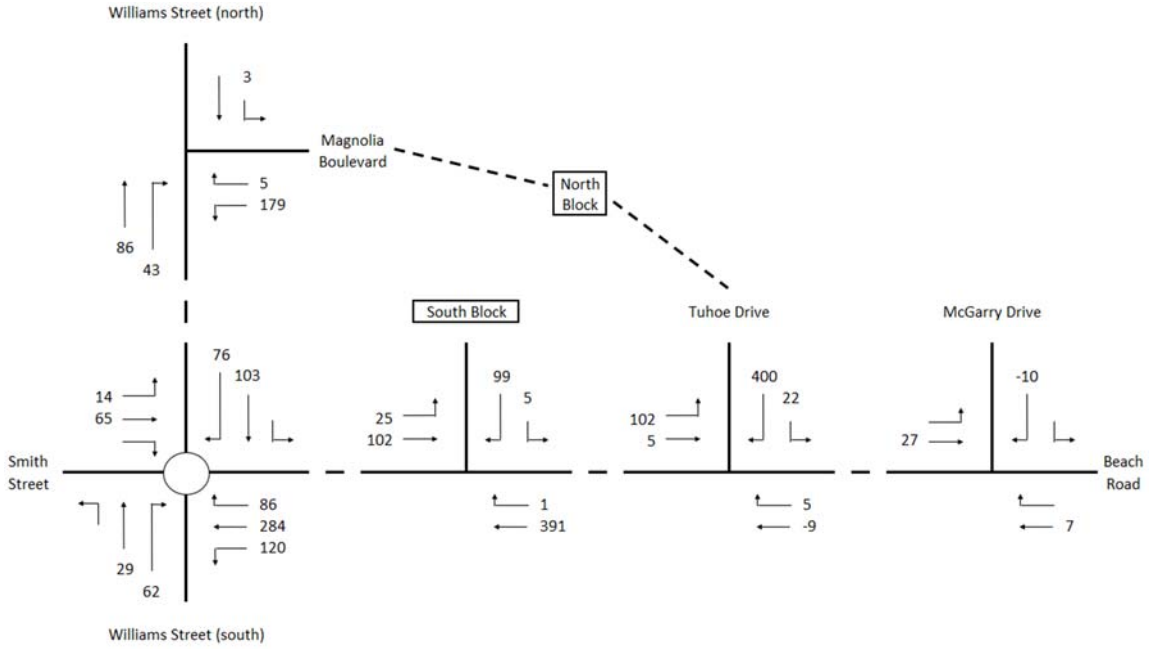


Figure 14: Traffic Generation of Proposed Sites, Morning Peak Hour, Maximum Practical Yield (145 Residences in South Block and 900 Residences in North Block)

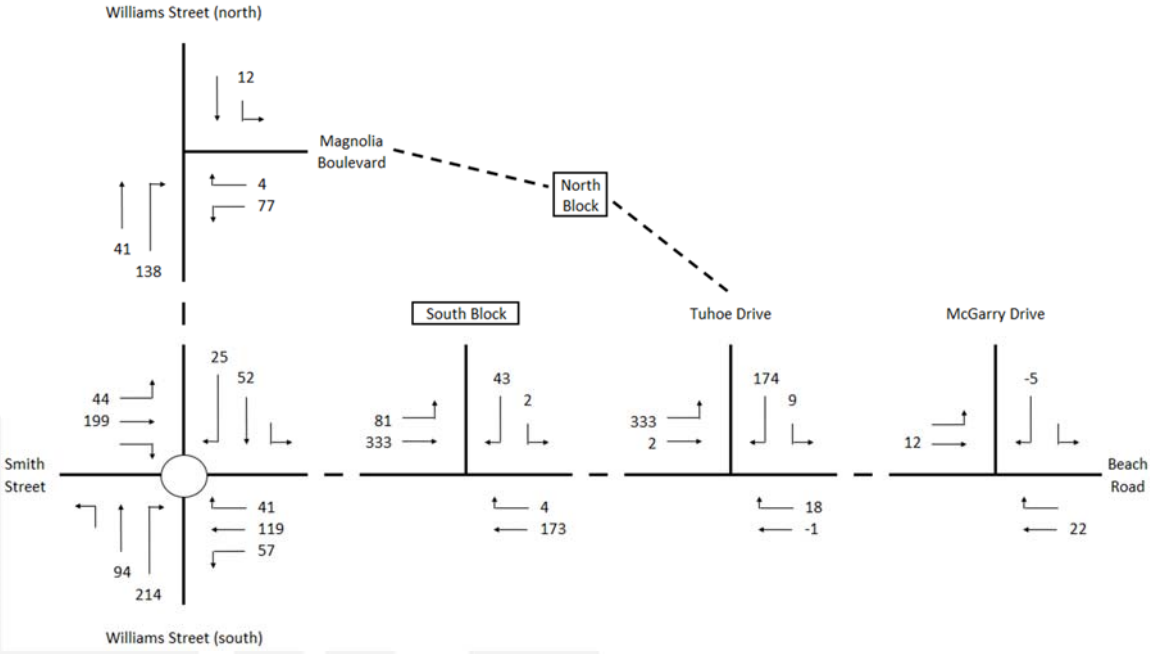


Figure 15: Traffic Generation of Proposed Sites, Evening Peak Hour, Maximum Practical Yield (145 Residences in South Block and 900 Residences in North Block)

7. Effects on the Transportation Networks

7.1. Roading Capacity

7.1.1. As set out above, Williams Street, Beach Road, the un-named road, Tuhoe Avenue and Isa Lei Road have 20m wide legal corridors. This is ample width for any necessary road widening to occur, if needed to provide for the additional traffic flows generated.

7.1.2. Each of the intersections above has been re-assessed using the computer software package Sidra Intersection, and the results are summarised below for the minimum expected yield:

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	L	18	6	B	19	15	B
	T	18	6	B	19	15	B
	R	22	6	C	22	15	C
Beach Road	L	>250	>100	F	8	2	A
	T	>250	>100	F	8	2	A
	R	>250	>100	F	11	2	B
Williams Street (north)	L	10	9	B	22	12	C
	T	10	9	B	22	12	C
	R	13	9	B	26	12	C
Smith Street	L	8	2	A	27	13	C
	T	8	2	A	27	13	C
	R	11	2	B	30	13	C

Table 4: Peak Hour Levels of Service at the Williams Street / Beach Road / Smith Street Roundabout (Minimum Yield)

7.1.3. It can be seen that under this scenario, the roundabout does not have sufficient capacity to accommodate the expected morning peak hour volumes, with long queues and delays developing. However, the legal road at the southeastern quadrant of the roundabout extends considerably more than the formed width, and this enables a minor improvement scheme to be put in place to create a short, second traffic lane on the Beach Grove approach. This increases capacity, because when there is a gap in the circulating traffic, it enables two vehicles to exit Beach Road rather than just one.

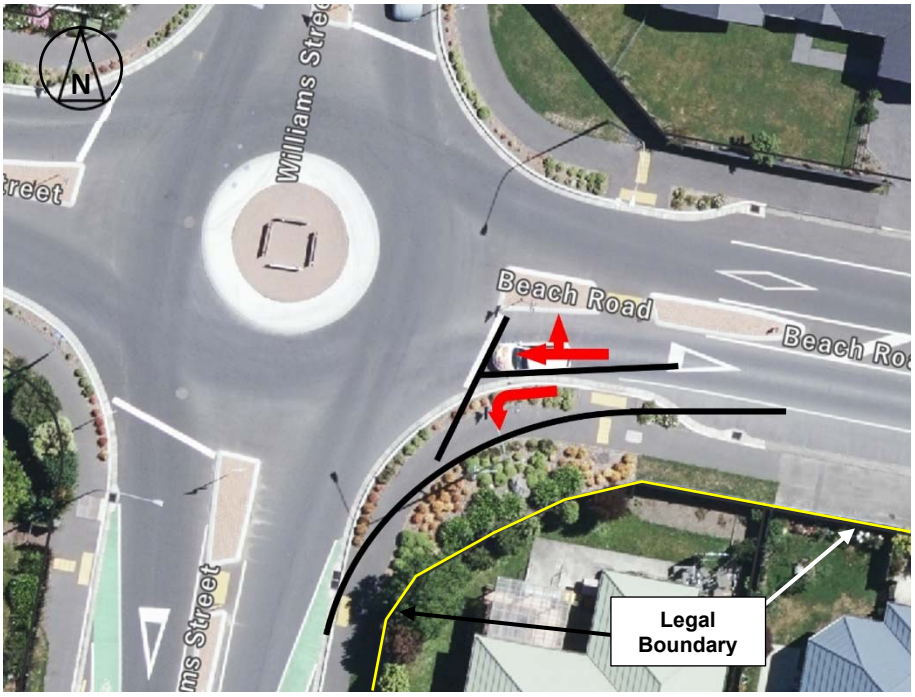


Figure 16: Conceptual Layout for Second Traffic Lane on Beach Road

7.1.4. The roundabout has been retested with this short (approximately 15m long) additional lane, and the results are summarised below.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	L	29	8	C	19	15	B
	T	29	8	C	19	15	B
	R	32	8	C	22	15	C
Beach Road	L	13	2	B	9	1	A
	T	33	19	C	7	1	A
	R	37	19	D	10	1	B
Williams Street (north)	L	10	9	B	22	12	C
	T	10	9	B	22	12	C
	R	13	9	B	26	12	C
Smith Street	L	8	2	A	27	13	C
	T	8	2	A	27	13	C
	R	11	2	B	30	13	C

Table 5: Peak Hour Levels of Service at the Williams Street / Beach Road / Smith Street Roundabout (Minimum Yield, Short Second Lane on Beach Road Approach)

7.1.5. With this short second lane in place, the roundabout continues to provide sufficient capacity.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	R	7	0	A	6	1	A
Magnolia Boulevard	L	8	2	A	6	1	A
	R	12	0	B	13	0	B
Williams Street (north)	L	6	0	A	6	0	A

Table 6: Peak Hour Levels of Service at the Williams Street / Magnolia Boulevard Intersection (Minimum Yield)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Beach Road (east)	R	7	0	A	10	0	A
Tuhoe Drive	L	6	0	A	7	0	A
	R	18	9	C	16	3	C
Beach Road (west)	L	6	0	A	6	0	A

Table 7: Peak Hour Levels of Service at the Beach Road / Tuhoe Drive Intersection (Minimum Yield)

7.1.6. It can be seen that the two priority intersections continue to operate with a good level of service and small queues and delays, without any need for improvements.

7.1.7. The intersections have then been re-assessed with the maximum practical yield.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	L	35	11	D	71	47	F
	T	35	11	D	71	47	F
	R	38	11	D	74	47	F
Beach Road	L	15	3	B	9	1	A
	T	>250	>100	F	7	2	A
	R	>250	>100	F	11	2	B
Williams Street (north)	L	15	13	B	47	23	D
	T	15	13	B	46	23	D
	R	18	13	B	50	23	D
Smith Street	L	8	2	A	>150	65	F
	T	8	2	A	>150	65	F
	R	11	2	B	>150	65	F

Table 8: Peak Hour Levels of Service at the Williams Street / Beach Road / Smith Street Roundabout (Maximum Practical Yield, Short Second Lane on Beach Road Approach)

7.1.8. It can be seen that under this scenario, the roundabout does not have sufficient capacity to accommodate the expected peak hour volumes, with long queues and delays developing. Accordingly, an assessment has been undertaken of signalising the intersection.

7.1.9. Although a detailed design has not been developed, it is noted that the legal widths of the roads is 20m. By way of just one example, these are the same widths present at the Glandovey Road / Idris Road intersection in Christchurch, which was converted from a small urban roundabout to traffic signals in 2014.

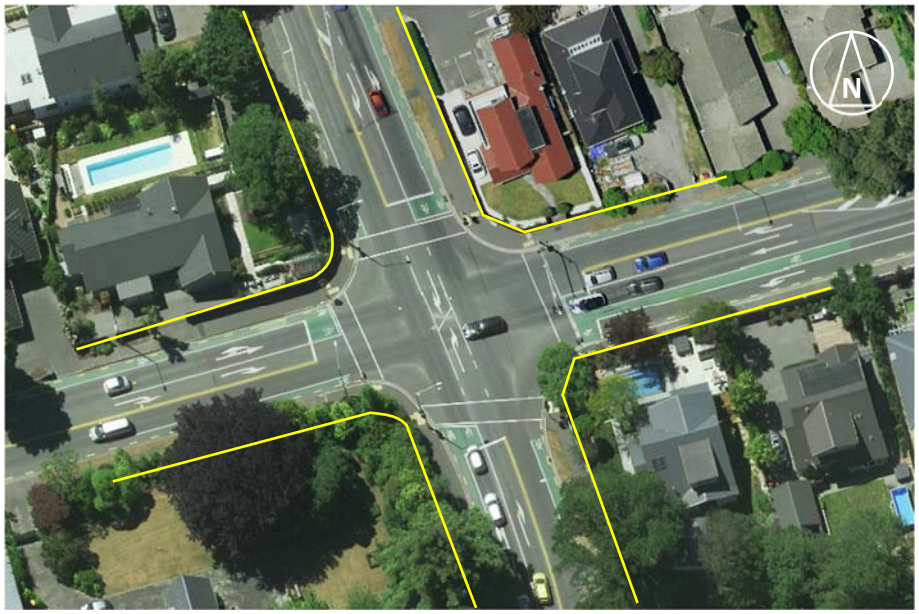


Figure 17: Glandovey Road / Idris Road Traffic Signals, Plus Property Boundaries

7.1.10. Moreover, the situation is comparable in that:

- The separation across the intersection (diametrically) is similar to that at the Williams Street / Beach Road / Smith Street;
- The intersection is within a residential area, with private driveways on the approaches and departure lanes;
- A survey in 2022 showed that in the weekday peak hours, the intersection carried 2,380 to 2,544 vehicles. In the case of the Williams Street / Beach Road /Smith Street intersection, the expected volumes at full development are 2,160 to 2,220 vehicles, around 10% less.

7.1.11. It is therefore considered that a traffic signal solution is both viable and able to be accommodated within the surrounding environment.

7.1.12. For the purposes of assessment, a notional layout with a 35m long right-turn lane on each approach has been tested, with a 60-second cycle time. This configuration has been modelled using the computer software Sidra Intersection and the results are summarised below.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	L	23	4	C	16	8	B
	T	17	4	B	10	8	B
	R	38	5	D	54	18	D
Beach Road	L	37	26	D	25	7	C
	T	31	26	C	19	7	B
	R	19	4	B	40	2	D
Williams Street (north)	L	36	15	D	16	7	B
	T	31	15	C	10	7	A
	R	39	11	D	23	6	C
Smith Street	L	15	4	B	55	24	D
	T	10	4	A	49	24	D
	R	28	1	C	29	1	C

Table 9: Peak Hour Levels of Service at the Williams Street / Beach Road / Smith Street Traffic Signals (Maximum Practical Yield)

7.1.13. With the intersection signalised, and the provision of an additional right-turn lane on each approach, the intersection continues to provide sufficient capacity for the practical maximum development of the site.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Williams Street (south)	R	7	1	A	6	1	A
Magnolia Boulevard	L	9	3	A	6	1	A
	R	12	0	B	14	0	B
Williams Street (north)	L	6	0	A	6	0	A

Table 10: Peak Hour Levels of Service at the Williams Street / Magnolia Boulevard Intersection (Maximum Practical Yield)

7.1.14. It can be seen that the Williams Street / Magnolia Boulevard intersection continues to operate with a good level of service and small queues and delays, without any need for improvements.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Beach Road (east)	R	7	0	A	12	1	A
Tuhoe Drive	L	6	0	A	7	0	B
	R	68	37	F	23	5	C
Beach Road (west)	L	6	0	A	6	0	A

Table 11: Peak Hour Levels of Service at the Beach Road / Tuhoe Drive Intersection (Maximum Practical Yield)

7.1.15. With regard to the Beach Road / Tuhoe Drive intersection, right-turning vehicles exiting Beach Grove would experience substantial queuing and delays in the morning peak hour. However a sensitivity test (not reported) showed that a reduction of just 21 right-turning vehicles (equivalent to a reduction in maximum yield of 23 residences) would be sufficient to reduce the delays such that Level of Service E was provided. A total reduction of 48 right-turning vehicles (equivalent to a reduction in maximum yield of 53 residences) would be sufficient to reduce the delays such that Level of Service D was provided.

7.1.16. It is also noted that in practice and depending on the road configurations within the North Block, masterplan, there may be slightly fewer vehicles using Tuhoe Drive in favour of using Magnolia Boulevard instead.

7.1.17. On this basis, it can be concluded that:

- For the minimum yield arising from development of the North and South Blocks:
  - The Williams Street / Beach Road / Smith Street roundabout does not have the available capacity under its current configuration but a relatively simple improvement scheme can be carried out within the legal road width that means that the roundabout has sufficient capacity;
  - The existing layouts of the Williams Street / Magnolia Boulevard and Beach Road / Tuhoe Drive intersections have sufficient capacity to accommodate demand.
- For the maximum practical yield arising from development of the North and South Blocks:
  - The Williams Street / Beach Road / Smith Street roundabout does not have the available capacity even with improvement. However the introduction of traffic signals means that the intersection has sufficient capacity;
  - The existing layout of the Williams Street / Magnolia Boulevard has sufficient capacity to accommodate demand.
  - The existing layout of the Beach Road / Tuhoe Drive intersection does not quite have sufficient capacity to accommodate demand in the morning peak hour. However only a small difference in yield (54 residences) is sufficient to improve the Level of Service to an acceptable level.

7.1.18. Accordingly, the intersection analysis shows that although improvement schemes are required, the improved geometries are generally able to accommodate demand. The exception to this is the Beach Road / Tuhoe Drive intersection in the morning peak hour, but the difference between Level of Service D (acceptable) and Level of Service F (unacceptable) is very small.

7.1.19. From a practical perspective, it is noted that Rule TRAN-R20 of the PDP means that where a residential development generates more than 200 vehicle movements per day (equivalent to just 25 residence), then it is a Restricted Discretionary Activity and as assessment of transportation effects is required. It is considered that this Rule provides certainty that the intersection improvements discussed above will be implemented, and that if no improvement scheme is possible, consents can be declined.

7.2. Non-Car Modes of Travel

7.2.1. The development of the sites is likely to result in increased levels of walking and cycling in the immediate area. However, the existing frontage roads have suitable provision for walking trips, and as noted below, the internal roads are able to meet the requirements of the PDP and this includes a suitable level of provision for walking.

7.2.2. Wirth regard to cycling, as noted above there is an existing deficiency on Williams Street as cycle lanes should be provided but are not. Otherwise though, the roading network has sufficient width such that cycle lanes can be provided (and again, within the site, the PDP assures a suitable level of provision).

7.2.3. In passing, the indicative masterplan shows that a range of road types can be considered for the sites. Since only an ODP is required at this stage, if roads of a type not contemplated in the PDP are proposed in future, then these can be considered at the time that land use / subdivision consents are sought.

7.2.4. It is typically accepted that people will walk a maximum of 1km to reach a particular destination, and will cycle a maximum distance of 3km. In this regard, Kaiapoi North School lies within 1km of both sites and is connected to them via the unformed legal roads. It is therefore a walkable distance for students. The site also provides a small mixed-use area where commercial activities may establish, and this is also within 1km of all of the North Block, most of the South Block and all of the existing Beach Grove subdivision. Both sites are also within 1km of the existing pre-school.

7.2.5. Kaiapoi town centre lies within 3km of both potential sites, and is therefore within a viable cycling distance.

7.2.6. Accordingly, it is considered that the sites are well-located for accessibility to key community facilities in the area..

7.2.7. The existing public transport network in Kaiapoi is limited, but the size of the North Block means that if developed to its full extent (900 residence), a public transport service may be justified. The ODP shows a high degree of roading connectivity with a through route within the site meaning that ‘dead running’ of services will not be required. The road widths and formations can be devised to accommodate a bus service if appropriate, particularly along the key spine routes within the block. Again, this is a matter for consideration when land use and subdivision consents are sought.

7.3. Road Safety

7.3.1. Based on a review of the road safety records, the proposal is unlikely to result in adverse road safety effects arising as a result of the increase in traffic flows on the road network.

7.3.2. One aspect of road safety relates to ensuring that the intersections have the appropriate generalised layout. The connections to external roading links are discussed above in respect

of capacity, but in respect of road safety, the legal road widths and alignments of carriageways means that there are no reasons why designs that meet relevant guides and standards could not be achieved where intersection improvements are required. The flat and generally straight alignment of the roads also means that sight distances are excellent.

7.3.3. Within the sites, the relatively flat topography means that there are no reasons why the internal roading networks could not meet appropriate designs guides and standards.

8. District Plan

8.1. Introduction

8.1.1. The District Plan sets out a number of transportation-related rules with which any development is expected to comply. Although the proposal is for a rezoning, consideration of these rules is important at this stage in order to identify whether there are any likely non-compliances within the ODP or impediments to a complying subdivision layout in future. Consequently an assessment of the transportation rules has been undertaken and the outcomes are summarised below.

8.2. Proposed District Plan: Transport Rules[5]

8.2.1. TRAN-R3: Formation of a New Road

8.2.1.1. Under this Rule, new roads are to meet Standard TRAN-S1 (design standards for new roads). There are no reasons why the roads within the sites could not comply with the expected cross-sections, although if different widths are proposed, these are more appropriately assessed at the time of land use / subdivision.

8.2.2. TRAN-R4: Formation of a New Road Intersection

8.2.2.1. Under this Rule, new roads are to meet Standard TRAN-S2 (minimum road intersection separation distances). For roads with a 50km/h speed limit, a separation distance of 75m is required (for Local Roads joining to Local Roads) or 125m (for roads higher in the hierarchy).

8.2.2.2. The roads shown in the North Block ODP have a separation of at least 125m other than the separation between the intersection towards the southeast and the existing intersection at the northeastern corner of Beach Grove where 110m is provided. For the South Block, there are no internal roads presently shown due to the small size of the block. However, the point of connection to Beach Road lies only a short distance from Meadow Street.

8.2.2.3. There is no discussion in the District Plan as to why this separation is proposed. For example, the Austroads Guide to Road Design Part 4 ('*Intersections and Crossings – General*') sets out that intersections should be "*desirably*" separated by at least five seconds of travel time at the design speed, as this provides sufficient time for drivers to process information related to traffic, the road layout, and traffic signs. At a design speed of 55km/h (the speed limit plus 10%), this suggests that a separation of 75m is appropriate.

8.2.2.4. Standard NZS4404:2010 ('Land Development and Subdivision Infrastructure') sets out a separation of 150m for intersections where Collector Roads join other Collector Roads should be 150m apart, but no separation distance is given for any intersections involving Local Roads.

8.2.2.5. By way of another example, under the Austroads Guide the distance needed for a driver approaching an intersection, to see a vehicle ahead moving out from a side road and stopping before hitting them, is 110m.

8.2.2.6. On this basis, the proposed intersection separation in the North Block can be supported.

[5] Rules TRAN-R1 and TRAN-R2 are not applicable

8.2.2.7. In respect of the South Block, the proposed road is on the opposite side of Beach Road to Meadow Street (although off-set from it, to avoid forming a crossroads). Given that the minor approaches are on opposite sides of the road, it is highly unlikely that drivers will become confused about where vehicles are turning, and off-set tee intersections are common within urban areas meaning drivers are unlikely to be confused about the layout. Sightlines for drivers are excellent.

8.2.2.8. Assessment Matters (MD-1 and MD20) are not specific for non-compliance with this Rule, as they mention "*safe and efficient access and use*" but also "*Any other relevant assessment matters*". However for the reasons set out above, it is considered that the proposed intersections are located with adequate separation.

8.2.3. TRAN-R5: Formation of a New Vehicle Crossing

8.2.3.1. Under this Rule, new vehicle crossings are to meet Standard TRAN-S3 (design standards for new vehicle crossings). No vehicle crossings are proposed at this stage, but once the sites are subdivided, there is no reason why any lot would have more than one vehicle crossing.

8.2.3.2. Under Table TRAN-17, there is an expected minimum separation distance between any new vehicle crossing and existing intersections. The ODPs show that all lots can be accessed from the proposed internal roads, and at the South Block there is no requirement for any direct vehicle crossings onto Beach Road.

8.2.3.3. The appropriate vehicle crossing widths can be provided.

8.2.3.4. Within the site, there are no reasons why vehicle crossings could not be located to achieve the appropriate sight distances.

8.2.4. TRAN-R6: Formation of a New Vehicle Accessway

8.2.4.1. Under this Rule, new vehicle crossings are to meet Standard TRAN-S4 (design standards for new vehicle accessways). The proposal is for a rezoning, but there are no reasons why compliance with these provisions could not be achieved.

8.2.5. TRAN-R7: Formation of a New Vehicle Accessway on a sealed road where the posted speed limit is 60km/hr or above

8.2.5.1. No roads have a posted speed limit of 60km/h or above.

8.2.6. TRAN-R8: Formation of a new vehicle crossing on a site with frontage to more than one road

8.2.6.1. The proposal is for a rezoning, and so at this stage there are no vehicle crossings proposed. However there are no reasons why compliance with this Rule could not be achieved in future.

8.2.7. TRAN-R9: Provision of accessible car parking spaces

8.2.7.1. The proposal is for a rezoning, and at this stage this Rule is therefore not applicable.

8.2.8. TRAN-S7: Minimum car parking spaces and associated manoeuvring area dimensions

8.2.8.1. The proposal is for a rezoning, and at this stage this Rule is therefore not applicable. However there are no reasons why compliance with the Rule could not be achieved in future.

8.2.9. TRAN-R10: Provision of car parking spaces and associated manoeuvring areas

8.2.9.1. The proposal is for a rezoning, and at this stage this Rule is therefore not applicable. However there are no reasons why compliance with the Rule could not be achieved in future.

8.2.10. TRAN-R11: Provision of loading spaces and associated manoeuvring areas

8.2.10.1. The proposal is for a rezoning, and at this stage this Rule is therefore not applicable. However there are no reasons why compliance with the Rule could not be achieved in future.

8.2.11. TRAN-R12: Formation of parking areas, loading areas, manoeuvring areas, vehicle crossings or accessways

8.2.11.1. The proposal is for a rezoning, and at this stage this Rule is therefore not applicable. However there are no reasons why compliance with the Rule could not be achieved in future.

8.2.12. TRAN-R13: Landscaping of a new car parking area

8.2.12.1. The proposal is for a residential zoning and therefore this Rule is not applicable.

8.2.13. TRAN-R14: Provision of New Footpaths

8.2.13.1. The proposal is for a residential zoning, and there are no reasons why the provision of footpaths could not be achieved as required under this Rule.

8.2.14. TRAN-R15: Provision of New Cycle Parking

8.2.14.1. Cycle parking is not required at residential activity and therefore this Rule is not applicable.

8.2.15. TRAN-R16: Provision of Cycling End-of-Trip Facilities for Staff

8.2.15.1. Cycle parking is not required at residential activity and therefore this Rule is not applicable.

8.2.16. TRAN-R17: Installation of new charging facilities for electric vehicles

8.2.16.1. The proposal is for a zoning of land and therefore this Rule is not applicable.

8.2.17. TRAN-R18: Provision of a parking area or loading area and associated manoeuvring area on a site with frontage to a Principal Shopping Street in Oxford

8.2.17.1. The sites do not have frontage onto the Principal Shopping Street in Oxford.

8.2.18. TRAN-R19: Provision of a parking area or loading area and associated manoeuvring area on a site with frontage to a Principal Shopping Street in Rangiora or Kaiapoi

8.2.18.1. The sites do not have frontage onto a Principal Shopping Street.

8.2.19. TRAN-R20: High Traffic Generators

8.2.19.1. Under this Rule, any activity that generates more than 200 vehicle movements per day is a High Traffic Generator, for which a Transportation Assessment is required. This report responds to this issue in part, although it is noted that the Rule still means that further assessment is required when land use / subdivision consents are sought.

8.2.20. TRAN-R21: Activities Adjacent to a Road/Rail Level Crossing

8.2.20.1. The sites are not proximate to a level crossing.

8.2.21. TRAN-R22: Installation of a new stock underpass beneath a road corridor or rail corridor

8.2.21.1. The proposal does not involve a stock underpass.

8.2.22. TRAN-R23: Rangiora Airfield

8.2.22.1. The sites are not proximate to the airfield.

8.3. Summary of Proposed District Plan Assessment

8.3.1. Based on the review above, the proposed ODPs have one ng non-compliance with the PDP:

- TRAN-R4: Formation of a New Road Intersection
  - There is a requirement for a separation of 75-125m separation between intersections but this is not achieved in two locations. However the separation for the proposed intersections can be supported based on a first principles assessment.

8.3.2. Overall, it is not considered that this non-compliance will give rise to any adverse roading efficiency or road safety effects.

8.3.3. In passing, the indicative masterplans show arrangements where additional non-compliances could arise, such as the separation of driveways and intersections. However it is highlighted that the masterplans are indicative only, and subject to change in future. As such, potential non-compliances may be 'designed out'. Moreover, if non-compliances are proposed in future, these are appropriately assessed at the time that land use / subdivision consents are sought.

9. Conclusions

9.1. This report has identified, evaluated and assessed the various transport and access elements of a requested rezoning of two parcels of land (known as the North Block and South Block) in Kaiapoi to Medium Density Residential Zone. The information provided shows that in practice, the North Block is capable of 600-900 lots with the South Block able to accommodate 100-145 lots.

9.2. Overall it is considered that the traffic generated by the development of the sites can be accommodated on the adjacent roading network, although improvement schemes will be required at the Williams Street / Beach Road / Smith Street roundabout. While detailed designs are beyond the scope of the submission, an indicative assessment shows that such improvement schemes can be accommodated within the legal road reserve.

9.3. A minor scheme may also be required at the Beach Road / Tuhoe Drive intersection, although this also depends on whether the full expected yield of the North Block is achieved.

9.4. The crash history in the vicinity of the sites does not indicate that there would be any adverse safety effects from the proposal.

9.5. Appropriate provision can be made for non-car modes of travel. The school, preschool and mixed-use area are within a 1km walking distance, with Kaiapoi town centre located within a viable cycle ride of less than 3km.

9.6. The ODP shows there will be a high degree of compliance with the transportation requirements of the Proposed District Plans, and the only non-compliance is in respect of the intersection separation. However a first principles assessment shows that an appropriate separation distance is provided.

9.7. In passing, the indicative masterplans show arrangements where additional non-compliances could arise, such as the separation of driveways and intersections. However the masterplans are indicative only and subject to change in future. As such, potential non-compliances may be ‘designed out’, but if remaining, are appropriately assessed at the time that land use / subdivision consents are sought.

9.8. Overall, and subject to the preceding comments, the requested rezoning can be supported from a traffic and transportation perspective and it is considered that there are no traffic and transportation reasons why the zoning is inappropriate in this location.

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