ASHBOURNE DEVELOPMENT

Integrated Transportation Assessment

9 July 2025

commute
TRANSPORTATION CONSULTANTS

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1 Introduction

Commute Transportation Consultants (Commute) has been engaged by Unity Developments to prepare an Integrated Transport Assessment (ITA) for a Fast Track Proposal to provide for a comprehensive development proposal in Matamata (referred to as Ashbourne).

The proposal seeks to provide a multiuse development with four key precincts providing for a range activities including residential dwellings, a retirement village, small commercial node and two areas of solar farms.

Included in this development are the following activities:

- 518 residential dwellings,
- Two residential lifestyle blocks;
- A 0.75ha area of commercial activities (Commercial Node),
- A retirement village of approximately 218 units and 71 care beds; and
- Approximately 27 ha of solar farm activities in two areas.

To enable commercial flexibility, two options are proposed for the 'Commercial Node'. Option A enables the establishment of up to seven commercial units with a combined gross floor area of 1,876m2 and an associated 51 carparking spaces. Option B enables the establishment of 18 residential units and associated access. Option B has been assessed separately in this report and is provided in Section 9.

The site includes a number of development stages, and various activities proposed to be progressively provided on the site as part of a comprehensive development plan.

1.1 Documentation

This assessment has been prepared by Michelle Seymour.

Michelle Seymour is a Principal Transport Planner with Commute Transportation. Michelle has over 15 years of practical traffic engineering and transport planning experience. Having experience in both the private and public sector, has a wide range of experience including Integrated Transport Assessments for large scale plan changes, notice of requirements, and resource consent applications.

Michelle has a BA/BCOM in Geography, and a Master of Engineering Studies in Transportation. She is a Full Member of New Zealand Planning Institute (MNZPI).

2 Existing Environment

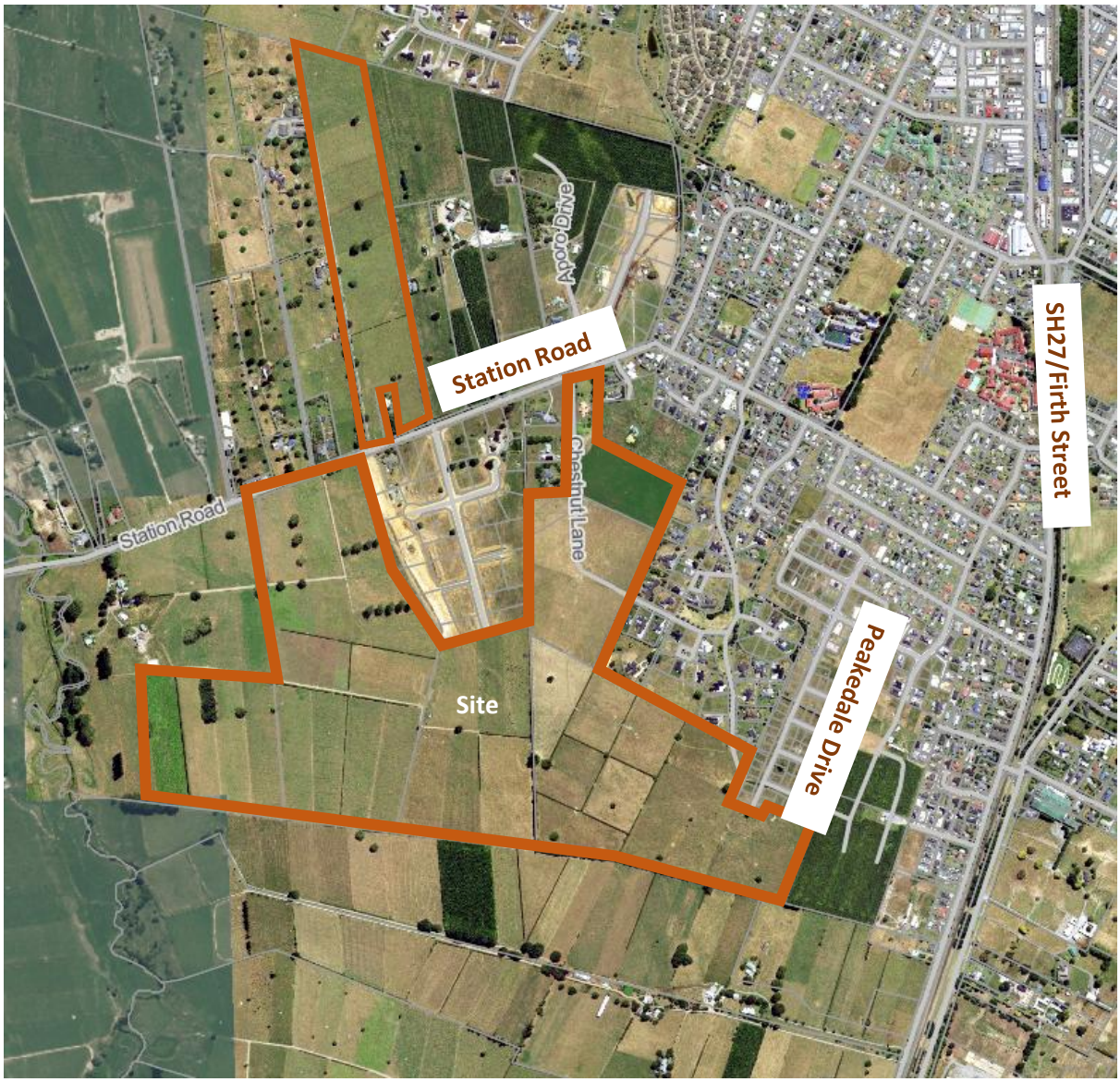
2.1 Development Location

Matamata is located in central Waikato, within the Matamata - Piako District. It is approximately two hours from Auckland, 55 mins from Hamilton, 45 mins from Tauranga and 55 mins from Rotorua.

Within Matamata, the site is located 2.5km to the west of the town centre (as a straight line, from the centre of the site), and is located adjacent to Station Road. The site connects to recently completed subdivisions to the east at Peakedale Drive.

Figure 2-1 shows the location of the site within Matamata.

Figure 2-1: Site Location and Context



As shown above, the surrounding area includes a mix of rural farmland and recently developed residential properties.

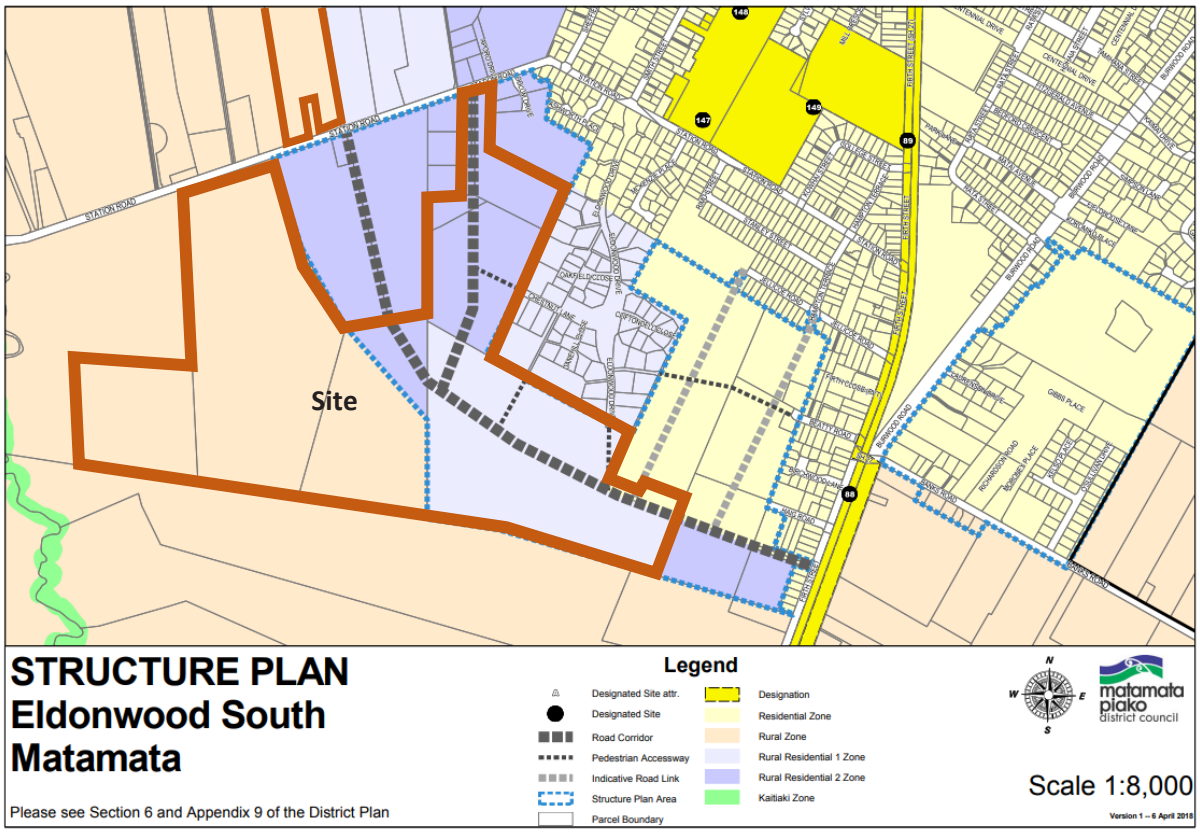
The site is proposed to have three connections to the existing road network, with two new intersections on Station Road and a connection to Peakedale Drive in the south.

2.2 Eldonwood Structure Plan

The site of the development proposal overlaps with the Eldonwood Structure Plan as shown in the Matamata Piako District Plan. This Structure Plan is shown below in Figure 2-2. As shown, there is a general expectation that the area immediately adjacent to the existing residential areas, will shift to rural residential, with road corridor spine travelling from SH27 through to Station Road.

The site is currently zoned a mix of Rural Residential 1, Rural Residential 2 and Rural zone.

Figure 2-2: Structure Plan: Eldonwood



3 Existing Transport Data

3.1 Existing Road Layout

The proposed development is located to the southwest of the current urban area of Matamata. The site adjoins the existing road network at several key locations, including Station Road via new road connections in two locations and Peakedale Drive at the existing terminus.

3.1.1 Station Road

Station Road is classified as a Collector Road within the Matamata Piako District Plan (MPDP)[1]. The existing road reserve is 20.0 m wide, with a sealed width of 7.0 m, accommodating one traffic lane in each direction. Adjacent to the site, there are no footpaths or cycle provisions on Station Road, which is commensurate with the existing rural nature of the corridor.

Station Road has a posted speed limit of 50 km per hour at the most eastern extent, increasing to 80km per hour at Odlum Drive, and increasing to 100km per hour at 200 Station Road.

Station Road in proximity to the intersection of Highgrove Avenue currently carries in the region of 620[2] vehicles per day (five-day ADT).

. . . . . .

[1] Section 9.1.1

[2] Tube Traffic counts completed week of 18 March 2024.

Figure 3-1: Station Road looking east

Figure 3-2: Station Road looking west

3.1.2 Firth Street

Firth Street is classified as a State Highway in the Matamata Piako District Plan (SH27). The corridor is approximately 21.5m wide with a 12.5m carriageway. A 1.5m footpath is provided on the western side, and a railway line is located on the eastern side of the corridor. The corridor includes two traffic lanes, and a flush median which provides for right turn bays along the corridor.

The posted speed limit varies on this corridor, with the speed in the vicinity of the site ranging from 50km/hr to 100km/hr as per the following:

- 50km/hr north of Jellicoe Road
- 70km/hr between Jellicoe Road and 229 Firth Street
- 100km/hr south of 229 Firth Street

Figure 3-3: Firth Street (SH27) looking north

3.1.3 Peakedale Drive

Peakedale Road, is not identified within the Matamata Piako District Plan as a significant, arterial or collector road and is therefore classified as a local road. This corridor is approximately 20m wide, with a sealed carriageway of approximately 10m. The road also provides for 1.5m wide footpaths on both sides.

Figure 3-4: Peakedale Drive looking south

3.2 Traffic Volumes

Intersection counts have been completed for the several key intersections including:

- Intersection of Jellicoe Road and Firth Street (SH27)

- This intersection is currently give way controlled, with priority to Firth Street, and a flush median and right turn bay provided on Firth Street.

- Intersection of Station Road and Firth Street (SH27)
  - This intersection is currently stop controlled with priority to Firth Street, and a flush median and right turn bay provided on Firth Street.

Intersections counts were completed on 14 March 2024 and are summarised in the figures below.

Figure 3-5: Turning Movement Vehicle volumes at Station Road and Firth Street (SH27)

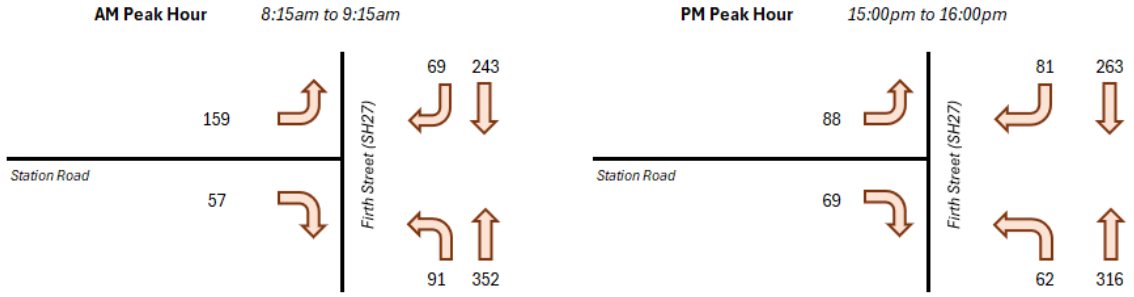
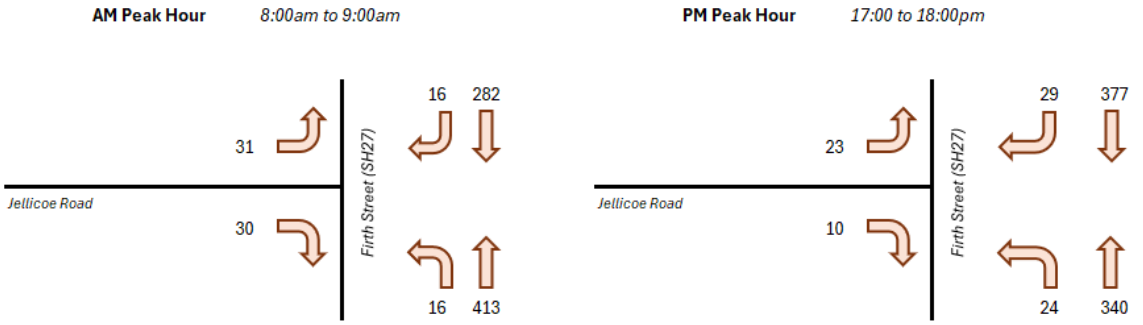


Figure 3-6: Turning Movement Vehicle Volumes at Jellicoe Road and Firth Street (SH27)



As shown above the peak hour of the Station Road and Firth Street intersection occurs slightly later than the Jellicoe Street intersection, and in the case of the afternoon peak this occurs much earlier. This is likely due to the closer proximity of Station Road to two schools, including Firth Primary School and Matamata College. The overall peak hours of the network nearby were found to be 8:00-9:00AM and 3:00-4:00PM.

3.3 Existing Intersection Performance

The existing performance of the intersections of Firth Street with Station Road and Firth Street with Jellicoe Road have been modelling utilising SIDRA. The movement summary for these intersections in the morning peak and evening peak are shown in the figures below. As can be seen, both intersections currently operate well with limited delay.

Figure 3-7: Morning Peak Period - Station Road and Firth Street (08:15 – 09:15)

MOVEMENT SUMMARY

▽ Site: 101 [AM Peak Station Road and Firth Street (SH27) (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Firth Street (SH27)														
1	L2	91	3	96	3.3	0.259	4.7	LOS A	0.0	0.0	0.00	0.11	0.00	48.7
2	T1	352	47	371	13.4	0.259	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	49.2
Approach		443	50	466	11.3	0.259	1.0	NA	0.0	0.0	0.00	0.11	0.00	49.1
North: Firth Street (SH27)														
8	T1	243	40	256	16.5	0.146	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	69	2	73	2.9	0.068	6.6	LOS A	0.3	2.0	0.50	0.67	0.50	45.0
Approach		312	42	328	13.5	0.146	1.5	NA	0.3	2.0	0.11	0.15	0.11	48.8
West: Station Road														
10	L2	159	8	167	5.0	0.310	6.7	LOS A	1.4	10.5	0.57	0.77	0.64	44.2
12	R2	57	6	60	10.5	0.310	14.7	LOS B	1.4	10.5	0.57	0.77	0.64	43.7
Approach		216	14	227	6.5	0.310	8.8	LOS A	1.4	10.5	0.57	0.77	0.64	44.1
All Vehicles		971	106	1022	10.9	0.310	2.9	NA	1.4	10.5	0.16	0.27	0.18	47.8

Figure 3-8: Afternoon Peak Period - Station Road and Firth Street (15:00 – 16:00)

MOVEMENT SUMMARY

▽ Site: 101 [PM Peak Station Road and Firth Street (SH27) (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Firth Street (SH27)														
1	L2	62	3	65	4.8	0.220	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.1
2	T1	316	38	333	12.0	0.220	0.1	LOS A	0.0	0.0	0.00	0.09	0.00	49.4
Approach		378	41	398	10.8	0.220	0.8	NA	0.0	0.0	0.00	0.09	0.00	49.1
North: Firth Street (SH27)														
8	T1	263	35	277	13.3	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	81	7	85	8.6	0.077	6.4	LOS A	0.3	2.4	0.47	0.64	0.47	44.6
Approach		344	42	362	12.2	0.154	1.5	NA	0.3	2.4	0.11	0.15	0.11	48.6
West: Station Road														
10	L2	88	6	93	6.8	0.272	6.4	LOS A	1.2	8.7	0.61	0.77	0.67	43.0
12	R2	69	8	73	11.6	0.272	14.4	LOS B	1.2	8.7	0.61	0.77	0.67	42.8
Approach		157	14	165	8.9	0.272	10.0	LOS A	1.2	8.7	0.61	0.77	0.67	42.9
All Vehicles		879	97	925	11.0	0.272	2.7	NA	1.2	8.7	0.15	0.23	0.16	47.7

Figure 3-9: Morning Peak Period - Jellicoe Road and Firth Street (08:00 – 09:00)

MOVEMENT SUMMARY

Site: 101 [AM Peak Jellicoe Road and Firth Street (SH27) (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Firth Street (SH27)														
1	L2	15	2	16	13.3	0.249	4.8	LOS A	0.0	0.0	0.00	0.02	0.00	48.3
2	T1	413	47	435	11.4	0.249	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	49.8
Approach		428	49	451	11.4	0.249	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
North: Firth Street (SH27)														
8	T1	282	48	297	17.0	0.169	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	16	0	17	0.0	0.015	6.3	LOS A	0.1	0.4	0.48	0.60	0.48	44.8
Approach		298	48	314	16.1	0.169	0.4	NA	0.1	0.4	0.03	0.03	0.03	49.6
West: Jellicoe Road														
10	L2	31	0	33	0.0	0.107	6.3	LOS A	0.4	2.7	0.59	0.76	0.59	43.4
12	R2	30	0	32	0.0	0.107	12.1	LOS B	0.4	2.7	0.59	0.76	0.59	43.4
Approach		61	0	64	0.0	0.107	9.2	LOS A	0.4	2.7	0.59	0.76	0.59	43.4
All Vehicles		787	97	828	12.3	0.249	1.0	NA	0.4	2.7	0.06	0.08	0.06	49.1

Figure 3-10: Afternoon Peak Period - Jellicoe Road and Firth Street (17:00 – 18:00)

MOVEMENT SUMMARY

Site: 101 [PM Peak Jellicoe Road and Firth Street (SH27) (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Firth Street (SH27)														
1	L2	24	2	25	8.3	0.210	4.7	LOS A	0.0	0.0	0.00	0.04	0.00	48.3
2	T1	340	35	358	10.3	0.210	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	49.7
Approach		364	37	383	10.2	0.210	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.6
North: Firth Street (SH27)														
8	T1	347	17	365	4.9	0.193	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	29	0	31	0.0	0.025	5.9	LOS A	0.1	0.7	0.44	0.59	0.44	44.9
Approach		376	17	396	4.5	0.193	0.5	NA	0.1	0.7	0.03	0.05	0.03	49.5
West: Jellicoe Road														
10	L2	23	0	24	0.0	0.049	5.9	LOS A	0.2	1.3	0.52	0.65	0.52	44.1
12	R2	10	1	11	10.0	0.049	12.9	LOS B	0.2	1.3	0.52	0.65	0.52	43.9
Approach		33	1	35	3.0	0.049	8.0	LOS A	0.2	1.3	0.52	0.65	0.52	44.0
All Vehicles		773	55	814	7.1	0.210	0.8	NA	0.2	1.3	0.04	0.07	0.04	49.3

3.4 Accessibility

3.4.1 Private Vehicles

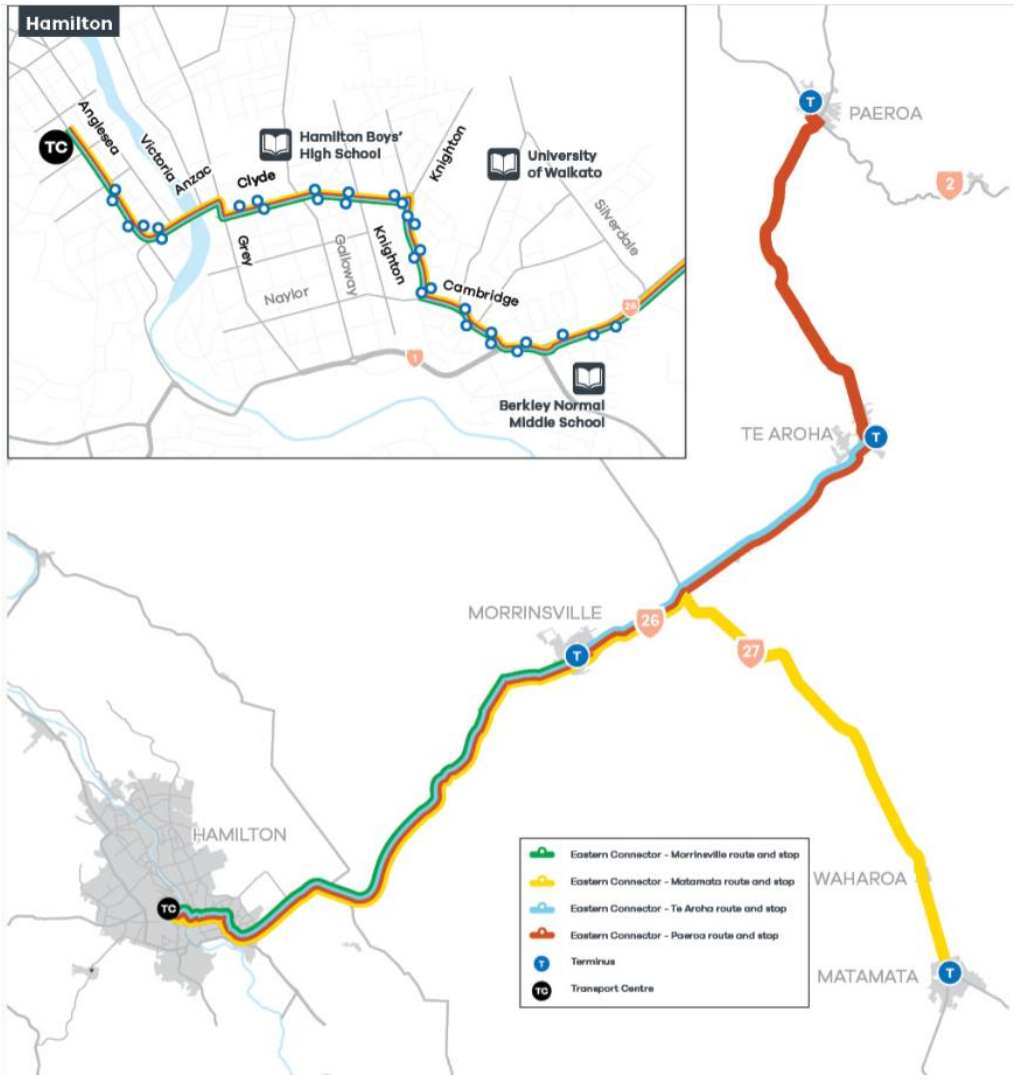
The proposed development area is well located in terms of connections to the roading network. Matamata is located at the intersection of State Highway 24 and State Highway 27, and the proposed plan change connects to Station Road, which in turn connects to SH27.

At a wider level, Ashbourne is located approximately 45mins to an hour to several regional centres, including Hamilton, Tauranga and Rotorua.

3.4.2 Public Transport

There is limited local Matamata bus services, although there are several buses linking to Hamilton and Morrinsville. As shown below in Figure 3-11, the Eastern Connector (in yellow), travels to Hamilton from Matamata on weekdays, with an internal loop through the Matamata town centre.

Figure 3-11: Bus Service between Matamata and Hamilton



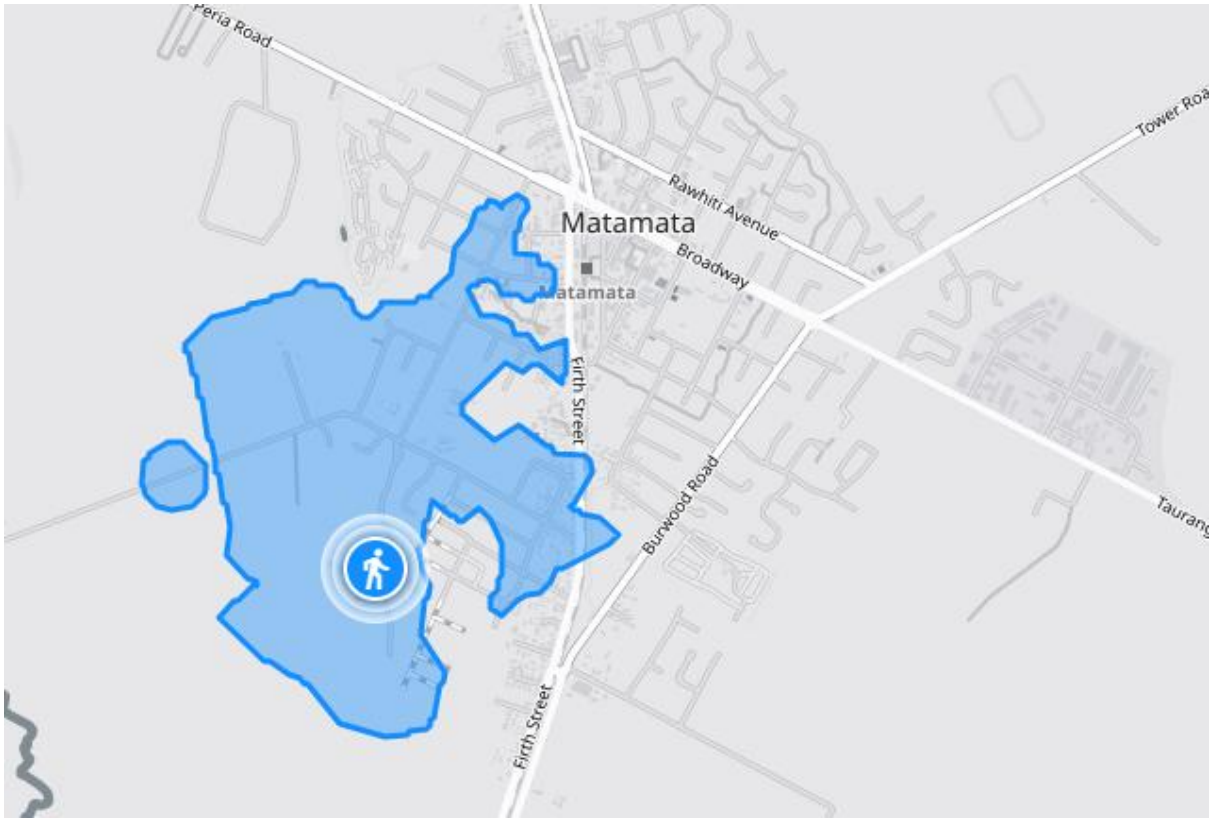
3.4.3 Walking

Using a practical walking distance of 1.5 kilometres and the 15th percentile walking speed of a typical fit, healthy adult of 1.2 m/s, gives a journey time of approximately 20 minutes. This is generally in line with New Zealand data in the Pedestrian Planning and Design Guide, which states that for walking trips, half are more than 10 minutes and 18% are more than 20 minutes. The primary catchment area for pedestrians has therefore been based on a 1.5km walking distance from the site as shown in Figure 3-12 below.

As can be seen from the centre of the Plan Change area (currently rural) a 20min walk will be slightly short of the Matamata centre. It is noteworthy however that as development progresses additional connections will be provided improving permeability for walking in these areas.

Within 20mins walk is Firth Primary School, Matamata Intermediate School and Matamata College. Within 25mins walk is the Matamata urban centre and associated community facilities.

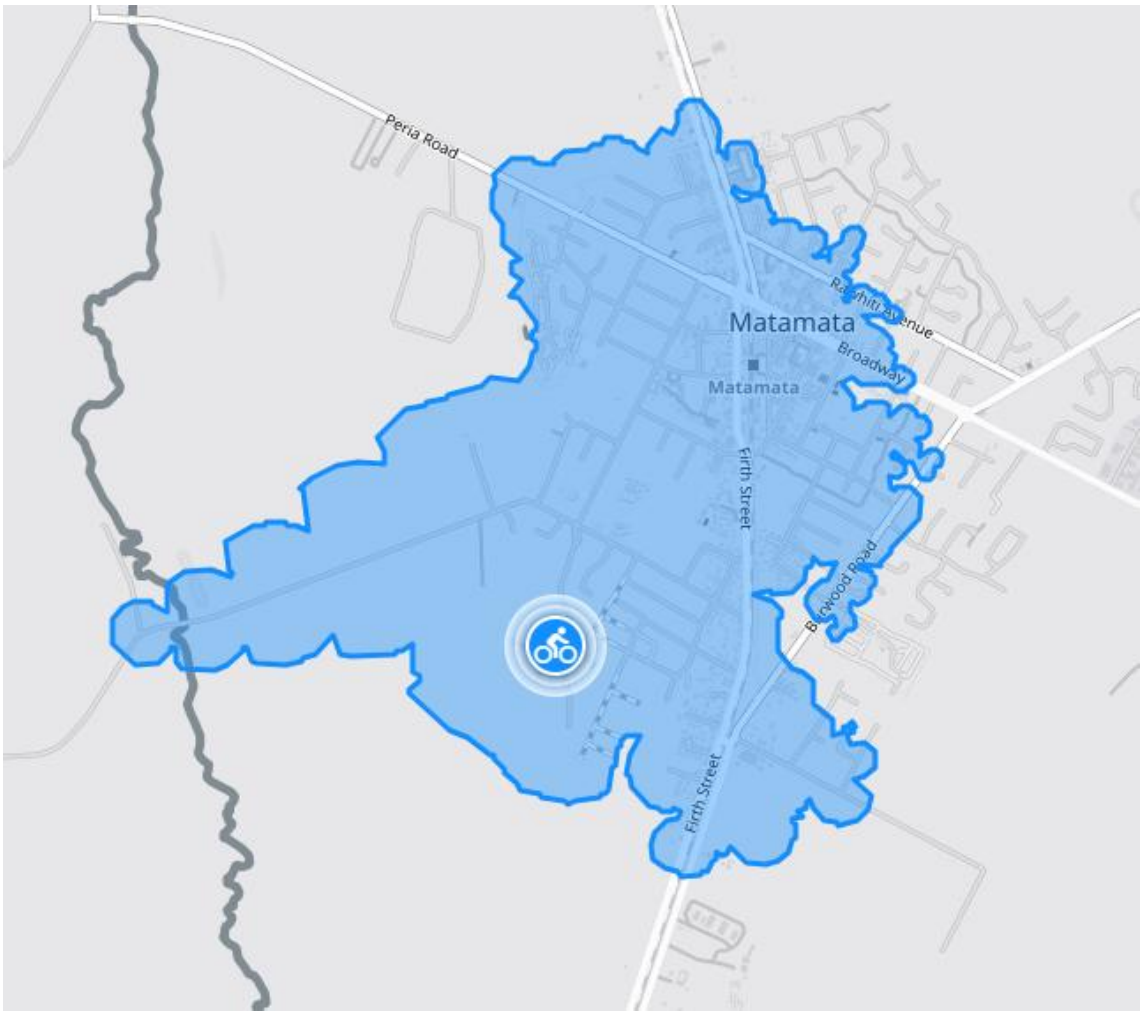
Figure 3-12: Walking Catchment



3.4.4 Cycling

Based on NZTA's Research Report 426, the average cycling trip length is approximately 3 kilometres. Based on a cycle speed of 20km/hr, Figure 3-13 shows an indicative cycling catchment for the site. As shown, the majority of Matamata is able to be reached by bike within approximately 10mins (ie within 3km).

Figure 3-13: Cycle Catchment



3.5 Road Safety Assessment

An assessment of the surrounding area's safety record has been carried out using the Waka Kotahi CAS database, for the five-year period between 2019 and 2023 plus any crashes entered into the system for 2024. The search included all reported crashes on Station Road and at the intersections of Jellicoe Road with Firth Street and Station Road with Firth Street. A total of 4 crashes were reported within the search criteria, including

- Car turning right from Firth Street to Station Road, hit by an oncoming cyclist (Minor Injury)
- Car on Firth Street lost control turning right, driver under instruction (No injury)
- Truck on Jellicoe Street hit car undertaking driveway manoeuvre (No injury)
- Car on Station Road lost control, car travelling over speed limit (No injury)

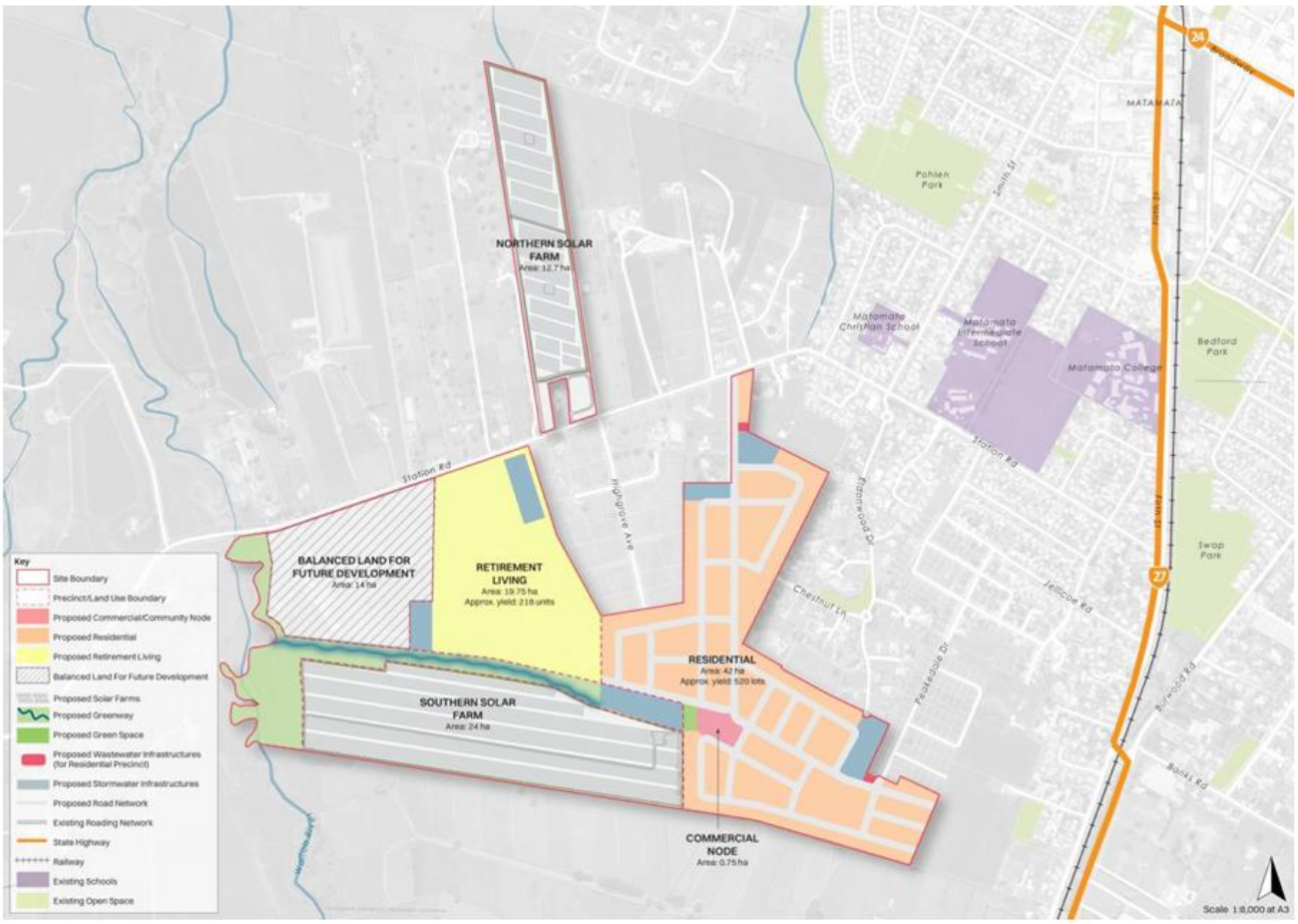
Based on the above, no definitive patterns or safety concerns are identifiable, and as such no road safety matters related to the proposed development have been identified.

4 Proposed Development

Ashbourne is a multi-use development that includes four key precincts:

- A new residential community, comprising 518 new residential units with a variety of densities, a green space and a commercial node;
- The commercial node is proposed to include the following activities
  - Childcare facility with an overall site of 500m^2 (capacity of approximately 100 children);
  - Café/Restaurants of approximately 150m^2;
  - Dairy/Convenience store approximately 300m^2; and
  - Shops/Retail approximately 900m^2.
- A multi-functional greenway that connects the neighbourhood centre and commercial node to the Waitoa River on the site's western boundary with an active-mode pathway along the length;
- A retirement living core, comprising of 218 units, an aged care service and supporting facilities that will be provided across a staged development;
- Two lifestyle block residential dwellings (located south of the northern solar farm); and
- Two solar farms which will provide a sustainable energy resource onsite, with the potential to integrate into the wider electricity network to generate energy outside of the immediate development.

Figure 4-1: Ashbourne Development Master Plan



4.1 Proposed Staging

Given the size of the development proposal, the development is proposed to be implemented in stages. Each separate development area within the full development proposal will be subject to a standalone staging, with the implementation of the retirement village, the residential components and the solar farms to be progressed independently.

4.1.1 Residential and Commercial Staging

The residential and commercial stages are proposed to be delivered in eight stages, that progress from the Peakedale Drive end of the development, through to a connection at Station Road in the North.

Figure 4-2: Residential and Commercial Development Staging

4.1.2 Retirement Village Staging

As shown in Figure 4-3 below the Retirement Village is proposed to be developed from north to south in ten incremental stages. The timing of the stages will be largely dependent on market demands.

Figure 4-3: Proposed Retirement Village Staging

4.1.3 Solar Farm Staging

The Solar Farms are proposed to be developed in two stages, with the Northern Farm accessed from Station Farm being delivered first, and the Southern Farm being delivered second – with a longer-term delivery horizon.

5 Trip Generation

In New Zealand, the RTA Guide is frequently used for assessing the traffic generating potential of residential developments. For residential dwellings such as those proposed, the RTA predicts 0.85 trips / dwelling for peak hour trips and 9.0 trips / dwelling for daily trips. Similarly, the RTA predicts a trip generation rate of 0.2 trips per dwelling in the evening peak for housing for aged and disabled persons. This rate has been adopted for the retirement village for both the AM and PM peak periods.

The RTA Guide is also used for assessing the traffic generating potential of commercial activities, and therefore was used for the childcare, café/restaurant, convenience store and dairy. With regard to the solar farm component of the development, once operational, this is estimated to generate in the vicinity of 4 trips per day based on the trip generation of other solar farms in New Zealand.

The total estimated traffic generation is summarised below in Table 5-1.

Table 5-1: Expected Traffic Generation

Activity	Quantity	Unit	RTA Rate	Internal Capture	Trips	
				AM and PM	AM	PM
Residential (including 2x lifestyle blocks)	520	Dwellings	0.85 trips per dwelling for peak hour	0	442	442
Solar Farm	2	Areas	2 trips per area in the peak hour	0	4	4
Retirement Village	218 71	Units Beds	0.2 trips per dwelling in the peak hour 0.15 trips per bed in the peak	0	55	55
Commercial Activities	100	Children	500m2 Childcare- Assume 100 Children, and 0.8 trips per child in the peak hour	80%	16	16
	150	m2	Café/Restaurant – 5 trips per 100m2	20%	6	6
	300	m2	Convenience Store/Dairy – 4.6 trips per 100m2	20%	11	11
	900	m2	Retail - 4.6 trips per 100m2	20%	33	33
Total					*567*	*567*

Internal capture has been included for the commercial activities, given the neighbourhood centre is located within the residential suburb. Generally, a 20% internal capture rate was adopted, with the exception of the childcare for which an 80% internal capture rate was adopted. The proposed childcare is anticipated to service the residents of the wider development and adjacent suburbs, and therefore these trips are likely to be via alternate modes (i.e. walking) or already captured in the residential trips.

These trips are assumed to split into inbound/outbound trips based on and these ratios are:

- 25/75 for the morning peak hour for residential
- 75/25 for the evening peak hour for residential
- 40/60 for the morning peak hour for retirement units

- 60/40 for the evening peak hour for retirement units
- 50/50 for both peak periods for commercial activities (due to the mixed use of activities, this is assumed to reflect the mixed activities)

This creates a total trip generation of the following

Figure 5-1: Traffic Generation by Direction

Activity	Trips	Morning Peak		Evening Peak	
		IN	OUT	IN	OUT
Residential	442	111	332	332	111
Retirement Village	55	22	33	22	33
Commercial Activities (including Solar Farm)	69	35	35	35	35
TOTAL	*567*	*167*	*398*	*167*	*398*

5.1 Traffic Distribution

Information from the census information[3] demonstrates that majority of trips related to school and employment in the peak hour are local trips. There is a number of external trips arriving at the area from the wider area (7%), but the vast majority of arrivals into Matamata, originate in Matamata (63%).

Based on this, the trip distribution has been completed with the majority of trips (90%) heading northeast, to connect with schools and employment opportunities. The remaining 10% are assumed to travel to the west or the south, with an equal distribution (5%) in each of these directions.

It is noted that the traffic expected from this application has been distributed based on the following assumptions:

- All retirement village trips were assumed to enter/exit the village via Station Road, noting that the intent is for the retirement village to be built from the north to the south.
- The retirement village trips with an origin/destination in the north/east were assumed to travel via Smith Street, noting the volume of retirement village trips are low (less than 50 peak hour trips).
- All other residential and commercial trips enter/exit the subdivision via Peakedale Drive. This aligns with the intended staging, where Stage 1 will be accessed via Peakedale Drive. Upon full buildout the spine road will allow vehicles to access the network directly onto Station Road, and therefore the assessment is conservative.
- The residential and commercial trips with an origin/destination in the north/east were all assumed to travel via Jellicoe Road and then Firth Street. Again, this is conservative acknowledging that some trips may travel via Smith Street.

The distribution of the trips across the network can be found in Appendix A.

[3] Commute Waka, 2018

5.2 Background Growth

Historic Census data has been reviewed to gain an understanding of residential growth in Matamata. The population of the Matamata-Piako District over the three most recent censuses dates[4] (for which data is available) is as follows:

- 2006 the population was 30,483
- 2013 the population was 31,536
- 2018 the population was 34,404

As such, over the 12-year period between 2006 and 2016, the population of the Matamata-Piako District increased by 3,921 people or 12.9%. This is equivalent to 1.1% growth per year.

A review of the average annual daily traffic (AADT) volumes on Firth Street (SH27) has also been undertaken to understand traffic growth. The NZTA site between College Street and Station Road was reviewed between 2019 and 2023 with the following average annual daily traffic volumes reported[5]:

- 2019 the AADT was 8,468
- 2020 the AADT was 8,000
- 2021 the AADT was 8,053
- 2022 the AADT was 7,867
- 2023 the AADT was 8,457

The drop in vehicle volumes on this corridor between 2019 and 2020 is likely a result of COVID-19. In 2020 and 2021 numerous lockdowns occurred as a result of the pandemic, and both regional and interregional vehicle movements were restricted.

The drop in vehicle movements between 2021 and 2022 is more difficult to explain, however it may have been a result of the SH27 upgrades near the Mangawhero Stream[6] which resulted in a section of the corridor being closed for 3 months. The detour route for these works still routed vehicles along Firth Street, however some trips may have diverted, and some trips may have not happened all together.

As such, over the 5-year period from 2019-2023 the vehicle movements on Firth Street fluctuated, however the volume did not grow.

Based on both the residential growth, and the nearby vehicle traffic growth, a conservative 1% annual growth rate has been applied to the existing network for a 10-year period. While the population has grown by 1.1%, the proposal will provide a large portion of the residential growth, and therefore a full additional 1% is already considered conservative.

. . . . . .

[4] https://www.stats.govt.nz/tools/2018-census-place-summaries/matamata-piako-district

[5] https://experience.arcgis.com/experience/a09cd3ec9bdd4068b45c818a69601775#data_s=id%3AdataSource_1-192bc3bd297-layer-84%3A4878 , Site ID 02700075

[6] https://www.nzta.govt.nz/media-releases/sh27-south-of-matamata-detoured-10-january-to-14-april-2022/

5.3 Assessment of Traffic Effects

5.3.1 General Traffic Effects

Based on the access points available at Stage 1, the key existing wider network intersections include:

- Jellicoe Road / Firth Street (SH27) intersection
- Station Road / Firth Street (SH27) intersection

With regard to new intersections, two new intersections have been assumed on Station Road, referred to as:

- Spine Road/Station Road
- Retirement Village/Station Road

All intersections have been tested under the assumption of full build out, conservative network connections, and a background traffic increase of 10% on all existing movements. It is noted that the Spine Road has conservatively been assumed to not carry traffic, and therefore intersection modelling of this intersection has not been undertaken. Notwithstanding this, should 50% of the site trips use this access once it is provided (approximately 280 peak hour vehicle movements), the intersection could operate acceptably.

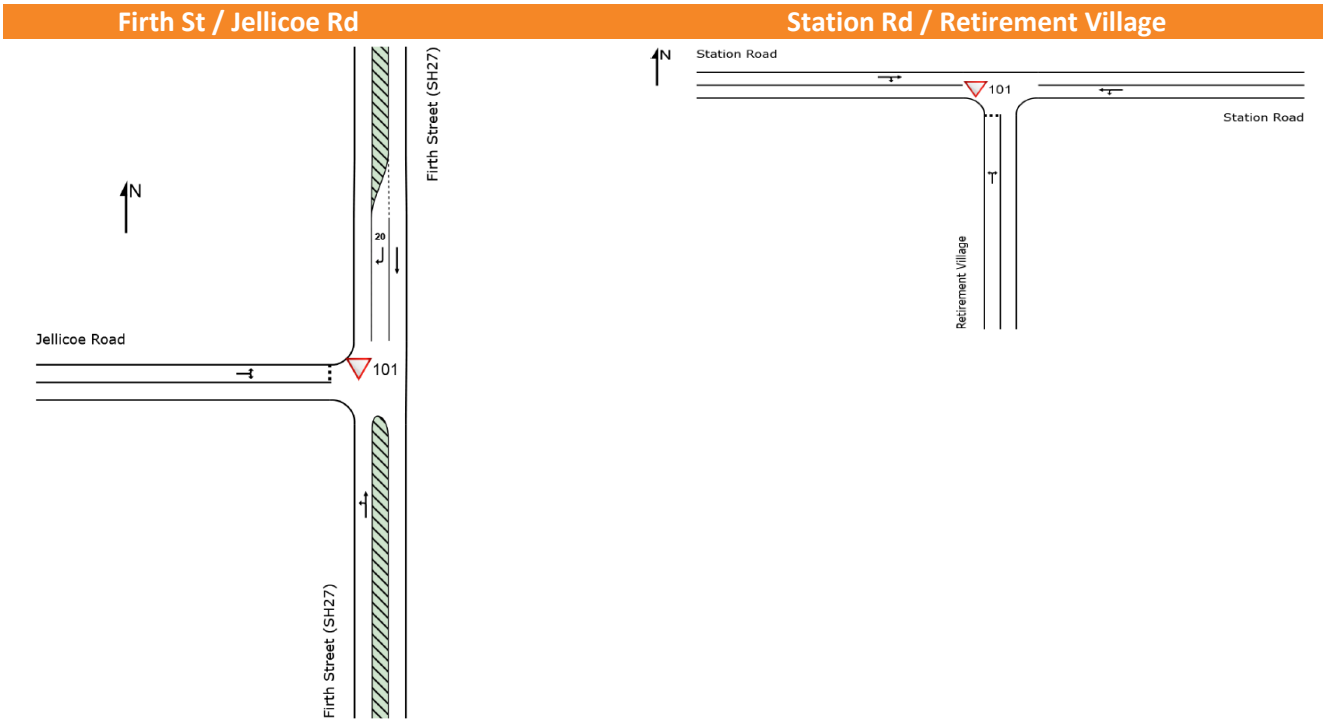
The default SIDRA parameters were generally retained, with the exception of the right turn gap acceptance out of the minor road at the Jellicoe Road / Firth Street intersection. The critical acceptance gap was reduced to 5 seconds, and the follow-up headway was reduced to 3 seconds in accordance with Austroads[7]. The default gap acceptance parameters for the right turn out of the retirement village were conservatively retained given the higher speed environment on Station Road in this location as well as the road users accessing the network in this location.

The intersection layouts modelled are shown in Figure 5-2, and the performance of these intersections are summarised in the SIDRA results in Figure 5-3 to Figure 5-6.

. . . . . .

[7] Austroads Guide to Road Design Part 4A, Unsignalised and Signalised Intersections, Table 3.5: Critical acceptance gaps and follow-up headways

Figure 5-2: Intersection Layouts Modelled



It is noted that these intersections have been conservatively modelled without right hand turn bays, however given the speed environment, and in the case of the retirement village - older drivers, right hand turn bays have been proposed at both the intersection of Station Road and Spine Road and Station Road and the Retirement Village. The results as shown below can therefore be considered to be a "worst case" scenario, and the intersections will very likely perform better than reported.

Should the speed environment be reduced on Station Road to 50kph at a later date prior to the implementation of the proposed upgrades, the requirement for a right turn bay could be reevaluated.

Figure 5-3: SIDRA Movement Summary for Jellicoe Road / Firth Street Intersection in the AM Peak Hour

Site: 101 [AM Peak Jellicoe Road and Firth Street (SH27) (Site Folder: RG Assessment March 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Firth Street (SH27)															
1	L2	All MCs	26	1.0	26	1.0	0.266	4.6	LOS A	0.0	0.0	0.00	0.03	0.00	48.5
2	T1	All MCs	479	4.0	479	4.0	0.266	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	49.7
Approach			505	3.8	505	3.8	0.266	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.6
North: Firth Street (SH27)															
8	T1	All MCs	328	4.0	328	4.0	0.173	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	All MCs	156	1.0	156	1.0	0.148	6.8	LOS A	0.6	4.5	0.53	0.71	0.53	44.5
Approach			484	3.0	484	3.0	0.173	2.2	NA	0.6	4.5	0.17	0.23	0.17	48.0
West: Jellicoe Road															
10	L2	All MCs	383	1.0	383	1.0	0.539	9.0	LOS A	3.8	26.7	0.68	0.96	1.08	42.9
12	R2	All MCs	54	1.0	54	1.0	0.539	19.8	LOS C	3.8	26.7	0.68	0.96	1.08	42.8
Approach			437	1.0	437	1.0	0.539	10.3	LOS B	3.8	26.7	0.68	0.96	1.08	42.9
All Vehicles			1426	2.7	1426	2.7	0.539	4.0	NA	3.8	26.7	0.27	0.38	0.39	46.8

Figure 5-4: SIDRA Movement Summary for Jellicoe Road / Firth Street Intersection in the PM Peak Hour

Site: 101 [PM Peak Jellicoe Road and Firth Street (SH27) (Site Folder: RG Assessment March 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Firth Street (SH27)															
1	L2	All MCs	42	1.0	42	1.0	0.240	4.6	LOS A	0.0	0.0	0.00	0.05	0.00	48.4
2	T1	All MCs	414	4.0	414	4.0	0.240	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	49.6
Approach			456	3.7	456	3.7	0.240	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.5
North: Firth Street (SH27)															
8	T1	All MCs	349	4.0	349	4.0	0.184	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	All MCs	378	1.0	378	1.0	0.338	7.1	LOS A	1.9	13.1	0.57	0.74	0.63	44.3
Approach			727	2.4	727	2.4	0.338	3.7	NA	1.9	13.1	0.30	0.38	0.33	46.9
West: Jellicoe Road															
10	L2	All MCs	161	1.0	161	1.0	0.361	7.3	LOS A	1.8	12.4	0.67	0.85	0.85	42.6
12	R2	All MCs	58	1.0	58	1.0	0.361	20.7	LOS C	1.8	12.4	0.67	0.85	0.85	42.5
Approach			219	1.0	219	1.0	0.361	10.9	LOS B	1.8	12.4	0.67	0.85	0.85	42.6
All Vehicles			1402	2.6	1402	2.6	0.361	3.8	NA	1.9	13.1	0.26	0.35	0.30	46.9

Figure 5-5: SIDRA Movement Summary for Station Road/ Retirement Village Intersection in the AM Peak Hour

Site: 101 [AM Peak Station Road and Retirement Village (Site Folder: RG Assessment March 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Retirement Village															
1	L2	All MCs	1	1.0	1	1.0	0.023	4.7	LOS A	0.1	0.5	0.18	0.53	0.18	45.6
3	R2	All MCs	26	1.0	26	1.0	0.023	4.9	LOS A	0.1	0.5	0.18	0.53	0.18	45.4
Approach			27	1.0	27	1.0	0.023	4.9	LOS A	0.1	0.5	0.18	0.53	0.18	45.4
East: Station Road															
4	L2	All MCs	18	1.0	18	1.0	0.036	4.6	LOS A	0.0	0.0	0.00	0.14	0.00	48.0
5	T1	All MCs	51	1.0	51	1.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	49.2
Approach			68	1.0	68	1.0	0.036	1.2	NA	0.0	0.0	0.00	0.14	0.00	48.9
West: Station Road															
11	T1	All MCs	56	1.0	56	1.0	0.030	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.9
12	R2	All MCs	1	1.0	1	1.0	0.030	4.6	LOS A	0.0	0.1	0.01	0.01	0.01	48.4
Approach			57	1.0	57	1.0	0.030	0.1	NA	0.0	0.1	0.01	0.01	0.01	49.9
All Vehicles			153	1.0	153	1.0	0.036	1.5	NA	0.1	0.5	0.04	0.16	0.04	48.6

Figure 5-6: SIDRA Movement Summary for Station Road / Retirement Village Intersection in the PM Peak Hour

Site: 101 [AM Peak Station Road and Retirement Village (Site Folder: RG Assessment March 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Retirement Village															
1	L2	All MCs	1	1.0	1	1.0	0.023	4.7	LOS A	0.1	0.5	0.18	0.53	0.18	45.6
3	R2	All MCs	26	1.0	26	1.0	0.023	4.9	LOS A	0.1	0.5	0.18	0.53	0.18	45.4
Approach			27	1.0	27	1.0	0.023	4.9	LOS A	0.1	0.5	0.18	0.53	0.18	45.4
East: Station Road															
4	L2	All MCs	18	1.0	18	1.0	0.036	4.6	LOS A	0.0	0.0	0.00	0.14	0.00	48.0
5	T1	All MCs	51	1.0	51	1.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	49.2
Approach			68	1.0	68	1.0	0.036	1.2	NA	0.0	0.0	0.00	0.14	0.00	48.9
West: Station Road															
11	T1	All MCs	56	1.0	56	1.0	0.030	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.9
12	R2	All MCs	1	1.0	1	1.0	0.030	4.6	LOS A	0.0	0.1	0.01	0.01	0.01	48.4
Approach			57	1.0	57	1.0	0.030	0.1	NA	0.0	0.1	0.01	0.01	0.01	49.9
All Vehicles			153	1.0	153	1.0	0.036	1.5	NA	0.1	0.5	0.04	0.16	0.04	48.6

As shown in Figure 5-3 and Figure 5-4, the SIDRA model shows all movements at the intersection of Jellicoe Street and Firth Street operating at LOS C or better. The average delay experienced by a vehicle is 4 seconds in both peak periods, with the intersection having remaining capacity available with a V/C ratio of 0.54-0.36 in the AM and PM peak hour respectively. As such, this intersection is considered to operate well within the industry desired performance thresholds.

The retirement village access is shown to operate well within the industry desired performance thresholds, as per the output summaries shown in Figure 5-5 and Figure 5-6. All movements operate at LOS A with an overall average delay less than 2 seconds.

5.3.2 Structure Plan Roading Assessment

The Eldonwood Structure Plan requires a specific infrastructure assessment to be provided to support development and also identifies specific corridors which require assessment. An assessment against the Eldonwood Structure Plan rules is provided in the following tables.

Table 5-2: Rule 9.2.2 Additional Performance Standards for subdivision or development

Criteria	Assessment
(i) Any subdivision or development within the Structure Plan area shall provide for a collector road between Firth Street and Station Road with two links provided to Station Road.	One public connection is proposed to Station Road, as well as a private connection to Station Road within the retirement village. A second public connection to Station Road is not considered to be required, with the Peakedale Drive and the new Station Road connection providing sufficient capacity for the proposal. Pedestrian connectivity is provided to both Highgrove Avenue and Eldonwood Drive.
(ii) A minimum number of two roading links shall be provided between the collector road and Jellicoe Street.	The northern portions of these link roads are constructed, being Peakedale Drive and Hampton Terrace. The proposal includes extending Peakedale Drive to the southern extent of the Structure Plan Area. The southern portion of Hampton Terrace is not within the subject site and therefore beyond this application, however east-west connections to the Lot to the east are proposed in order to allow for future connectivity.
(iii) Pedestrian/cycle linkages shall be provided between the collector road, the existing Eldonwood subdivision and Firth Street.	Pedestrian footpaths, of at least 1.8m width, are provided on both sides of all new roads. Furthermore, a 2.5m wide shared path is proposed between Station Road and the southeastern boundary.

Table 5-3: Rule 9.2.4 Infrastructure and Servicing Schedule

Road	Assessment of Effect
Station Road East	From a traffic perspective this corridor can accommodate the additional traffic. The following upgrades are proposed to urbanise the corridor and improve the safety of the corridor: • Right turn bay at the new spine road access. To be provided when the Station Road connection is constructed. • Pedestrian footpath along the site frontage • Kerb and channel along the site frontage From the Spine Road to the Retirement Village access • A bridle path along the southern side of Station connecting to the Retirement Village retaining a rural standard
Hampton Terrace	The proposal does not connect directly to Hampton Terrace. As such, the effects of the proposal on Hampton Terrace are considered minimal.
Smith Street	From a traffic perspective this corridor can accommodate the additional traffic. Smith Street already provides pedestrian footpaths on both sides with kerbs and channels.
Haig Road	The proposal does not connect directly to Hampton Terrace. As such, there are no effects of the proposal on Haig Road.
Intersection Upgrades	As above, the intersections can operate acceptably in their current form. Right turn bays are already provided on Firth Street and therefore no upgrades are recommended at these intersections.
Additional Widening of Collector Road	Some widening has been proposed on Station Road at the intersection of Spine Road and the Retirement Village access to enable the formation of a right turn bay.

6 Future Network Connections

It is proposed that the roads within the retirement village will all be private roads. All other roads are to be vested and will be public roads.

External access to the proposal is proposed via two new intersections onto Station Road as well as an extension to Peakedale Drive. Allowance has also been made for two future east-west roading connections to the east of the residential subdivision at the eastern end of Road 1 and Road 16.

6.1 Proposed Roading Cross Sections

The proposed internal road network has been designed with consideration to the Regional Infrastructure Technical Specification (RITS) document and the Matamata-Piako District Council Development Manual 2010 (MPDCDM).

It is noted that the site is generally flat, and as such the proposed gradients all fall within the 14% maximum grade permitted by the MPDCDM.

6.1.1 Residential and Commercial Roading Network

The proposed residential and commercial activities will be serviced via a network of 16 new public roads that will be vested to Council. Road 1 and Road 7 will act as local collector roads and have a 20m road reserve, with the rest proposed to be local roads and having an 18m road reserve. The cross section of these roads is shown below.

The cross-sectional requirements of new roads are detailed in Table 3.1 of the MPDCDM. Those relevant to the proposal are summarised in Table 5 below.

It is noted that the site is currently zoned Rural and Rural Residential, however the proposed application is for an urban environment rather than a rural environment. Rural road cross-sections in Table 3.1 are typically suited to speed environments of 100km/hr and provide no kerbside parking, pedestrian or cyclist facilities, with metal shoulders and swales. Use of an urban cross-section for the proposed subdivision is considered more appropriate given the proposed density, location and layout. Posted speeds of 50 km/hr are expected.

Table 6-1: Cross Section requirements Matamata- Piako District Council MPDCDM (Table 3.1)

Road Type	Du's / vpd served	Road reserve	Carriageway width (excl. parking)	Footpaths	Parking
Rural and Rural Residential Zone					
Local Road	>25 or 48-350 vpd	20m	6m	n/a	n/a
Collector Road	250 – 1,500 vpd		6-7m		
Residential Zones					
Local Road (cul-de-sac)	7-25 du or 56-200 vpd	18m	3.5m	1.5m one side	2.5m one side
Local Road (residential)	>25 du or 200 – 1,000 vpd	20m	4-6m	1.5m both sides	2.5m both sides
Sub collector (residential)	800 – 1,200 vpd		7m		

6.1.1.1 Road 1 and 7 Cross-section

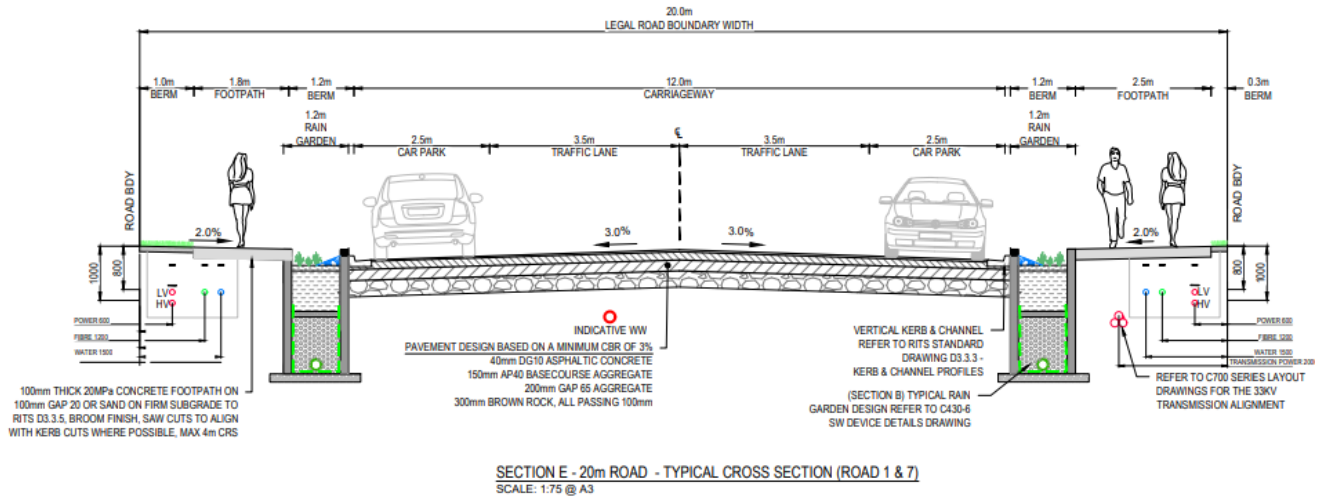
Road 1 provides the main access from Station Road into the site, with Road 7 providing the main southern entrance from Road 1 to the retirement village. Based on the definitions in Table 3.1 of the MPDCDM, Road 1 is anticipated to act as a sub collector road and Road 7 as a local road.

The Road 1 and Road 7 cross-section will consist of:

- 20m road reserve
- two x 3.5m traffic lanes;
- 1.8m wide footpath on one side of the carriageway and 2.5m on the other side of the carriageway
- 2.5m wide on both sides of the carriageway for the use of either parallel parking or berm build outs.

Figure 6-1 shows the proposed Road 1 and Road 7 cross-section.

Figure 6-1: Proposed Road 1 and 7 cross-section



SECTION E - 20m ROAD - TYPICAL CROSS SECTION (ROAD 1 & 7)
SCALE: 1:75 @ A3

This meets the road reserve, carriageway and parking dimensional requirements of the MPDCDM and exceeds the pedestrian requirements, thus is considered acceptable.

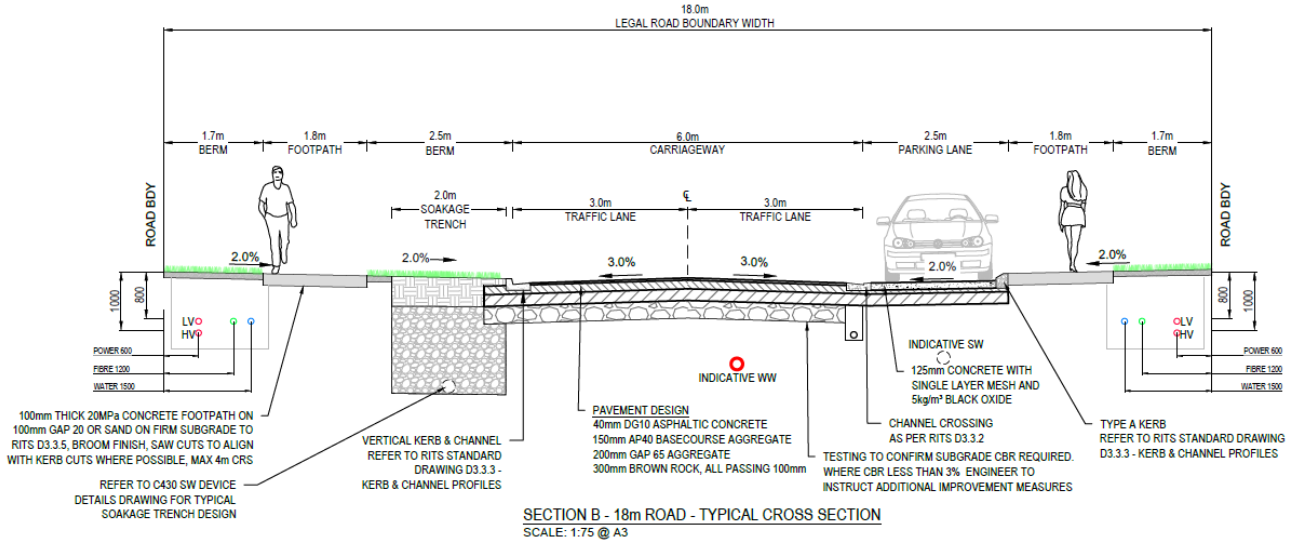
6.1.1.2 Other road cross-sections

All other road cross-sections within the residential and commercial aspects of the site will consist of:

- 18m road reserve
- two x 3.0m traffic lanes;
- 1.8m wide footpath on both sides of the carriageway; and
- 2.5m wide provision on both sides of the carriageway to be used as either kerb buildouts near intersections or parallel parking.

Figure 6-2 shows the proposed cross-section.

Figure 6-2: All other residential and commercial aspect road cross-sections



This meets the carriageway, parking and pedestrian requirements of the MPDCDM. It does not meet the overall road reserve width requirements of the MPDCDM (20m required versus 18m proposed). To accommodate this, a reduced overall berm width is proposed. This will not impact the parking or movement of vehicles or pedestrians, as such from a traffic and transport perspective this reduced reserve width is considered acceptable.

6.1.2 Retirement Village Roading Network

The proposed retirement village will be serviced via a network of 6-7m wide private roads. An overview of these roads is shown below

Figure 6-3: Proposed Roading Layout of Retirement Village

The cross section of these roads is shown below.

- Road 1 and Road 9: 7.0 m carriageway, with a 2.0 m berm and a 1.5 m footpath
- Roads 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13 and Road 15: 6.0m carriageway, no dedicated footpath
- Road 14 - 5.0 m carriageway with no dedicated footpath.

Figure 6-4: Cross Section for Road 1

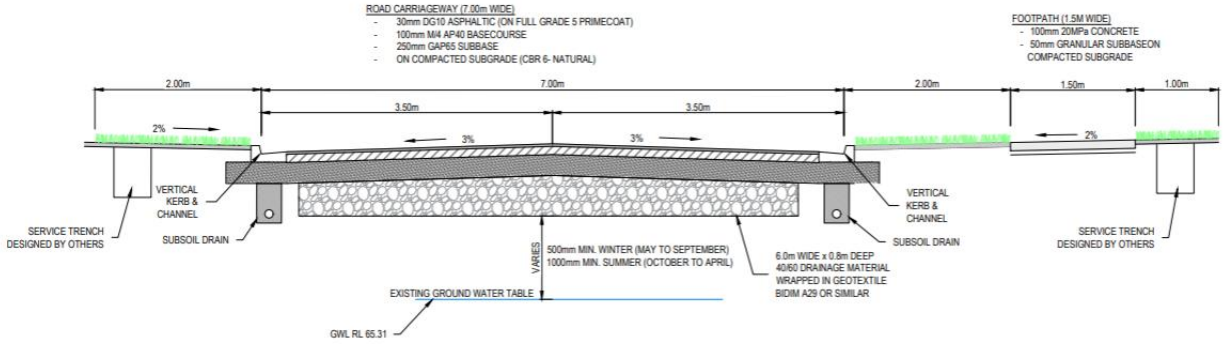


Figure 6-5: Cross Section for Roads 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13 and Road 15

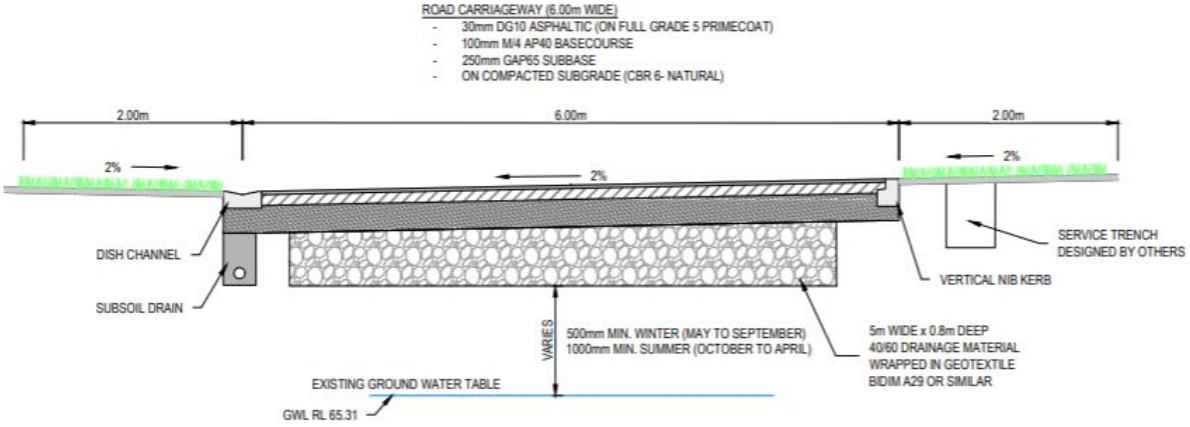
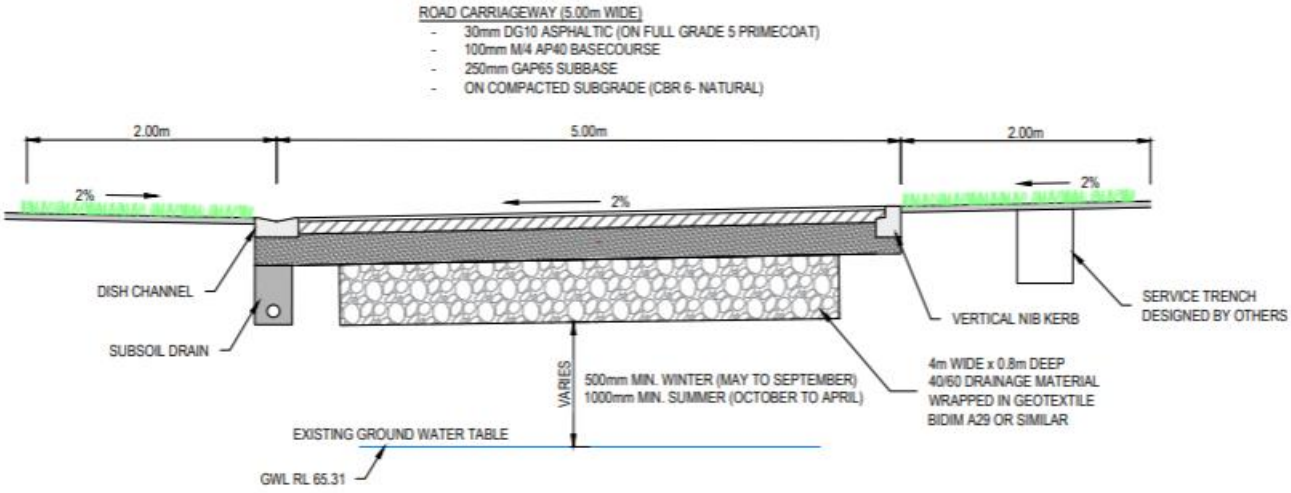


Figure 6-6: Cross Section for Road 14



The proposed cross sections of these roads will provide for a low-speed road environment, and given the low vehicle movements typically experienced within a retirement village setting, they will be appropriate for the intended use.

6.2 Intersections

All intersections have been designed to accommodate an 11.5m truck as per the RITS.

Within the residential component, those intersections with Road 1 can accommodate an 11.5m truck within the lane on Road 1, with an allowance for some crossing of the centreline on the minor road when turning into it.

All minor intersections in both the residential subdivision and retirement village require an 11.5m truck to cross the centreline. Whilst the 11.5m truck does not stay wholly within the lane as it turns into the minor roads this is considered acceptable as this will only occur once a week for the purpose of waste collection, vehicle speeds and volumes will be low at the minor intersections and this enables a much tighter intersection to be constructed, reducing pedestrian crossing distances and promoting slow vehicle navigation speeds.

6.2.1 External Intersections

Two new external intersections are proposed on Station Road, one will be 30m west of Aporo Drive and provide access to a new public road (Road 1) serving the residential, commercial and solar farms aspects of the proposal. The other would provide access to a new private road within the retirement village and be located 335m west of Highgrove Avenue.

Both intersections are proposed to provide right turn bays to facilitate safe turning movements. No specific cycle provision is provided, but pedestrian paths will be provided on the southern side of Station Road between the proposed new Road 1 intersection and the existing pedestrian path which currently ends on Station Road near Sheffield Street. Tracking for these intersections is shown in Appendix B.

It is noted that detailed design will need to be undertaken for both intersections with Station Road to ensure that they can accommodate heavy vehicles and tie in with the proposed works on the road including the provision of footpaths.

Figure 6-7: Proposed New Residential intersection

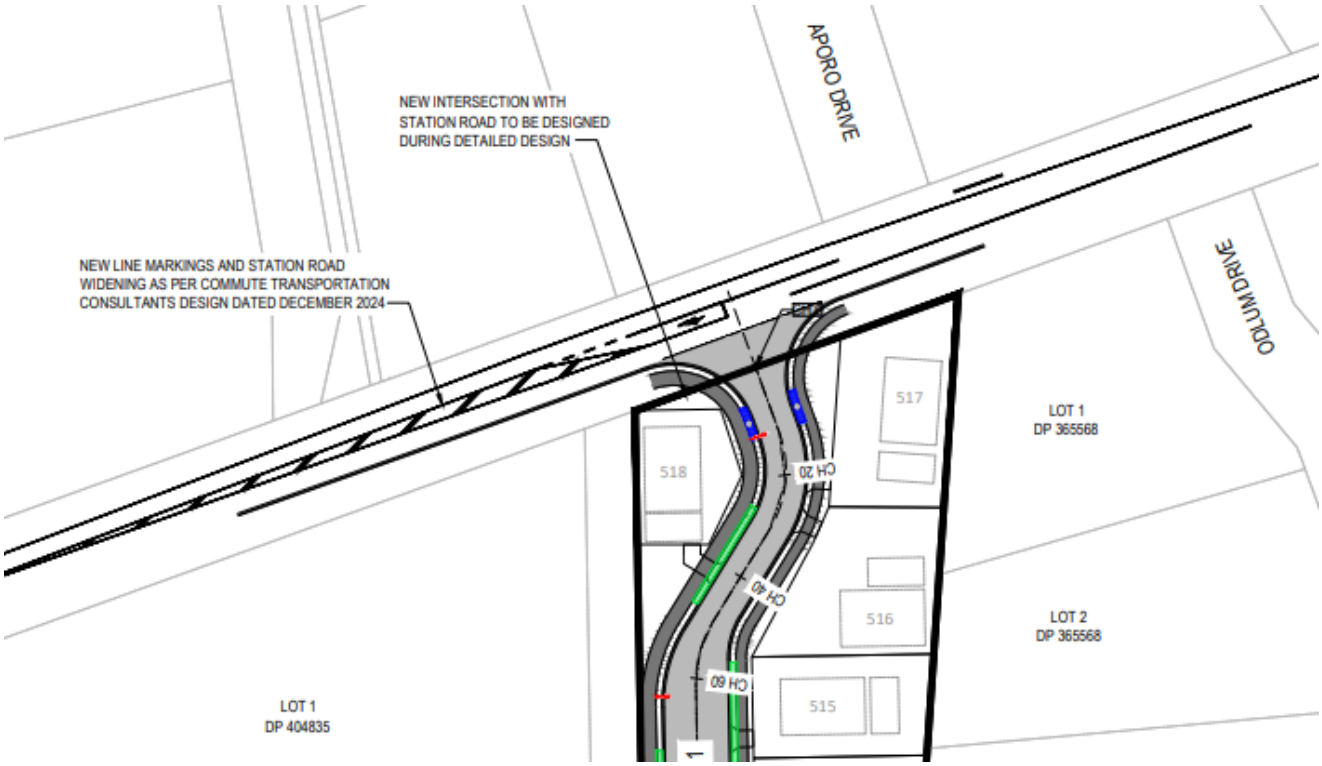
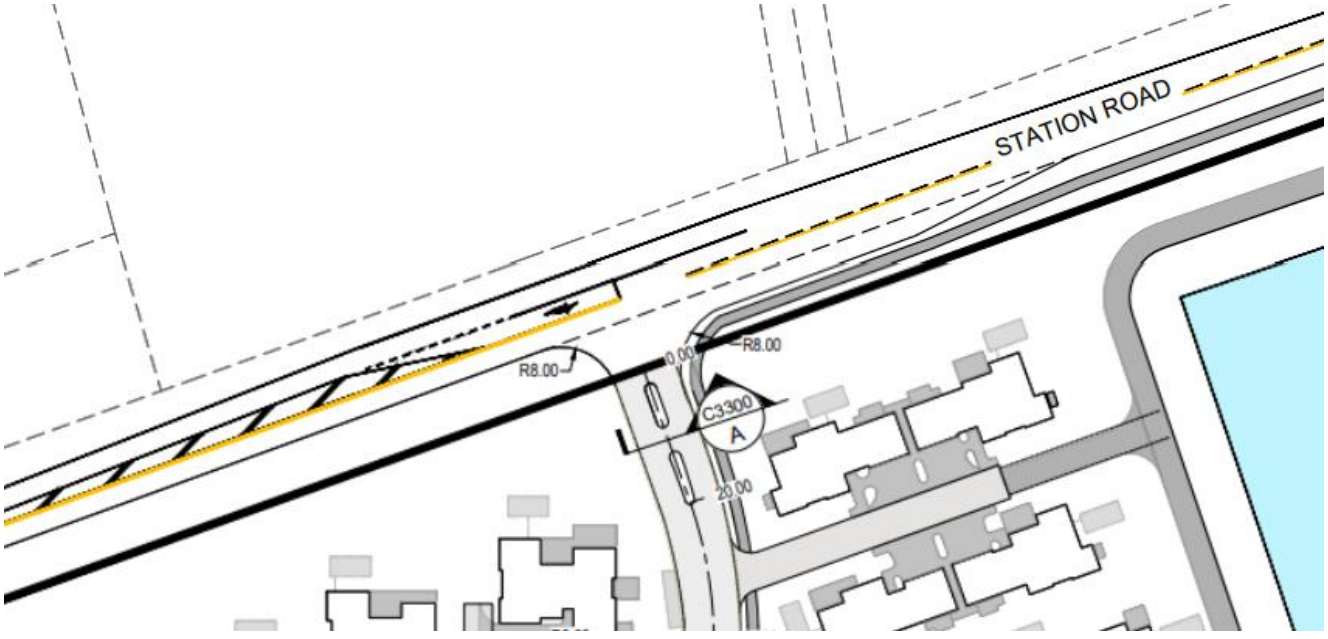


Figure 6-8: Proposed New Retirement Village intersection



6.2.1.1 Intersection Spacing

Section 3.7.1 a) of the MPDCDM gives minimum intersection spacing standards for intersections on opposite sides of the road in Residential and Rural Residential zones. For an 80 km/hr operating speed on collector / local roads this requires a spacing of 30m.

The proposed Road 1 intersection will be 30m from the nearby Aporo Road intersection and the Retirement Village centre intersection will be 335m from Highgrove Avenue, thus both intersections meet this.

6.2.1.2 Proximity to vehicle crossings

Section 3.12.3 Table 3C of the MPDCDM gives minimum separation distances between rural vehicle crossings and intersections (such as those already on Station Road in the vicinity of the site).

For Station Road, which has a posted speed of 80 km/hr this is 45m when measured from the centre of the intersection to the centre of the vehicle crossing. Intersection spacing standards for intersections on opposite sides of the road in Residential and Rural Residential zones require that for an 80 km/hr operating speed on collector / local roads this requires a spacing of 30m.

For the proposed new retirement village intersection, the nearest existing vehicle crossings are 180m to the east and 490m to the west thus complies with this.

For the proposed new Road 1 intersection the nearest vehicle crossing is 28m west of Road 1 thus does not comply with this. As discussed below, due to the existing topography, the intersection location excellent sight distance in both directions. Furthermore, the intersection is not the sole entrance to the development, with the southern portion of the development expected to reach the surrounding network via Peakedale Road. The intersection has also been located as far from the existing vehicle crossing as is practicable to maximise available distance, while still providing a core spine road in accordance with the indicative Structure plan. As such the intersection location to the vehicle crossing is considered acceptable.

6.2.1.3 Intersection Sight distance

Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads Part 4A) provides sight distance requirements at intersections. In regard to the local roads, for a design speed of 80 kph and with a reaction time of 2 seconds a safe intersection sight distance (SISD) of 181 m is required. In addition, an approach sight distance (ASD) of 114m is required. The MPDCDM requires a minimum sight distance of 175m for an 80km/hr operating speed environment.

Given the existing topography, available SISD for both the retirement village access and the residential access is in excess of 181m required. The available site distance from the proposed Spine Road intersection to the east is the shortest available (190m) and is shown below in Figure 6-9.

Figure 6-9: Available Sight Distance to the East – Proposed Spine Road

6.2.2 Internal intersections

Internally a total of 29 intersections are proposed within the public roading aspect of the proposal. Of these six will be formed as cross-roads intersections and 23 as T-intersections. All intersections will be priority controlled.

Within the private roading network in the retirement village a total of 11 intersections are proposed with the main road through the site. Of these eight will be formed as T-intersections and three as roundabouts. These have been designed with a minimum radius of 6.0m. These will also contribute to creating a slower speed environment.

6.2.2.1 Intersection Spacings

Internally within the residential subdivision where the operating speed is expected to be between 50 and 60 km/hr a spacing of 60m is required for intersections on the same side of the road and 30m for intersections on opposite sides of the road. It is proposed that all intersections on the same side of the road as each other will have a spacing of 70m or greater and all intersections on opposite sides of the road will have a spacing of 45m or greater.

Some of the roading intersections within the retirement village do not meet the spacing requirements of the MPDCDM. This is considered acceptable as all retirement village roads are proposed to be private and low speed. Users will be familiar with these, and traffic volumes will be significantly lower due to the absence of no public through traffic.

6.2.2.2 Intersection Sight Distance

Residential Development
Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads Part 4A) provides sight distance requirements at intersections. In regard to the local roads, for a design speed of 40 - 50 kph and with a reaction time of 2 seconds a safe intersection sight distance (SISD) of 73m - 97m is required. In addition, an approach sight distance (ASD) of 40 - 50m is required.

All of the intersections have been assessed for available sight distance, and due to the curve in the road, the following have a slight sight distance shortfall.

It is recommended that traffic calming be investigated at detailed design around the commercial centre on Road 1 to encourage lower speeds, both to improves sight distance and improve walking outcomes around the centre.

Location	Direction	Available SISD	Comment
Intersection of Road 1 and Road 7	Looking south from Road 7 along Road 1	75m	Recommend that street furniture and landscaping in front the commercial area is below 0.8m
Intersection of Road 1 and Road 10	Looking north from Road 10	50m	Recommend that traffic calming is investigated about the commercial centre to encourage a slower speed environment.

Retirement Village
The speed environment within the Retirement Village is proposed to be 20kph. This will be managed via appropriate speed signage and enforced by management of the Retirement Village. This would require a SISD of approximately 15m[8]. This is readily available at all intersections within the Retirement Village.

6.2.2.3 Intersection Design for Future Consideration

The following future design iterations are recommended at detailed design for the residential development to improve intersection layouts

- Intersection Road 1 and Road 9 – investigate opportunities to align closer to 90 degrees
- Intersection of Road 14 and Road 10 – investigate opportunities to provide a standard T intersection.

6.3 Proposed Pedestrian Connections

Pedestrian connections have been provided through the development. All publicly vested roads will have footpaths on both sides, and pram crossings will be provided at all intersections.

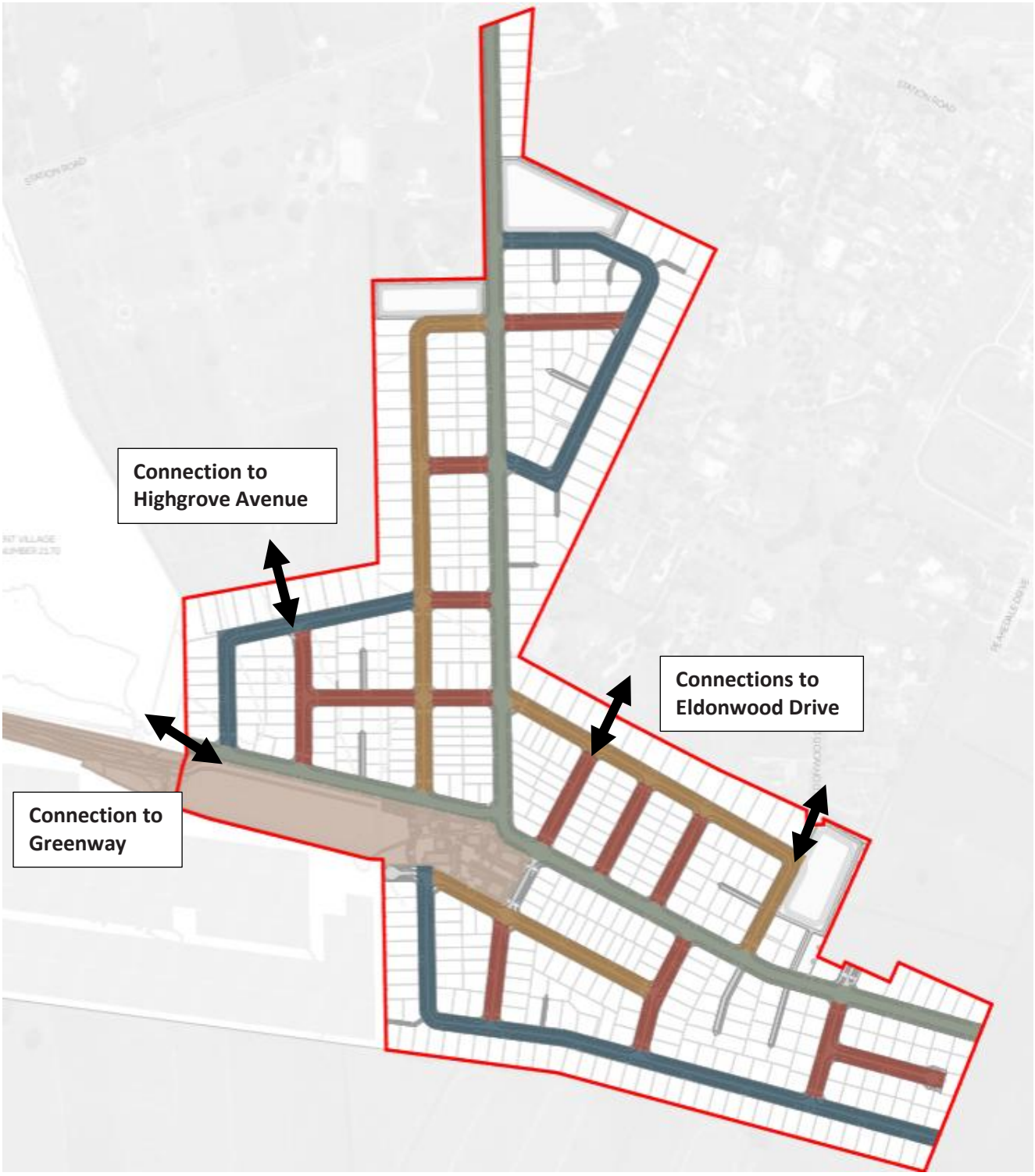
[8] Based on Austroads Part 4a, 20km/hr speed, 0% grade, reaction time of 2 seconds.

6.3.1 Residential and Commercial

As mentioned above all publicly vested roads are proposed to be provided with 1.8m footpaths on both sides of the road. In addition to this, dedicated pedestrian connections within the residential area have been provided in the following locations:

- From Road 5 to Highgrove Avenue
- From Road 5 to Eldonwood Drive in two locations
- From Road 14 along the proposed Greenway

Figure 6-10: Pedestrian Connection Points



6.3.2 Retirement Village

Overall, it is intended that the roading network within the village is retained in private ownership. A pedestrian network within the village is proposed and connections from residences to the facilities, and to the neighbouring commercial centre have been provided. Pedestrian connections to the greenway facility have also been provided – enabling recreational walking for residents.

All driveway access that runs to the main road through the site has been developed to have a pedestrian connection provided to maximise walkability within the site and minimise "dead ends" for pedestrians.

6.4 Vehicle tracking

As detailed above, vehicle tracking has been completed for the proposed road network to demonstrate that an appropriate design has been provided. This tracking has been completed utilising 90 percentile car and a 90-percentile truck as per the MPDC Development Manual Figure 3A and 3B. This vehicle tracking is shown in Appendix B.

7 Access

7.1 Residential Access

7.1.1 Crossing Separation

Table 3-B of the MPDCDM shows the minimum vehicle crossing separation standards. For a local road with an 85th percentile operating speed of 50 km/h, the MPDCDM states that one crossing is permitted per title irrespective of spacing, and 15.0 metres minimum spacing for second or multiple entrances. There is no requirement for separation between neighbouring lots.

It is proposed each dwelling has no more than one vehicle crossing, and therefore all dwellings comply with the MPDC DM.

7.1.2 Crossing Distances from Intersections

Urban Residential

Table 3-C of the MPDCDM shows the minimum separation between vehicle crossings and intersections. For a road with an 85th percentile operating speed of 50 km/h, the MPDCDM states that 20 metres of separation is required (as measured from the centreline of the intersecting road).

The majority of the proposed vehicle crossings comply with the MPDCDM, and 19[9] lots have been identified as having a vehicle crossing that does not comply with the minimum separation distance. These vehicle crossing locations are considered to be acceptable in this instance due to the following:

- The low-speed environment expected within the proposed development;
- The location of the crossings as far as possible from the intersections within the lot boundaries;
- The estimated low traffic volumes along the internal roads of the proposed development; and
- The available sight lines between vehicles exiting these crossings and vehicles likely to be within each intersection.

7.1.3 Crossing Design

MPDC DG 308 shows the vehicle crossing design for all urban vehicle crossings. The proposed vehicle crossing designs will comply with these designs in the urban areas.

MPDC DG 307 shows the vehicle crossing design for rural vehicle crossings. The proposed vehicle crossing design for the lifestyle properties will comply with this standard.

7.1.4 Crossing Sight Distances

Vehicle crossing site distances have been assessed for all residential lots. All vehicle crossings provide sufficient sight distances, of at least 28m as per Table 3A of the MPDC DM - with the exception of Lot 123. It is recommended that the vehicle crossing be moved in order to achieve the compliant sight distance.

. . . . . .

[9] Lots 411, 410, 395, 396, 384, 358, 359, 261, 250, 270, 136, 137, 86, 96, 97, 55, 54, 46 and 174.

For the lifestyle commercial properties, sight distance of 115m is required on an 80km/hr road. (MPDCDM Table 3-A). There is well in excess of 115m available in both directions at this intersection location

7.2 Commercial Access

The commercial area is proposed to be supported by two-way access points. These will be 6.0m wide, compliant with Section 3.12.2 of the MPDCDM. Access through the site will be possible – with the parking area shared between tenants. Vehicle tracking has been provided in the Appendices.

Figure 7-1: Commercial area Proposed Access Locations

7.2.1 Crossing Distances from Intersections

Table 3-C of the MPDCDM shows the minimum separation between vehicle crossings and intersections. For a road with an 85th percentile operating speed of 50 km/h, the MPDCDM states that 20 metres of separation is required (as measured from the centreline of the intersecting road).

Access 2 is located 60m from the nearest intersection, and Access 1 is located 86m and 60m from the two nearest intersections.

7.2.2 Crossing Design

Two vehicle access points have been provided to the commercial hub. These will be designed in accordance with MPDC DG 308 shows the vehicle crossing design for all urban vehicle crossings.

7.2.3 Crossing Sight Distances

Vehicle crossing site distances have been assessed for the commercial lot. Both vehicle crossings provide sufficient sight distances, of at least 28m as per Table 3A of the MPDC DM Sight distance available

7.3 Retirement Village Access

The road network within the Retirement Village is proposed to be maintained as a private road. As such the requirements of the MPDC Development Manual are not required.

However, it is noted that sight distances and vehicle crossing locations have been reviewed, and with a slow speed environment all vehicle crossings provide for safe access to the internal road network within the village.

7.4 Solar Farm Access

The Southern Solar Farm access has been tested with a semitrailer (see Appendix) – this is to ensure that the solar panels can be installed. The access requires at least a 5.0m width. This is considered acceptable at the end of the cul-de-sac and will have limited impact on pedestrians following construction.

The Northern Solar Farm access is proposed to be via two one-way access points during construction, and then once construction is completed, the eastern access will be used for the two rural residential dwellings.

At the boundary, the access to the Solar Farm will need to be wider during construction. The access will need to be 10m temporarily during construction, this can then be narrowed at the permanent vehicle crossing compliant with standard rural DG307.

7.4.1 Crossing Distances from Intersections

The Southern Solar Farm will be accessible via the termination of a cul de sac, which is 90m from the nearest intersection. The Northern Solar Farm access is 150m from the nearest intersection. Both of these comply with the separation requirement of 20m and 45m respectively.

7.4.2 Crossing Design

The northern solar farm will be designed to meet Drawing DG 307 as a rural crossing on a District Road. The Southern solar farm access will be designed to meet Drawing DG308 as an urban crossing.

7.4.3 Crossing Sight Distances

Vehicle crossing site distances have been assessed for the Solar Farms. At the end of a cul-de-sac, the sight distance measurement for the southern lot is not relevant. For the northern lot, 115m is required based on Table 3A. This is available for both vehicle crossings proposed – the permanent solar farm and the residential lots.

8 Parking

The following assessments have been undertaken against the Matamata-Piako District Plan, specifically Part B, Section 9.1: Roading of the Matamata-Piako District Council District Plan. Part B, Section 9.1.4 outlines the on-site parking requirements for residential developments. This states that:

"Every person who proposes to erect, re-erect, construct or substantially reconstruct, alter or add to a building on a site or who changes the use of any land or building, shall provide suitable areas for the parking of vehicles as required below, except for within the urban areas of the Towns of Matamata, Morrinsville and Te Aroha which include all landuse within the Residential, Business and Industrial Zones."

As the site falls within the rural areas of the town of Matamata minimum parking provisions apply.

8.1 Residential Parking

8.1.1 District Plan Parking Requirements

The MPDP requires that two parking spaces per dwelling are provided.

Residential parking is proposed to be contained on site for each dwelling. With the sites ranging in size from 350m2 to 800m2, there is sufficient on-site space to provide for parking a variety of ways to meet the MPDP requirements.

With regard to the smaller lots, concept plans have been developed to demonstrate how onsite parking will be provided for these dwellings. These can be found in the suite of application documents, and an example is shown below in Figure 8-1.

Figure 8-1: Indicative House Layout and Parking Provision on 350m2 lot

8.2 Commercial Parking

8.2.1 District Plan Parking Requirements

The parking requirements for the commercial parking area are shown below in Table 8-1.

Table 8-1: Matamata Piako District Plan Parking Requirements

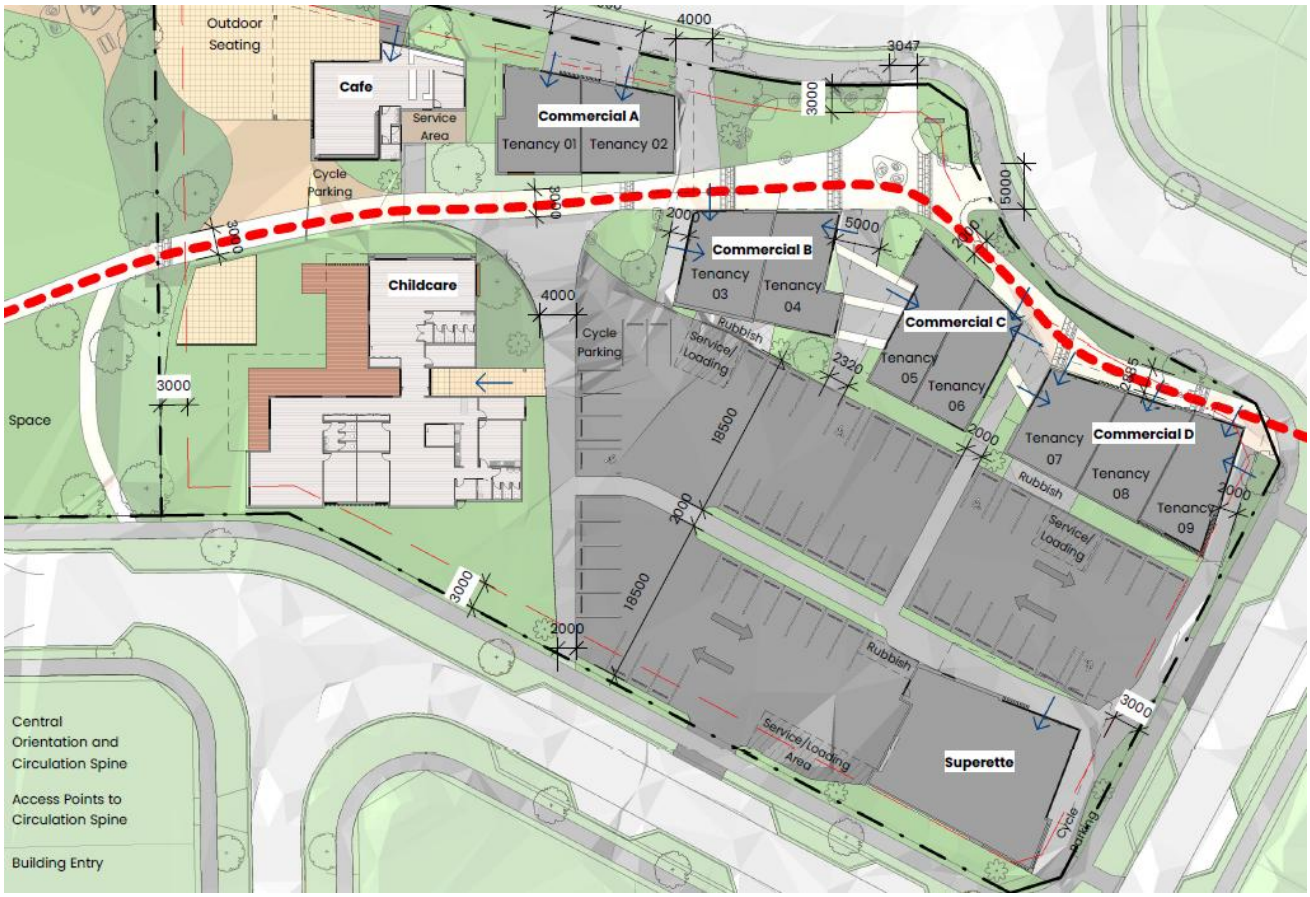
Activity	Proposed GFA / size	MPDP Parking Provision Rate	MPDP Requirement
Childcare	500 m2 100 students Assume staff ratio (1:10)	1 per four children, 2 per 3 staff	32
Café/Restaurant	150 m2	1 per 10m2	15
Dairy/Convenience	300 m2	1 per 40m2	8
Shops/Retail	920 m2	1 per 40m2	23
Total			**78**

In addition, the NZ Building Code / NZS 4121:2001 document, requires that at least two mobility spaces are provided for the first 50 parking spaces, with an additional mobility space to be provided for each additional 50 spaces (or part of).

8.2.2 Proposed Parking Provision

The commercial node is proposed to be supported by a central parking area, accessed from Road 10 and Road 14. This parking area will contain 51 parking spaces, with three loading spaces (two for van deliveries and one for an 8m truck) and four accessible spaces.

Figure 8-2: Proposed commercial parking layout



8.2.3 Parking Shortfall Assessment

The proposed parking provision results in a parking shortfall of 27 spaces. As per 9.1.4(iii) in the MPDP an assessment of this parking shortfall follows.

The parking area is proposed to be a large, shared parking area, which with the variety of adjacent uses, and complementary peak parking demands, this results in an opportunity for a more efficient parking provision. An assessment of the parking demands based on typical peak time of day demands is summarised below in Table 8-2.

Table 8-2: Peak Parking Demands Based on Shared Utilisation

		Peak Parking Demand based on Joint Demands							
Activity	**MPDP**	**AM Peak**		**Midday**		**Saturday**		**Evening**	
		Demand	**Spaces**	**Demand**	**Spaces**	**Demand**	**Spaces**	**Demand**	**Spaces**
Childcare	32	100%	32	25%	8	0%	0	60%	19
Café/ Restaurant	15	25%	4	80%	12	100%	15	75%	11
Dairy/ Convenience	8	75%	6	100%	8	100%	7.5	25%	2
Shops/Retail	23	25%	6	80%	18	100%	22.5	75%	17
Total Demand			**48**		**45**		**45**		**49**

As seen, overall estimated parking demands are highest in the evening peak, with estimated parking demands at 49 parking spaces.

In addition to this parking provision, on street parking is provided on Road 7, which can assist in the event of isolated parking demands in excess of the provision of 51 parking spaces.

8.2.4 Parking Dimensions

All parking spaces are proposed to be 2.6m wide by 4.9m long with a minimum of 7.7m manoeuvring aisle width.

MPDC Development Manual 2010 requires that 90-degree parking spaces for short term parking have a stall width of 2.6m, a stall depth of 4.9 (including kerb overhang) and a manoeuvring depth of 7.7m. As such all parking spaces comply with this requirement.

Mobility spaces have a total width of 3.6m, made up of a 2.5m space with 1.1m mobility strip. These dimensions meet the requirements of NZS 4404, and the MPDC Development Manual requirements.

8.3 On Street Parking

In addition to the on-site parking, on street parking will be available on all of the road network. The provision on each road is dependent on the location of vehicle crossings and the provision of rain gardens.

8.4 Retirement Village

8.4.1 District Plan Parking Requirements

The parking requirements for the commercial parking area are shown below in Table 8-3.

Table 8-3: Retirement Village District Plan Parking requirements

Activity	Proposed no./ size	MPDP Parking Provision Rate	MPDP Requirement
Villas	218	2 / dwelling	436
Aged care hospital	71 beds 18 employees No ambulance spaces	Visitor parking - 1 space / ten beds, plus 1 space / two employees, plus 1 space / ambulance	7 36 1
Aged Care Total			**44 spaces**

In addition, the NZ Building Code / NZS 4121:2001 document, requires that for the hospital component at least two mobility spaces are provided for the first 50 parking spaces, with an additional mobility space to be provided for each additional 50 spaces (or part of).

8.4.2 Proposed Parking Provision

All villas will be provided with a minimum of two parking spaces, typically with additional provision for visitor parking on site in front of garages.

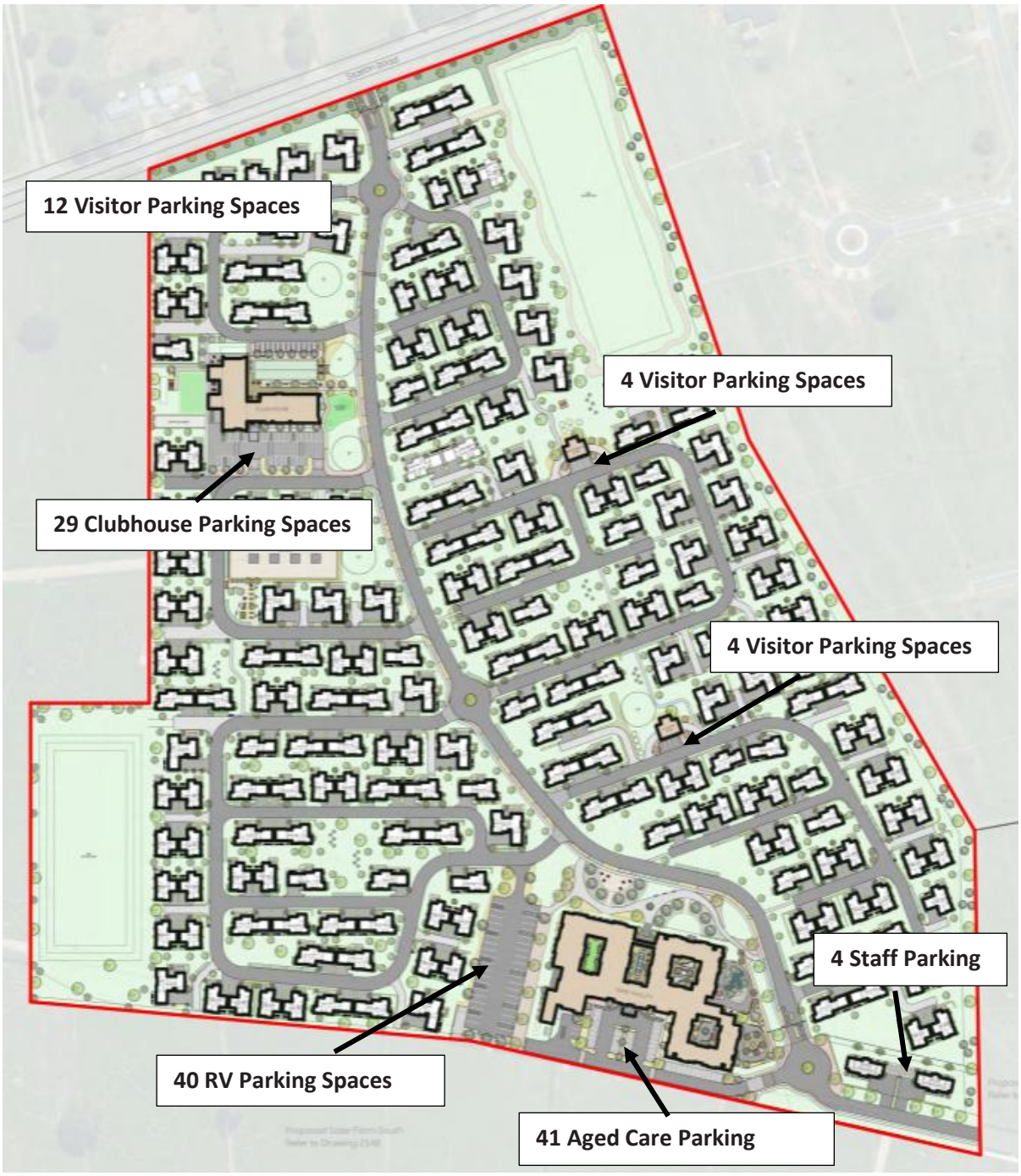
The aged care hospital is proposed to be supported by some 41 parking spaces accessed from private Road 9. This parking area will contain 39 spaces for staff and visitors, 1 ambulance spaces and 2 mobility spaces.

A parking provision of 41 parking spaces is a slight shortfall against the parking requirements of the MPDC.

In addition to the parking spaces above, parking spaces for larger vehicles such as campers has also been provided and can be access from Road 6 within the Village. This parking areas can also be utilised as overflow parking in exceptional circumstances.

Additional visitor parking is also available throughout the site (20 spaces) and located outside the facilities building (29 spaces).

Figure 8-3: Parking within Retirement Village



The Aged Care parking shortfall is considered acceptable given:

- The Village is intended to operate as an integrated development and there is availability of additional

parking on throughout the site and

- Aged care parking demands are expected to be slightly less than that required by the MPDC. Parking demands are expected to be region on 1 parking space per three beds for staff – 24 staff spaces, and 1 space per four beds for visitors – 18 visitor spaces.
- Staff shower and changing facilities are provided within the Aged Care facility to also encourage walking and cycling to work.
- Nurses accommodation of eight beds is provided and includes four dedicated parking spaces, which may overlap with staff parking demands.
- A pick up/drop off area and the loading space adjacent to the building can both be utilised by ambulances in the event of an emergency.

8.4.3 Parking Dimensions

Table 8-4 below summarises the parking dimensions required and provided through the retirement village.

Table 8-4: Parking Dimensions Assessment

	Stall Width	Stall Depth	Manoeuvring Space
MPDC Requirement	**2.6m**	**4.9m**	**7.7m**
Aged Care Parking Dimensions	2.7m	5.0m	8.0m
Facilities Building Parking	2.7m	5.0m	8.0m
Other Visitor Parking	3.0m	5.0m	12m

All of these parking dimensions comply with the MPDC requirements.

8.5 Loading

8.5.1 Residential

There are no specific loading requirements in the MPDCDM. On street rubbish and recycling collection is proposed through the residential development. Vehicle tracking of an 11.5m truck has been undertaken to demonstrate circulation through the residential development. This tracking is provided in Appendix B.

8.5.2 Commercial

The commercial area is proposed to be supported by three loading bays, all located onsite within the shared parking area. No reverse movements on to the road network are required. Tracking of these areas has been completed and is provided in Appendix B.

Figure 8-4: Loading areas in commercial area

8.5.3 Retirement Village

The retirement village has been designed to accommodate an 11.5m truck to enable public rubbish collections to be facilitated. Rubbish collection points will be provided for residents at the end of the shared driveways, and rubbish collection trucks will not be required to travel on these parts of the internal network. As such a route that does not require reverse movements can be provided.

Servicing for the Aged Care is via dedicated loading space.

Vehicle tracking has been provided in Appendix B.

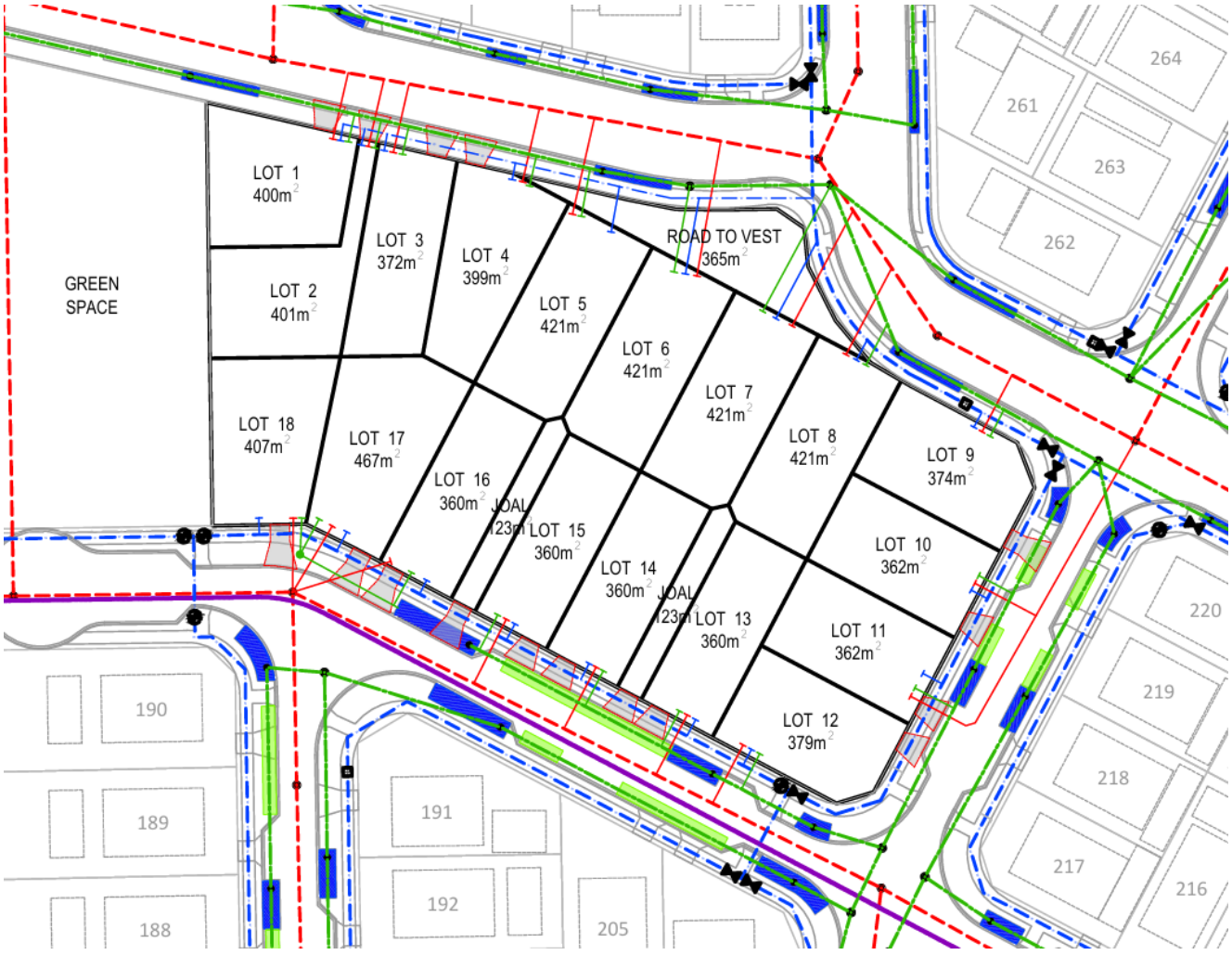
9 Commercial Node – Option B

To enable commercial flexibility, two options are proposed for the 'Commercial Node'. Option A enables the establishment of up to seven commercial units with a combined gross floor area of 1,876m2 and an associated 51 carparking spaces. Option B enables the establishment of 18 residential units and associated access.

9.1 Proposed Scenario

As shown in Figure 9-1, Option B provides for a residential development of 18 lots ranging in size from 360m^2 to 422m^2. There are no changes to the proposed roading environment from Option A, and as such the following assessment if focussed on the elements that are different.

Figure 9-1: Commercial Node: Option B



9.2 Trip Generation

Commercial Node Option B provides for residential dwellings – rather than the commercial activities provided for in Option A.

Trip generation for Option A and Option B are summarised in the tables below. As can be seen, the overall trips generated by a residential development (Option B), is lower than trips expected to be generated by a commercial development.

Table 9-1: Trip Generation for Commercial Node: Option A

Activity	Quantity	Unit	RTA Rate	Internal Capture	Trips	
				AM and PM	AM	PM
Commercial Activities	150	Children	500m2 Childcare- Assume 100 Children, and 0.8 trips per child in the peak hour	80%	16	16
	150	m^2	Café/Restaurant – 5 trips per 100m2	20%	6	6
	300	m^2	Convenience Store/Dairy – 4.6 trips per 100m2	20%	11	11
	900	m^2	Retail - 4.6 trips per 100m2	20%	33	33
Total					*66*	*66*

Table 9-2: Trip Generation for Commercial Node: Option B

Activity	Quantity	Unit	RTA Rate	Internal Capture	Trips	
				AM and PM	AM	PM
Residential	18	Dwellings	0.85 trips per dwelling for peak hour	0%	15	15
Total					*15*	*15*

9.3 Trip Distribution

While the net difference in trips between the scenarios is a reduction, it is noted that another key difference between the scenarios is the distribution of the trips on the network. In particular – commercial activities tend to have an element of internal trips and also are more balanced with regard to inbound and outbound trips in the morning and evening peak hour. Residential activities by comparison tend to be predominantly outbound in morning peak hours as people travel to work – and inbound in the evening as they return.

Based on this the below table compares the number of inbound and outbound trips for each scenario in the peak periods

Table 9-3: Commercial Node: Option A - : Trip Distribution

Activity		Peak period Trips	AM Direction Distribution		PM Direction Distribution		AM		PM	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
Commercial Activities	Childcare	16	50%	50%	50%	50%	8	8	8	8
	Café	6					3	3	3	3
	Convenience	11					6	6	6	6
	Retail	33					17	17	17	17
Total							***33***	***33***	***33***	***33***

Table 9-4:: Commercial Node: Option B - : Trip Distribution

Activity		Peak period Trips	AM Direction Distribution		PM Direction Distribution		AM		PM	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
Residential	18 Dwellings	15	25%	75%	75%	25%	4	11	4	11
Total							***4***	***11***	***4***	***11***

As can be seen, with the change in trip distributions, the overall number of trips expected from Option B is less than Option A.

9.4 Assessment of Wider Traffic Effects

At a basic level, the key difference between Option A and Option B is a reduction in trip generation. However, this comparison does not consider the broader network benefits associated with a mixed-use development. The inclusion of a commercial centre can generate a variety of advantages for traffic generation and the transport network, including:

- **Internal trip capture**, where residents and workers can meet their daily needs within the development, reducing external traffic volumes.
- **Reduced peak-hour traffic volumes**, as mixed-use areas can distribute traffic more evenly throughout the day due to varied land uses.

- **Encouragement of active travel,** with shorter travel distances supporting walking and cycling.
- **Improved trip efficiency**, with opportunities for trip chaining (e.g., combining errands with commutes) reducing the total number of vehicle trip.

Given the limited area of commercial activities, and the relatively low employment numbers expected in the commercial area, the net effect would be similar between the two scenarios.

As such this scenario can be supported with the same infrastructure upgrades as proposed under the commercial scenario. This includes the upgrade to pedestrian facilities on Station Road and the provision of a new intersection with Station Road and the Spine Road.

9.5 Access

The majority of the lots are proposed to be served by separate vehicle crossings, with Lots 5 and 6 sharing a JOAL, and Lots 7 and 8 sharing a JOAL. These have been provided with rear access to reduce vehicle crossings on the main spine road through the development. The JOAL widths are 4.0m and compliant with Table 3.1 of the MPDCDM.

9.5.1 Crossing Separation

Table 3-B of the MPDCDM shows the minimum vehicle crossing separation standards. For a local road with an 85th percentile operating speed of 50 km/h, the MPDCDM states that one crossing is permitted per title irrespective of spacing, and 15.0 metres minimum spacing for second or multiple entrances. There is no requirement for separation between neighbouring lots.

It is proposed each dwelling has no more than one vehicle crossing, and therefore all dwellings comply with the MPDC DM.

9.5.2 Crossing Distances from Intersections

Table 3-C of the MPDCDM shows the minimum separation between vehicle crossings and intersections. For a road with an 85th percentile operating speed of 50 km/h, the MPDCDM states that 20 metres of separation is required (as measured from the centreline of the intersecting road).

Lot 18, Lot 17 and Lot 16 are located within 20m of the intersection. This is considered to be acceptable for the following reasons:

- One of the arms of the intersection leads to the Southern Solar Farm, and as such is expected to experience low traffic volumes
- The crossings are located opposite the intersection arm with good sight distances available.

9.5.3 Crossing Design

MPDC DG 308 shows the vehicle crossing design for all urban vehicle crossings. The proposed vehicle crossing designs will comply with these designs in the urban areas.

9.5.4 Crossing Sight Distance

Vehicle crossing site distances have been assessed for all residential lots. All vehicle crossings provide sufficient sight distances, of at least 28m as per Table 3A of the MPDC DM.

9.6 Parking

9.6.1 District Plan Parking Requirements

The MPDP requires that two parking spaces per dwelling are provided.

Residential parking is proposed to be contained on site for each dwelling. With the sites ranging in size from 360m^2 to 422m^2 there is sufficient on-site space to provide for parking a variety of ways to meet the MPDP requirements.

9.7 Commercial Node: Option B Summary

By way of summary, the additional residential scenario assessed finds that while a commercial hub would likely have wider network benefits, the overall effect of this difference would not require additional road upgrades.

The overall design of the residential option is largely compliant with the relevant standards, with the exception of several vehicle crossings located in proximity to an intersections. These are however found to be acceptable as they are on the opposing side, the speed environment is slow and appropriate sight distances are provided.

10 Integration with Policy and other Frameworks

10.1 Government Policy Statement on Transport (GPS 2024)

The Government Policy Statement on Transport (GPS 2024) sets four strategic priorities for Transport. These priorities include:

- Economic Growth and Productivity
- Increased Maintenance and Resilience
- Safety
- Value for Money

The Government's main priority is to boost economic growth through efficient land transport investment, enabling faster, safer movement and better access to housing land. The proposal provides increased housing options for Matamata, enabling growth while leveraging from the existing roading network. Assessment of the road network, demonstrates that the increased housing supply can be provided, with negligible impact on the efficiency of the surrounding road network. As such, it is considered that the proposed development is well aligned with the GPS for transport.

10.2 Waikato Regional Land Transport Plan (RLTP 2024 - 2054)

The strategic objectives of the 2024 Waikato RLTP are summarised in below. As shown, the proposed development is well aligned with these objectives.

Figure -10-1: Waikato RLTP Objectives

Objective	How the proposal meets the Objectives
Climate change–an environmentally sustainable, energy efficient and low-carbon transport system that delivers emissions reductions and enhances communities long-term resilience to the effects of climate change.	The proposal includes a solar farm to generate clean, renewable energy and reduce reliance on carbon-based sources. A walkable layout encourages short trips by active modes, supported by a local retail centre that reduces the need for vehicle travel.
Resilience– an efficient and resilient land transport system that ensures communities have route security and access to essential services.	The development features a connected street network with multiple access points, providing alternative routes and improving network resilience. It also allows for future connections to adjacent developments, supporting long-term growth and accessibility.
Growth and economic development– an integrated transport system that supports compact urban form and planned future growth; AND an efficient and resilient strategic corridor network that advances regional economic and social wellbeing	Located next to the existing urban area, the development provides direct links to Matamata town centre and regional transport corridors. It includes a mix of housing types, including a large retirement and aged care facility, supporting diverse housing needs and long-term social wellbeing.
Accessibility and transport options an integrated transport system that provides transport options for differing community access and mobility needs	A comprehensive network of footpaths, shared paths, and recreational trails supports walking and cycling, ensuring accessible transport choices for residents of all ages and abilities
Safety– a safe, accessible transport system in the Waikato region where no one is killed or seriously injured.	The development has been designed to prioritise safety and provides facilities for pedestrians and a shared path on the Spine Road, reducing the risk of serious injuries

10.3 Matamata-Piako District Plan objectives, policies and rules.

The following table provides an assessment of the proposal against the Transportation Objectives of the Matamata Piako District Plan: Part 3.8 Transportation. As shown, the proposed development is consistent with the objectives of Part 3.8.

Table 10-1: Assessment of Development Proposal against MPDC Transport Objectives

Objective	
O1: The strategic importance of significant transport infrastructure is recognised	The proposed development recognises the importance of strategic transport connections, with all access points designed to connect via existing intersections or new upgraded intersections that preserve through-movement along key corridors.
O2: A safe, efficient, integrated, and environmentally sustainable transport network that ensures our social, economic, and cultural wellbeing.	The development layout prioritises efficiency and connectivity, offering multiple access points and supporting logical extensions to the wider network over time. Active transport modes are encouraged through the provision of footpaths, shared paths, and a recreational trail, reducing car dependency and supporting environmental sustainability. The inclusion of a solar farm contributes to low-carbon energy use within the development, aligning with broader climate goals.
O3: The avoidance, remediation or mitigation of the adverse effects of transportation.	Assessments completed within this ITA has identified that the existing infrastructure can accommodate the expected traffic generation without adverse effects.
O4: To ensure that those activities that place demands on the roading network contribute fairly to any works considered necessary to meet those demands.	The development proposal includes new intersections where the roading network interfaces with Station Road. From the intersection with the Spine Road through to the existing urban area, an urban footpath will be provided.
O5: To protect residential amenity from the effects of excessive traffic generation.	Appropriate vehicle crossings and sufficient parking supply has been proposed for all parts of the development.
O6: To maximise safety and convenience for pedestrians and vehicular traffic on all sites.	The roading network has been developed to provide an efficient layout with high levels of connectivity. There are safe options for pedestrians to connect to the existing urban area, or to utilise the commercial centre.
O7: Provision for parking and loading is adequate to ensure the safety and efficiency of the road network, without stifling development or leading to inefficient use of land.	Assessment of parking and loading demands in this ITA has confirmed that an appropriate level of parking has been provided in an efficient manner that enables optimised land development.
O8: To encourage the provision of alternative transportation networks where it is clearly	Footpaths and a shared path, and a recreational path through greenway have been provided to

demonstrated that the provision of such networks will positively benefit and enhance the environment and community which they serve.	encourage local trips by active modes. A footpath will be provided on Station Road to connect with the existing footpath facilities.

10.4 Structure Plan Requirements

An assessment of the Structure Plan requirements has been provided in Section 5.3.2

11 Construction Traffic

The development site is currently rural residential, and while detailed earth works calculations have not yet been undertaken, the site is expected to be generally balanced in terms of cut and fill.

As is typical with a development of this scale, it is recommended that should consent be approved, a Construction Traffic Management Plan (CTMP) should be required as a condition of consent. A draft CTMP has been completed and is attached in Appendix C.

Based on experience of constructing similar projects and bearing in mind capacity within the existing road network, with the appropriate Construction Traffic Management Plan in place and the below measures implemented, it is considered that construction activities can be managed to ensure any generated traffic effects are appropriately mitigated.

12 Infrastructure Assessment and Implementation Plan

The proposed development is largely offline from the surrounding road network; however, several infrastructure improvements are proposed as part of the development and are summarised below.

Table 12-1: Implementation Plan

Proposed Upgrade	Responsibility	Final Owner	Trigger
New roading network to serve residential development	Developer	Matamata Piako District Council	Staged delivery coordinated with residential development
New Roading network to serve retirement village	Developer	Retirement Village Operator	As development occurs
New intersection with Station Road and Proposed Residential area	Developer	Matamata Piako District Council	Final development stage
Upgraded southern side of Station Road between existing urban edge and Spine Road intersection, including footpath	Developer	Matamata Piako District Council	Intersection of Spine Road and Station Road
New intersection to access Retirement Village on Station Road	Developer	Matamata Piako District Council	As development occurs
Rural Footpath to be provided on Station Road from new access with Retirement Village to proposed intersection on Station Road with new Spine Road on southern side of the corridor.	Developer	Matamata Piako District Council	Intersection of the retirement village access with Station Road.

13 Consultation

Consultation has been undertaken with MPDC and NZTA during the preparation of this application.

This included providing MPDC providing feedback on the referral memo prepared to support this Fast Track application. This feedback included commentary on the requirement for a Broad ITA in accordance with the MPDC District Plan. This commentary has been incorporated into this report.

Consultation with NZTA confirmed that no concerns were raised with the proposed development.

14 Detailed Design Recommendations

Based on this assessment the following design refinements have been identified for inclusion in the next detailed design iteration.

- Driveway for Lot 123 location be reconsidered, and pushed to the further boundary edge to maximise sight distance available
- Review the location and provision of pram crossings on all intersections and consider locations with regard to rain garden locations. This will include reviewing all crossing sight distance requirements for proposed pram crossings
- Tracking for heavy vehicles and detailed design for the Station Road upgrades
- Road 1 and Road 7 and Road 1 and Road 10 do not meet the required sight distance standards. It is recommended that street furniture and vegetation be avoided at these intersections, and that traffic calming be investigated.

15 District Plan Non Compliances

The proposed development is intended to be constructed to an urban standard however is located in a current rural zoning. All non-compliances against the rural zone rules for the residential, retirement village and solar farm components have been assessed and listed in Appendix D.

16 Conclusions

The proposal seeks to provide a multiuse development with four key precincts providing for a range activities including residential dwellings, a retirement village, small commercial hub and two areas of solar farms.

Included in this development are the following activities:

- 518 residential dwellings,
- A 0.75ha area of commercial activities,
- Two lifestyle dwelling properties,
- A retirement village of approximately 218 units and 71 care beds; and
- Approximately 27 ha of solar farm activities in two areas.

An additional scenario has also been assessed, where the commercial area is replaced with 18 residential dwellings.

This assessment has considered the transport effects of the development and following this assessment finds:

- The site is reasonably well located from a walking and cycling perspective, and within 25mins walk is the town centre and local schooling options;
- No traffic safety issues have been identified near the proposed development. Given the local residential nature of the surrounding roads, the proposed development is considered unlikely to exacerbate the road safety in any way both during construction and once the development is completed;
- The key intersection anticipated to be used by residents to access the wider area and road network is Jellicoe and Firth Street until such time that a new intersection is provided on Station Road. Intersection modelling shows that this intersection will be able to accommodate the additional trips generated by the proposed residential development;
- The internal road layout and cross-sections largely comply with MPDC DM standards for an urban context and are considered be appropriate. Where there are deviations from these standards, it is considered that these do not result in operational or safety effects on the road network;
- All waste is expected to be accommodated on-street via public collection;
- Subject to detailed design refinements, all vehicle tracking shown in Attachment B is considered acceptable;
- The additional residential scenario assessed has found that while a commercial hub would likely have wider network benefits, the overall effect of this difference would not require additional road upgrades.
- The effects relating to construction are temporary and the site is well positioned for safe and efficient access for construction vehicles;
- An updated CTMP as described in Appendix C should be a condition of consent.

Overall, there is no reason to preclude acceptance of the proposal as currently intended, subject to the recommendations made above. Accordingly, it is concluded that there are no traffic engineering or transportation planning reasons that would preclude the development of the subject site as proposed.