3. TRAVEL PATTERNS

3.1 Traffic Volumes

Traffic Design Group commissioned manual turning count surveys at six intersections close to the Plan Change site and recorded all movements during the morning and evening peak periods on the 5th September 2007. The survey counts and derived movement counts are shown in Figures 2 and 3.

During the morning peak hour from 0800 to 0900, the survey recorded 421 vehicles entering Prebbleton from the south along Springs Road and 528 leaving Prebbleton travelling north. The additional 107 vehicles is largely accounted for by vehicles starting their journeys in Prebbleton, estimated as 75. The remainder turned onto Springs Road from either Blakes Road or Tosswill Road. The numbers of vehicles entering Prebbleton from the north on Springs Road and leaving to the south are very similar at about 480vph. Between Blakes Road and Tosswill Road, the southbound traffic volume increases to about 500vph because of vehicles turning right from Blakes Road onto Springs Road. The decrease in the westbound traffic volume and increase in eastbound traffic volume on Blakes Road between Springs Road and Norris Street can be attributed to the school. It is likely that a number of trips will terminate at the school during the morning peak period as this coincides with the start of the school day. It is also probable that people are dropping off children and then performing a U-turn to return to Springs Road. On Springs Road between Blakes Road and William Street, the changes in northbound and southbound traffic volumes is likely to be due to the shops that are located nearby.

The evening peak hour occurred between 1630 and 1730. Northbound traffic volumes on Springs Road show less growth through Prebbleton than in the morning peak with volumes increasing from 460vph to 500vph. The pattern of southbound traffic volumes in the evening is very different to the morning with the volume falling from 470vph to 400vph. While some of this decrease can be accounted for by trips ending in Prebbleton, there is also a large number of vehicles leaving Prebbleton on Tosswill Road.

The survey shows that Springs Road carries a peak two-way traffic volume of about 1000vph between the Blakes Road intersection and the Tosswill Road intersection. The two busiest intersections in Prebbleton are at Blakes Road and Tosswill Road with about 170 and 150 turning movements per hour respectively.

A comparison of the observed counts with the automated counts from October 2005 suggests that the two-way traffic volumes during the morning and evening peak periods have increased from about 900vph to 1,000vph.

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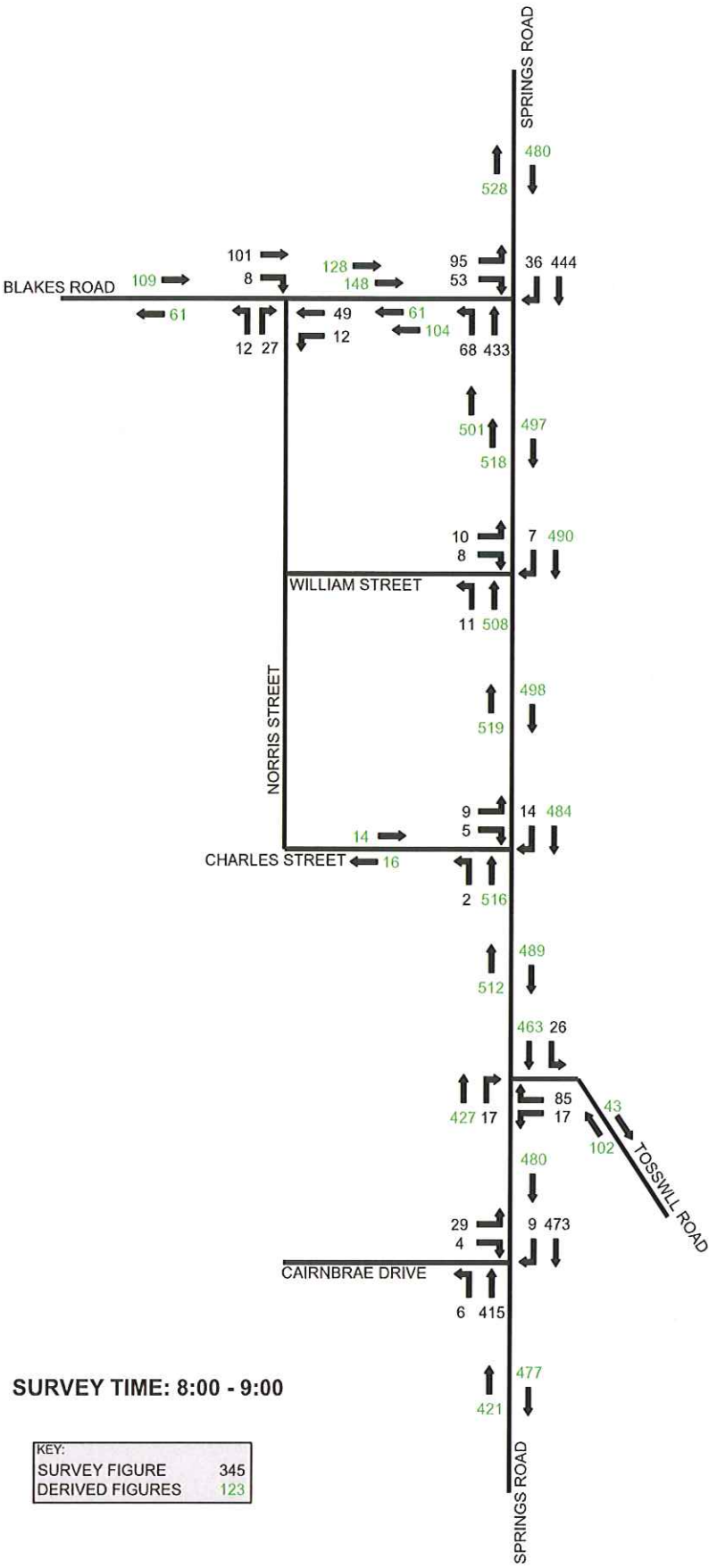


SURVEY TIME: 8:00 - 9:00

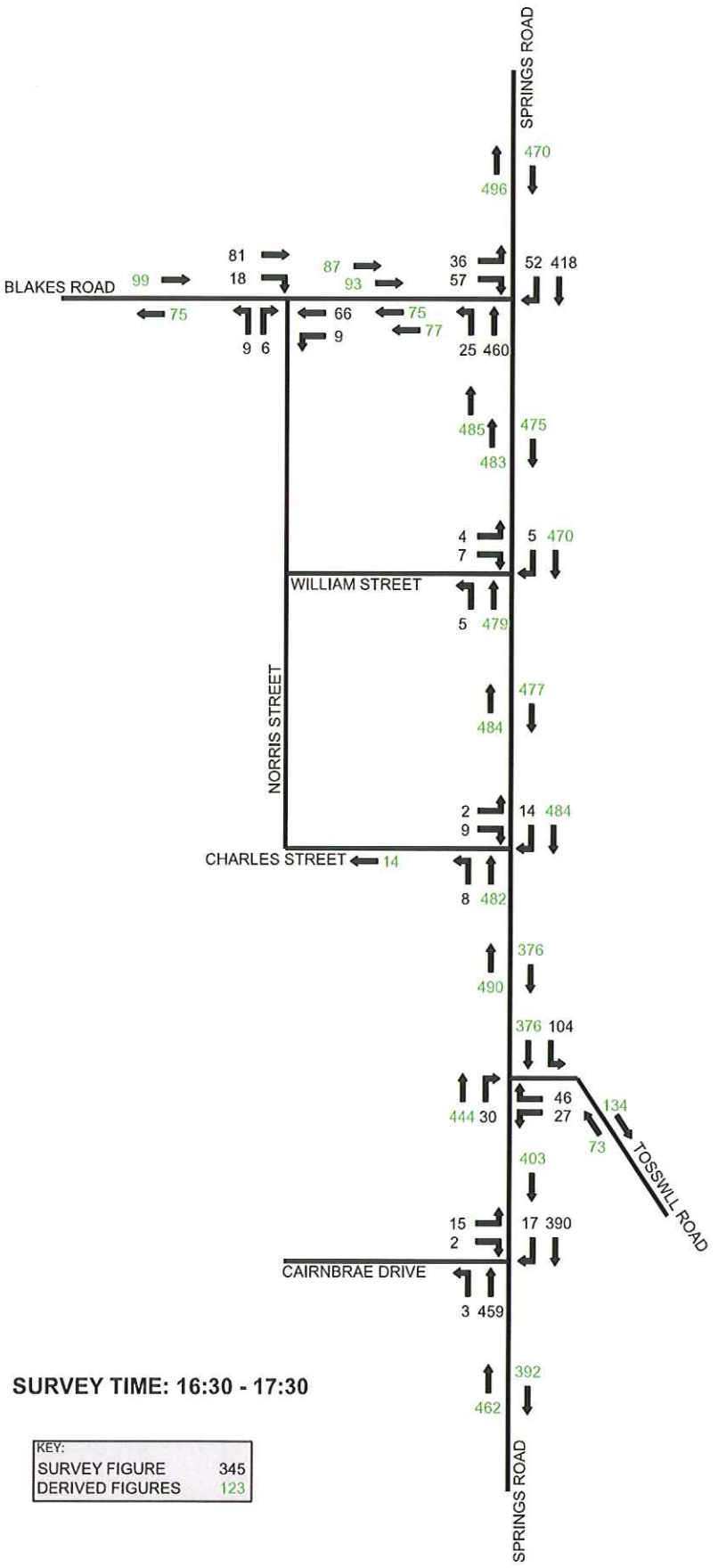
KEY:	
SURVEY FIGURE	345
DERIVED FIGURES	123

TURNING MOVEMENTS

AM PEAK

TRAFFIC DESIGN GROUP

2



TURNING MOVEMENTS

PM PEAK

TRAFFIC DESIGN GROUP

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3.2 Hourly Traffic Patterns

3.2.1 Springs Road

Traffic volumes and hourly volume profiles along Springs Road between Blakes Road and Hodgens Road can be determined from automated traffic count data supplied to Traffic Design Group by Selwyn District Council. The data shows that in October 2005, Springs Road carried an average of 9,200vpd during the week and 7,000vpd over the weekend. There are two distinct peaks in the flow volumes during the week, a sharp peak of 900vph between 0730 and 0830 and a broader peak of 880vph in the afternoon between 1600 and 1800. The two peaks have some differences in their directional balance. During the morning peak, about 55% of the vehicles are travelling towards Christchurch. During the evening peak, the dominant flow is away from Christchurch and accounts for 52% of the total traffic volume. The weekend travel pattern is very different having a single broad peak during the middle of the day with a peak hourly volume of approximately 700vph.

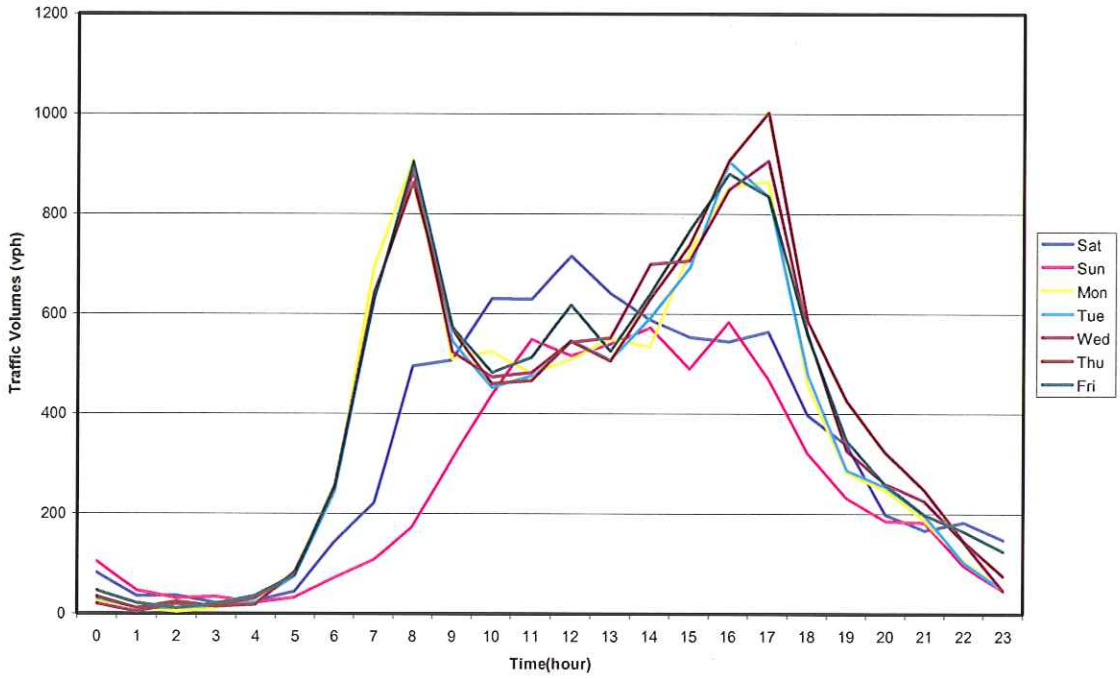

Figure 4: Hourly two-way traffic volumes on Springs Road

3.3 Heavy Traffic Volumes

Based upon the automated traffic count data from Springs Road, heavy vehicles make up 5-6% of the total number of vehicles on the road.

The traffic survey commissioned by Traffic Design Group indicated that heavy vehicles made up about 5% of the total traffic volume during the morning peak period on Springs Road and 3% during the evening peak. On Blakes Road, heavy vehicles accounted for less than 2% of the total traffic volume during both the morning and evening peak periods.

4. ROAD SAFETY

The Land Transport New Zealand Crash Analysis System (CAS) has been used to identify all reported crashes, both injury and non-injury, for the five year period ending in July 2007 in the vicinity of the development site. The search included Cairnbrae Drive, William Street, Norris Street, Charles Street, Blakes Road between Springs Road and Shands Road and Springs Road between Blakes Road and Trents Road.

A total of 14 crashes were reported for the five year period with seven injury crashes and seven non-injury crashes. The majority of the crashes, ten, occurred on Blakes Road with five of these at the intersection with Shands Road which lies approximately 1km west of the development site. The remaining four crashes happened on Springs Road. There were no reported accidents on the residential roads adjacent to the development site.

One serious injury accident was reported at the intersection of Trents Road and Springs Road when a vehicle travelling north on Springs Road hit a vehicle exiting from Trents Road which did not give way at the stop sign. A non-injury crash occurred at the intersection of Birchs Road with Springs Road when a vehicle turning right into Birchs Road lost control in wet conditions. A second non-injury crash occurred close to the shops on Springs Road when a southbound vehicle hit a manoeuvring vehicle. A third non-injury crash happened on Springs Road close to the Blakes Road intersection when the door of a truck hit a parked vehicle. This was attributed to a failure of the door catch or the door not being closed properly.

A minor injury accident was reported at the intersection of Norris Street with Blakes Road when a vehicle exiting from Norris Street did not give way to a vehicle turning right into Norris Street. A second minor injury accident was reported on Blakes Road when the driver was distracted by the passengers and the vehicle hit a fence. There were three non-injury related crashes on Blakes Road where vehicles have left the road, one of which was attributed to driver inexperience, one was attributed to excess alcohol and the third occurred when a vehicle travelling west tried to overtake a vehicle that was turning right into commercial premises.

Five incidents have been reported at the intersection of the Shands Road and Blakes Road when vehicles failed to give way at stop signs. Minor or serious injuries were recorded at four of these accidents while no injuries were reported for the other incident.

Overall, this accident record does not suggest that there are any underlying safety issues on the roads in the vicinity of the Plan Change area.

5. STRATEGIC TRANSPORTATION PLANNING CONSIDERATIONS

5.1 The Greater Christchurch Urban Development Strategy (UDS)

The Urban Development Strategy (UDS) for the Greater Christchurch Area identifies specific areas for residential development between 2007 and 2041. The associated increase in traffic volumes will require that parts of the road network be upgraded. The Regional Land Transport Strategy Greater (RLTS) and Christchurch Transportation Implementation Plan (GCTIP) have been developed to manage changes to the transport network. The GCTIP identifies two categories of transport corridor, regional and district.

While regional corridors are focused on long distance or strategic travel, district corridors relate primarily to movements with in the Greater Christchurch area. District corridors should provide users with good mode choice along the corridors but would not necessarily provide capacity for vehicles at all times.

In addition to improvements in the public transport system, nine potential packages of road network improvements have been described as part of the GCTIP. Package 7 for the South West of Christchurch and Package 8 for the Selwyn District are directly relevant to this transport assessment.

Package 7 addresses extensions to the Southern motorway including an extension of the existing motorway from Curletts Road to Springs Road. This will facilitate travel from planned growth areas such as Prebbleton and Lincoln to Christchurch CBD.

Package 8 focuses on roads within the Selwyn District around Rolleston, Lincoln and Prebbleton. The package includes enhancements to Shands Road which runs parallel to Springs Road and improvements to Springs Road between Lincoln and Prebbleton.

The proposed Plan Change will enable residential development of an area in Prebbleton that has already been identified within the UDS as appropriate for residential growth. As such, the Plan Change proposal is in line with the residential development strategy for the Greater Christchurch area and the planned changes in the transport network already take the associated growth in traffic volumes into account.

5.2 The Christchurch Rolleston and Environs Transportation Study (CRETS)

The Christchurch, Rolleston and Environs Transportation Study (CRETS) Final Report identifies shortcomings in the strategic transportation network in south and southwest Christchurch and develops a transportation strategy address these issues.

In the 2001 base year model Prebbleton had 503 households and 397 jobs. In the 2021 model the number of households was 2,000 and the number of jobs 468. Further residential growth is expected in Prebbleton and has been assessed as part of the CRETS project.

The elements of the transportation strategy that are relevant to Prebbleton are described below.

5.2.1 Springs Road

CRETS identifies traffic volumes on Springs Road and the ease of accessing and crossing Springs Road in Prebbleton as a potential issue.

The proposed transport strategy includes upgrading of a route formed by Ellesmere Junction Road, Tosswill Road, Longstaffs Road, Whincops Road route to a wide two-lane road. This route would become the district arterial in the road hierarchy of the area and would be developed to provide for travel between Christchurch and Lincoln. Although Springs Road would also remain as a district arterial its function would be to cater for travel between Prebbleton and its surrounds rather than for travel between Christchurch and Lincoln. The current physical form of the Springs Road is considered appropriate for this function and therefore no upgrades are proposed.

With the Ellesmere Junction Road route attracting traffic away from Springs Road, traffic volumes on Springs Road are expected to reduce. Figure 5 presents the traffic volumes reported in CRETS for the sections of Springs Road from Main South Road in Christchurch to Robinsons Road, south of

Prebbleton. The graph presents the 2001 base year volumes ("2001"), the 2021 transport strategy volumes ("2021 TS") and the 2021 do minimum ("2021 Do Min") volumes. The do minimum volumes are a estimate of what traffic volumes would be if the transport strategy was not in place and only essential works such as maintenance were undertaken.

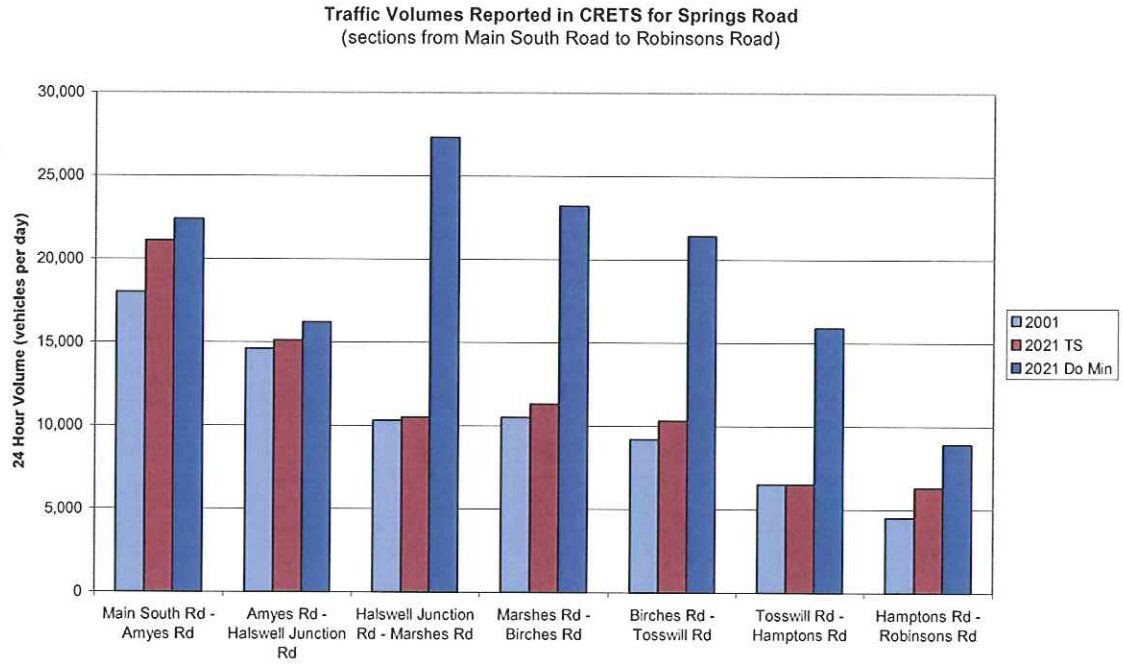

Figure 5 – CRETS Traffic Volumes for Springs Road

Figure 5 illustrates that with the CRETS strategy in place the traffic volumes on Springs Road are expected to stay at levels very similar to their 2001 values. Therefore the intersection analyses that are contained in this report, which use 2007 observed traffic volumes are expected to represent a worst case and ably describe the worst case traffic impacts of the development along Springs Road and its intersections.

5.2.2 Road Hierarchy

As described above, the CRETS transport strategy identifies a new district arterial route along Ellesmere Road. Springs Road would be a district arterial from Christchurch to Prebbleton and from Hamptons Road to Lincoln however the section in between, from Blakes Road to Hamptons Road, would become a collector road. Blakes Road, Tosswill Road and Birchs Road also become collector roads. The CRETS road hierarchy is shown in Figure 6.

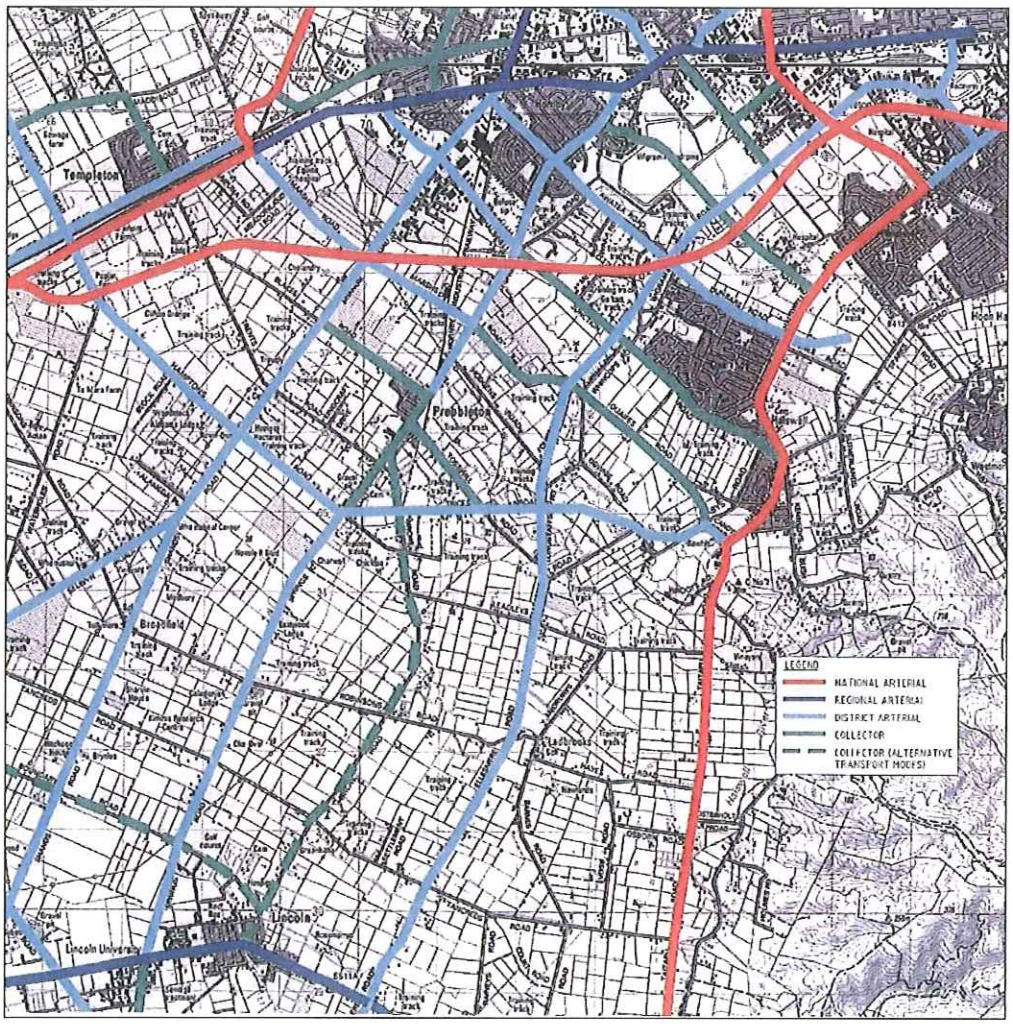

Figure 6 – CRETS Transport Strategy Road Hierarcy (Source: CRETS Final Report)

6. PROPOSED PLAN CHANGE

6.1 Existing Site Use

At present, the Plan Change area is a green-field site and is shown in Photograph 9.

Photograph 9: View of development site from the North

6.2 Proposed Site Use

The Plan Change from Rural to Living zoning will enable approximately 212 residential properties to be constructed. The site will include new local roads which will connect to Cairnbrae Drive, William Street, and Blakes Road as well as a connection through to Warratah Park. The internal road layout will be developed has part of the detailed design stage of the project, however an indicative layout is presented as Figure 7.

6.3 Travel Demand Management

While it is recognised that the development of the site will lead to an increase in car trips to and from the area, the increase is not considered sufficient to justify the development of a specific travel plan. A combination of sealed footpaths on the existing and proposed roads in and around the Plan Change area will provide good pedestrian access to existing shops, schools and also to the bus stops on Springs Road.

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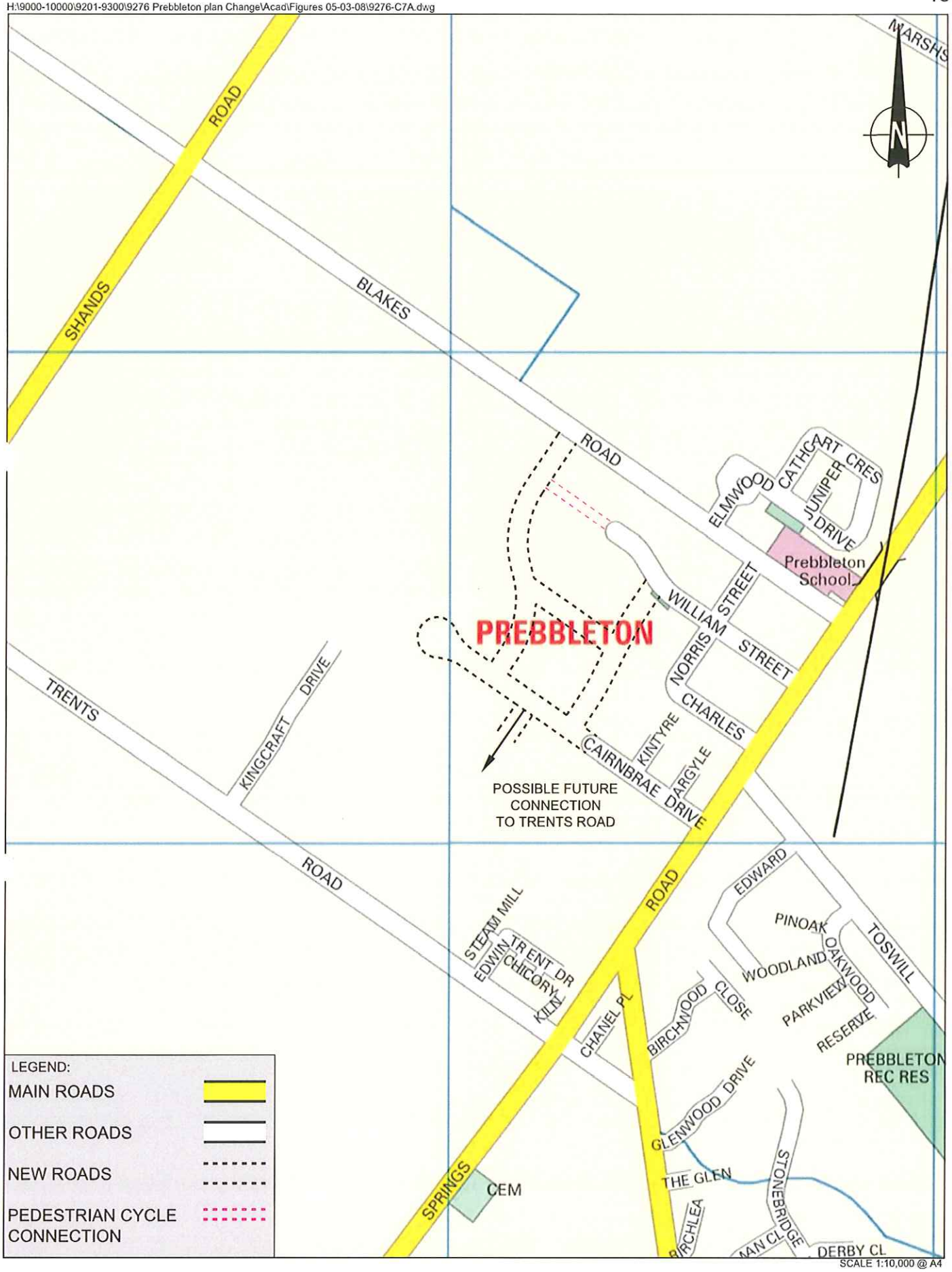

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INDICATIVE PLAN CHANGE

AREA ROAD NETWORK

7

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