ATTACHMENT B:

Addendum assessments and updated ODP

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31 May 2010

Craig Friedel
Selwyn District Council
PO Box 90
Rolleston 7643

Dear Craig

PROPOSED PLAN CHANGE 2

Since formal lodgement and notification of the above plan change, several recent policy events have influenced the relevant policy context within which PC2 is to be considered, namely:

- release of decisions on submissions to Proposed Change 1 to the Regional Policy Statement (PC1) (December 2009);
- notification of Council's Proposed Plan Change 7 (PC7) to the District Plan (February 2010); and
- adoption of the Prebbleton Structure Plan (PSP) by Council (February 2010).

The purpose of this letter is to update you on proposed amendments to PC2 in light of the above, and in response to our subsequent discussions with you.

Please find **attached** an amended Outline Development Plan, incorporating the following changes:

(i) An indicative road link now provides for future road connection to Lot 1 DP 55186 ("Trents Road Berryfarm") adjoining the south boundary. As you are aware, decisions on submissions to PC1 (subsequent to notification of PC2) have identified this adjoining land as a Greenfield Residential Area. This is also consistent with the preliminary ODP contained in the PSP.

(ii) Housing densities have been amended to avoid any uncertainty or inconsistency with the provisions of PC7. References are now:

- *Area A: 1000m^2 minimum*
- *Area B: 600m^2 minimum – 900m^2 maximum*
- *Area C: 450m^2 minimum – 550m^2 average*

As a consequence, the proposed amendments to Table C12.1 of the District Plan, as set out on page 8 of the PC2 documentation, should now read:

~~*Low Density (A) Minimum net site area of 1000m^2*~~
~~*Medium Density (B) lot size to be contained within a range of 600m^2 – 900m^2*~~
~~*High Density (C) average lot size to be contained within a range of 400 – 600m^2.*~~

Area A: 1000m^2 minimum net allotment area
Area B: 600m^2 minimum net allotment area and 900m^2 maximum net allotment area
Area C: 450m^2 minimum net allotment area and 550m^2 minimum average allotment area

In all cases development shall proceed in accordance with the ODP and shall achieve a minimum density of 10 lots/ha once the entire site has been developed.

(iii) Area B housing density has been extended along the boundary with Trents Berryfarm to achieve better integration and coordination with future development of that land, as anticipated by PC1 and the PSP. It is considered the Williams and Francis submissions provide scope for

this change. Traffic Design Group has confirmed that this change will not result in any additional transport-related effects, and evidence will be presented at the hearing demonstrating the same.

In light of (iii) above, it follows that there is no need to require a 5m building setback from the boundary with Trents Berryfarm. The 5m building setback and landscape buffer, as identified on the ODP, continues to apply along the remainder of the PC2 boundary in common with the Kingcraft Drive EDA.

The ODP continues to show no future road connection to the Meadow Mushrooms site. Evidence will be presented at the hearing as to the merits of a possible pedestrian/cycle link as an alternative.

PC2 restricts fencing to a maximum height of 1.2m along any boundary adjoining a reserve or pedestrian accessway. We confirm that our client also wishes fencing to be similarly restricted within the 4m minimum building setback from any road boundary.

As you are aware, our client is agreeable to the two mature English Oak/Quercus robur trees at 27 Cairnbrae Drive being investigated for inclusion in the District Plan through the concurrent PC18 (Protected Trees) process.

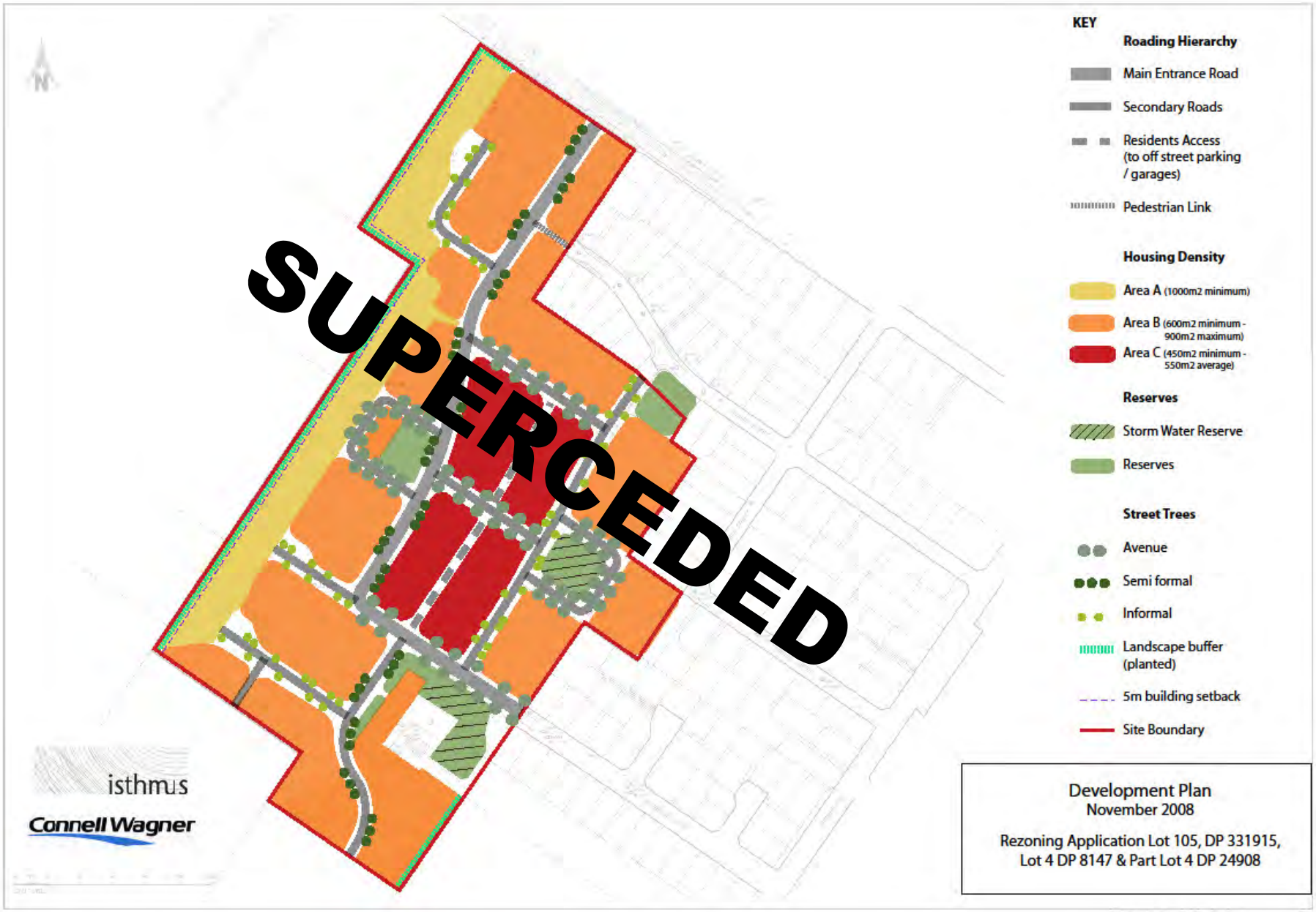
We trust you are now in a position to schedule a hearing before the Commissioner, and look forward to receiving your earliest confirmation of date/venue details.

Please do not hesitate to contact the writer if you have any questions regarding the above.

Yours sincerely

Mark Allan
Senior Planner

Encl. Amended Outline Development Plan, PC2


SUPERCEDED
KEY
Roading Hierarchy
Main Entrance Road
Secondary Roads
Residents Access (to off street parking / garages)
Pedestrian Link
Housing Density
Area A (1000m2 minimum)
Area B (600m2 minimum - 900m2 maximum)
Area C (450m2 minimum - 550m2 average)
Reserves
Storm Water Reserve
Reserves
Street Trees
Avenue
Semi formal
Informal
Landscape buffer (planted)
5m building setback
Site Boundary
isthmus
Connell Wagner
Development Plan
November 2008
Rezoning Application Lot 105, DP 331915, Lot 4 DP 8147 & Part Lot 4 DP 24908

Craig Friedel

From: Mark Allan [AllanM@ap.aurecongroup.com]
Sent: Friday, 25 June 2010 2:43 p.m.
To: Craig Friedel
Subject: PC2 - amended ODP
Attachments: ODP 2010-06-22.pdf

Hi Craig

Amended ODP **attached**, providing a road link to the Meadow Mushroom site as discussed. Please disregard earlier versions.

Regards

Mark Allan, Senior Planner | **Environment** | **Aurecon**
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William Blake Ltd & Maurice Coffey

Prebbleton Residential Plan Change

TRANSPORT ASSESSMENT

TRAFFIC DESIGN GROUP

PO Box 13-835
Christchurch
Phone : +64 3 379 2404
New Zealand

March 2010

William Blake Ltd & Maurice Coffey

QUALITY ASSURANCE STATEMENT

Prepared by:

Chris Rossiter
Project Transportation Engineer

Reviewed by:

Mike Buschl
Transportation Engineer

Approved for Issue by:

Gary Huish
Principal Transportation Engineer

Status: **Final**

Date: **10 March 2010**

TABLE OF CONTENTS

William Blake Ltd & Maurice Coffey
Prebbleton Residential Plan Change

1. INTRODUCTION

William Blake Ltd and Maurice Coffey are proposing a Plan Change for approximately 19 hectares (ha) of land to the west of Prebbleton village to convert it from Rural zoning to Residential zoning so that approximately 212 new dwellings can be created.

This transport assessment considers the implications of travel to and from the proposed Plan Change area on the adjacent network and demonstrates how any adverse effects will be eliminated or mitigated. Whilst the transport assessment includes travel by private motor vehicle, it also recognises the importance of other forms of transport. Consequently, consideration has also been given to public transport, walking and cycling.

This assessment includes updated information on traffic volumes and includes the effects of adjacent developments and road network changes that have proceeded since the original assessment dated March 2008.

2. EXISTING TRANSPORT INFRASTRUCTURE

2.1 Location in the Transport Network

The proposed Plan Change site lies to the west of Prebbleton Village on the outskirts of Christchurch City. Figure 1 shows the location of the site within the surrounding road transport network including the classifications of the Selwyn District Plan road hierarchy. The site is currently zoned Rural by the District Plan.

The Selwyn District Plan uses four main categories of road to define a road hierarchy within the district; strategic, arterial, collector and local. Springs Road from Marshs Road, 2km north of Prebbleton, to Collins Road, south of Lincoln, is classed as a strategic road while Shands Road which runs roughly parallel with Springs Road has been classed as an arterial link. Roads between Springs Road and Shands Road such as Blakes Road are considered to be local roads.

The Plan Change area will be accessed via a new intersection onto Blakes Road, a local road, while new roads within the site will connect to William Street and Cairnbrae Drive which are both cul-de-sacs.

2.2 Site Description

Prebbleton Village, which has been in existence for over 140 years, was one of the earliest settlements on the Canterbury Plains. Although now surrounded by orchards, olive groves, race-horse stables and intensive horticulture, Prebbleton has retained its traditional village character although it is only a short distance from Christchurch. Christchurch CBD is 13km from Prebbleton while Lincoln lies 8km south of Prebbleton along Springs Road. Blakes Road and Hamptons Road to the south of Prebbleton both provide links from Springs Road to State Highway 1 to the west. Tosswill Road and Birchs Road, to the east of Springs Road, provide links to State Highway 75 via Leadleys Road.

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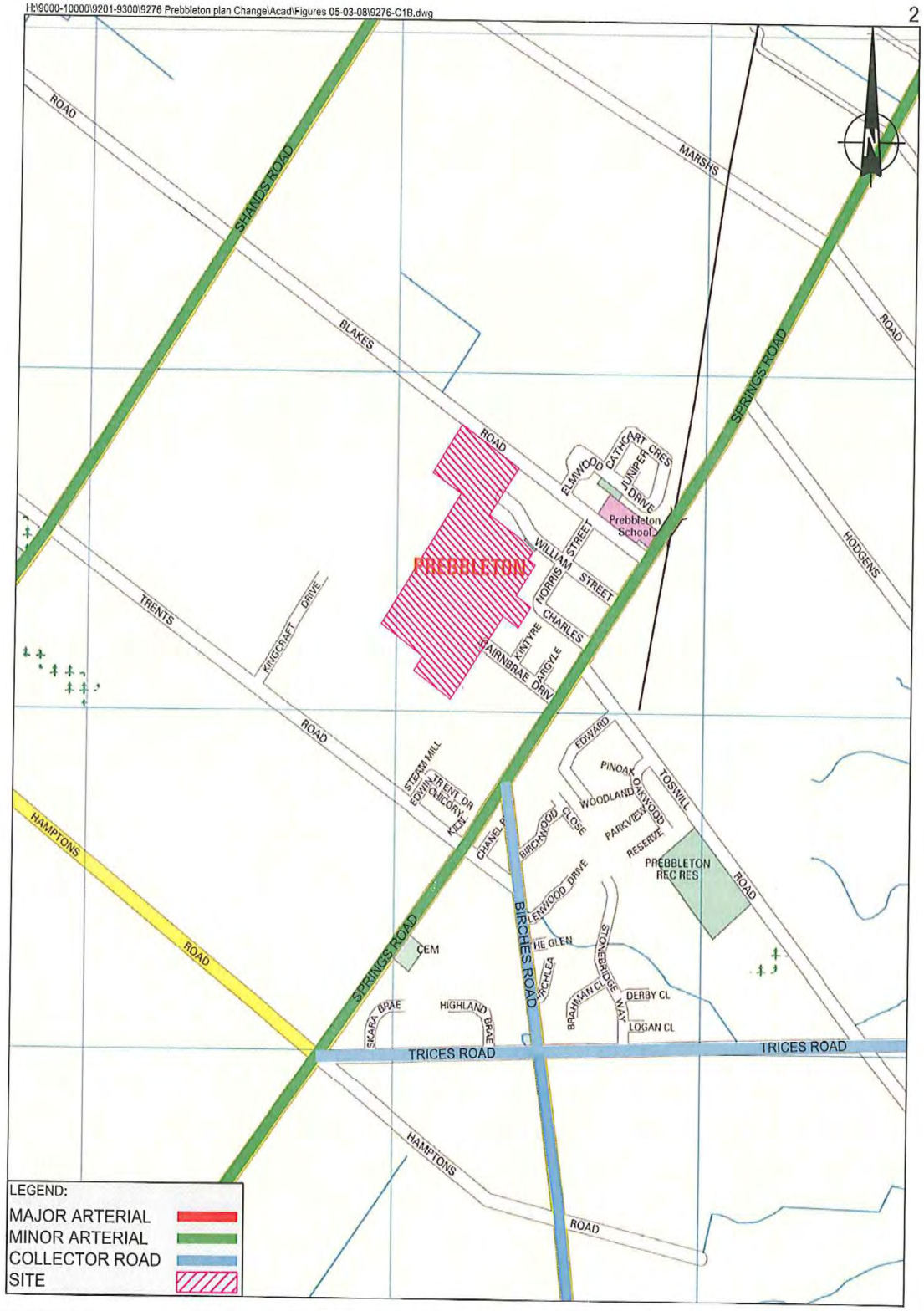


SITE LOCATION

ROAD HIERARCHY

SCALE 1:15,000

1

TRAFFIC DESIGN GROUP

The village, which is regularly served by public transport, has sporting and community facilities, is close to Lincoln University and high schools, and has its own primary school and early childhood centres. There is a Plunket centre on Williams Street close to Springs Road and a nursery on Springs Road opposite Tosswill Road. There are also children's playgrounds on Cairnbrae Drive and Williams Street. The nearest shops are on the eastern side of Springs Road between the William Street and Charles Street intersections.

The Plan Change site comprises approximately 19ha of rural land located in Prebbleton west of existing residential lots on Springs Road and south of Blakes Road. The land is currently zoned Rural but lies within a region selected for future residential development in the Canterbury Regional Policy Statement Proposed Change Number 1. While lots to the north of Blakes Road and east of the site have already been zoned as Living 2A, lots immediately to the west of the development site will remain as rural zones.

2.3 Roading Network

Springs Road runs through the centre of Prebbleton with a road width that varies between 10m and 15m depending upon whether or not a parking lane is provided. The road has a painted central median with a width 2.2m within the village boundaries and has cycle lanes marked in both directions. The speed limit on Springs Road within Prebbleton is 50km/h. Dedicated pedestrian crossing points are provided along Springs Road to ease access to shops, pubs and a repair garage (see Photograph 6 and Photograph 7).

Blakes Road west of the of the development site has a carriageway width of 6m which increases to 10m along the site frontage before increasing further to 14m east of the site. East of the site, Blakes Road includes a parking lane and a 2m central median. The parking lane ends immediately east of the site while the central median tapers down over a distance of 50m. The posted speed limit on Blakes Road is 50km/h from the Springs Road intersection to a point approximately 500m west of the intersection where it increases to 70km/h.

Photograph 1: Blakes Road close to proposed position of intersection

The intersection of Blakes Road and Springs Road is controlled by a roundabout that was constructed to provide access to the Prebbleton Central subdivision that is accessed from Springs Road and Tosswill Road. The first stage of the subdivision has been developed since the original transportation assessment for the proposed Plan Change was completed and the effects of Stage 2 of this development are evaluated in Section 11 of this updated assessment.

Cairnbrae Drive is a currently a cul-de-sac with two small side-roads that provides access to approximately 40 dwellings. The carriageway is 8m wide and has a footpath on one side only. The road joins Springs Road at a simple priority intersection. No turn lanes are marked at the intersection but Springs Road does have a 2m wide central median at this location so it is possible for right turning vehicles to move out of the way of through traffic.

Photograph 2: Intersection of Cairnbrae Drive and Springs Road

Williams Street, Norris Street and Charles Street are local roads located to the East of the site and provide access to approximately 85 residences. Charles Street and Williams Street end at priority intersections with Springs Road. As with Cairnbrae Drive, no turn lanes are marked but the central median on Springs Road is wide enough for right turning vehicles to move out of the way of through traffic. Norris Street joins Blakes Road at a simple priority intersection where a right turn lane is provided for vehicles entering Norris Street from Blakes Road; No left turn lane is provided.

Photograph 3: Charles Street intersection with Springs Road

Photograph 4: William Street intersection with Springs Road

Photograph 5: Norris Street intersection with Blakes Road

2.4 Parking

On street parking is allowed on William Street, Norris Street, Charles Street and Cairnbrae Drive. Blakes Road has parking lanes marked from close to the Springs Road intersection out to the existing village boundary. While Springs Road is the main strategic link between Christchurch and Lincoln, on street parking is permitted where it passes through Prebbleton where dedicated parking lanes are provided. Right-angle, short stay, parking is provided adjacent to the shops on Springs Road.

Off-street parking is provided at the Prebbleton Childcare centre on Springs Road and also by the public house at the intersection of Tosswill Road and Springs Road.

2.5 Public Transport

Currently, there is a regular bus service operated by Environment Canterbury between Christchurch City and Lincoln that passes through Prebbleton. During the day, there are three buses per hour in each direction. A higher frequency service is provided during the morning and evening peak periods along with an express service.

The normal travel time between the City and Prebbleton is 28 minutes though the express service reduces this to 20 minutes. The one way adult fare is $3.50 though this can be reduced to $2.60 with a Metrocard.

The nearest bus stops to the site are located on Springs Road between the Charles Street and Williams Street intersections.

2.6 Footpaths and Cycle Routes

The existing roads around the site have a good network of footpaths and road crossing points. All footpaths within the vicinity of the site are tar-sealed with a width of 1.5m.

Blakes Road east of the site has footpaths on both sides of the road giving pedestrians easy access to the school and church located by the Springs Road intersection.

William Street, Norris Street and Charles Street also have footpaths on both sides of the road making pedestrian trips towards Springs Road very easy. Dedicated pedestrian crossing points are provided along Springs Road to ease access to shops, pubs and a repair garage.

Photograph 6: Pedestrian refuge on Springs Road

Photograph 7: Zebra Crossing and cycle lane on Springs Road

A footpath has been provided on only one side of Cairnbrae Drive. The footpath links dwellings on the north side of the road with two short cul-de-sacs, Argyle Close and Kintyre Close, and a children's playground that lies between them.

Photograph 8: Cairnbrae Drive

Springs Road is marked with dedicated cycle lanes in both directions. The cycle lanes begin at the Blakes Road intersection and continue through Prebbleton. The width of the cycle lanes varies from 1.2m to 2.0m between Blakes Road and Cairnbrae Drive.

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 projected movements at the roundabout at Blakes Road and Springs Road have been derived from the expected level of activity on completion of Stage 2 of the Prebbleton Central subdivision. The projected movements from a proposed child care centre on the northern corner of Blakes Road and Springs Road are also included.

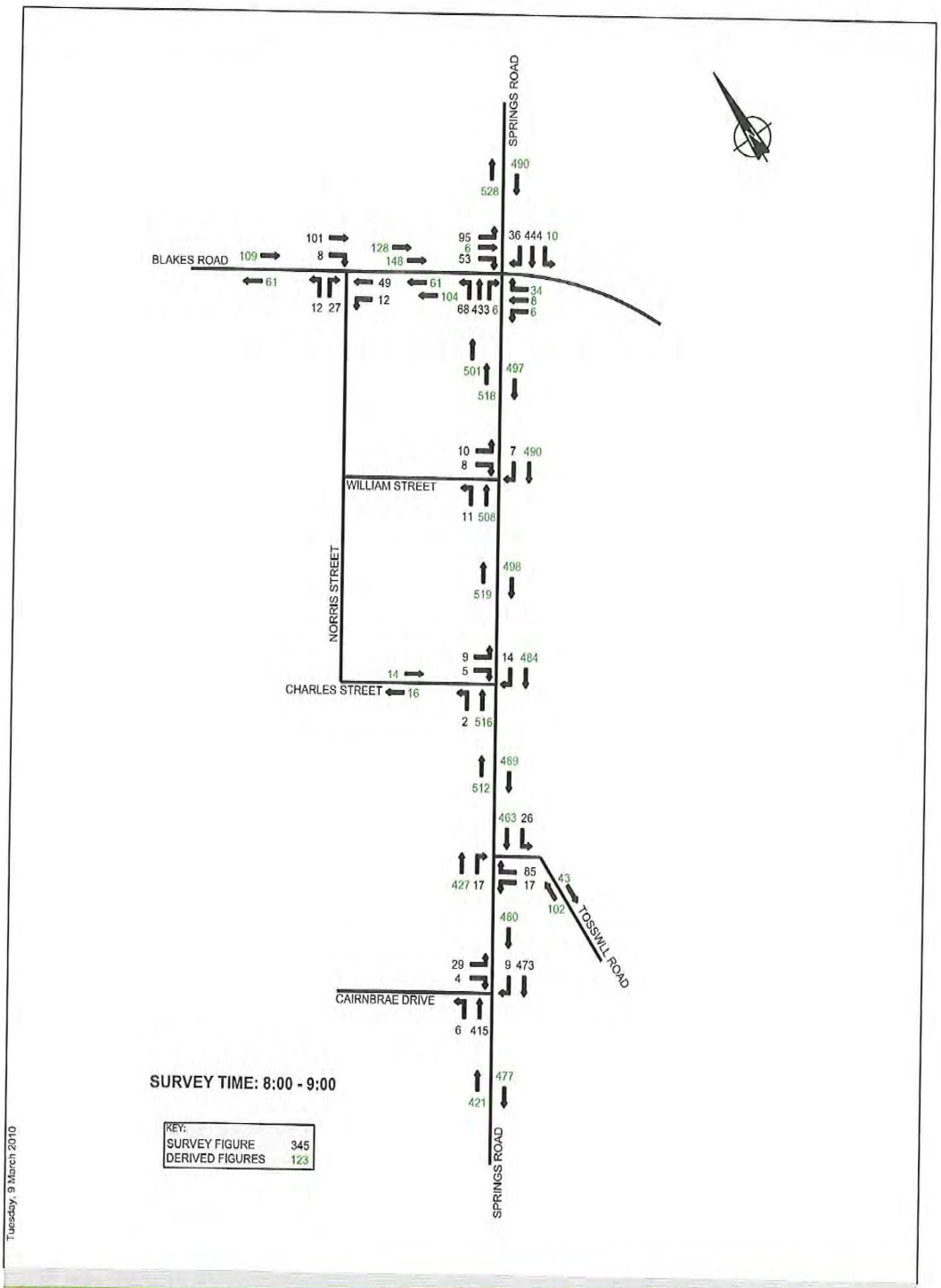
The survey counts and derived movement counts are shown in Figures 2 and 3.

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 automated counts from October 2005 suggests that the two-way traffic volumes during the morning and evening peak surveys were approximately 10% higher than the automated traffic count to the north of Blakes Road. A comparison with the latest automated count information from August 2009 shows that the increase in the automated traffic count has been less than 1% per annum over the last four years. The 2007 turning counts therefore considered to represent the current situation at the intersections on Springs Road with the modification at the Blakes Road roundabout derived from known additional developments.



Prebbleton Plan Change

Turning Movements (AM Peak)

Traffic Design Group

2

SCALE: NTS

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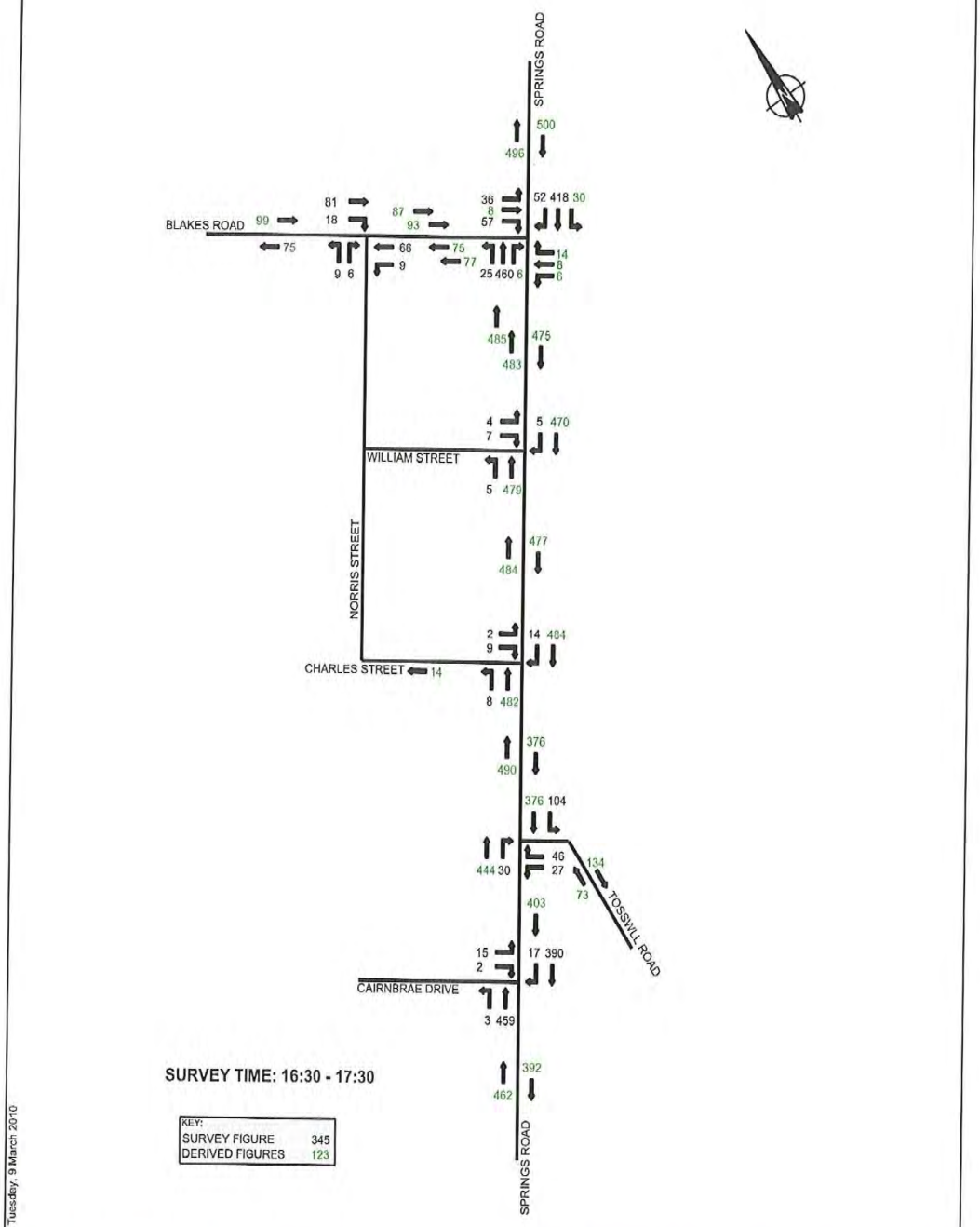

Prebbleton Plan Change

Turning Movements (PM Peak)

Traffic Design Group

3

SCALE: NTS

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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 have been 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. The latest count information from August 2009 with a growth rate less than 1% per annum is considered to result in similar hourly patterns.

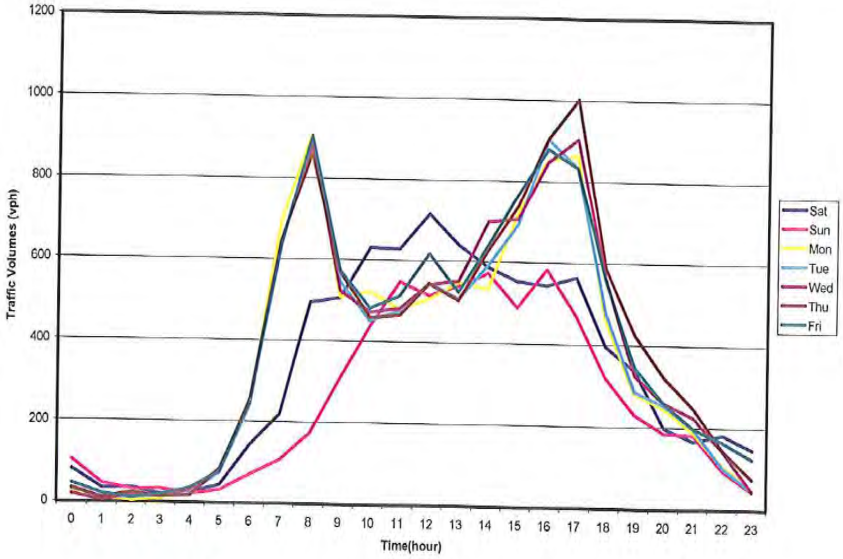

Figure 4: Hourly two-way traffic volumes on Springs Road

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 (RLTS) and Christchurch Transportation Implementation Plan (CTIP) have been developed to manage changes to the transport network. The CTIP 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.

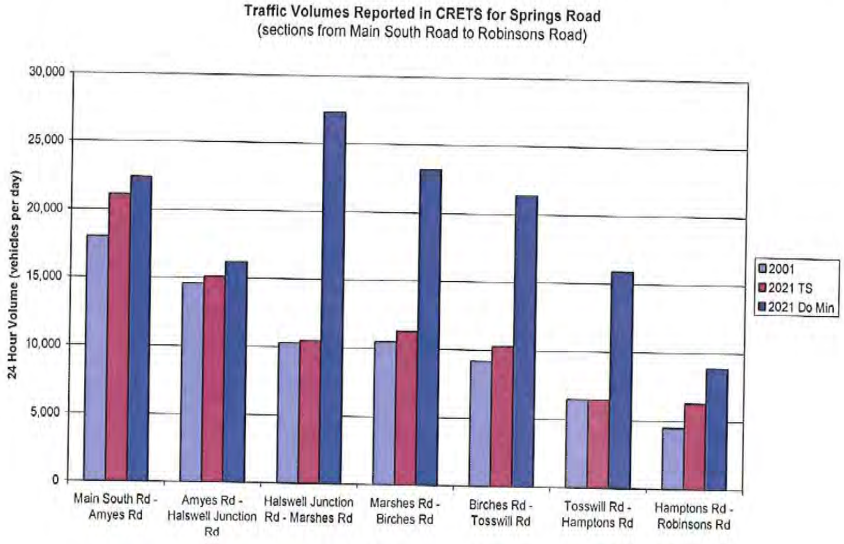

Figure 5: CRETS Traffic Volumes for Springs Road

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. This is supported by the low increase shown in the latest automatic count information from August 2009.

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.

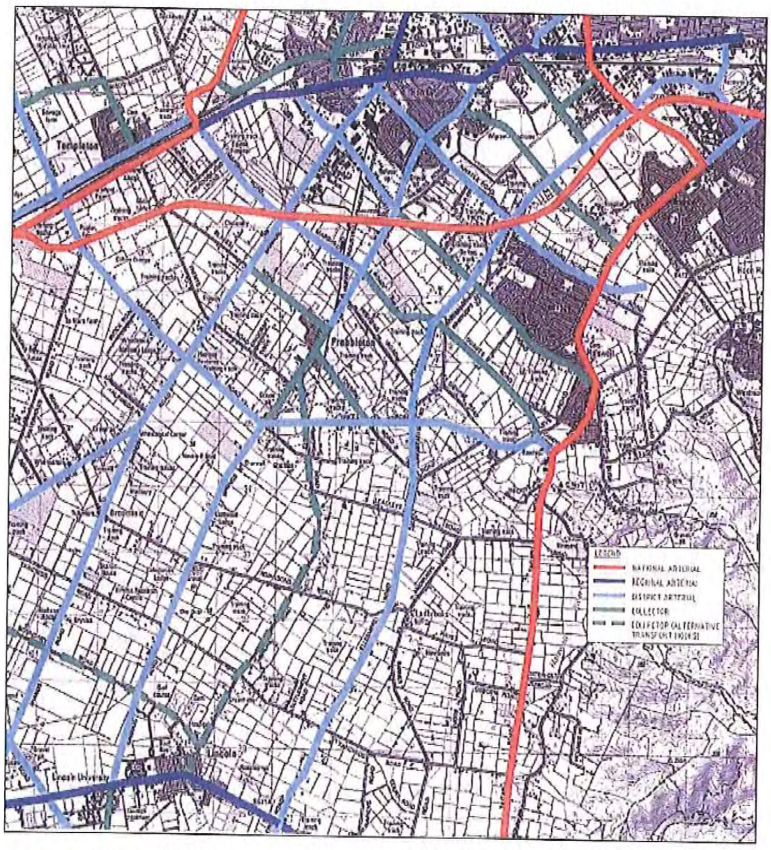

Figure 6: CRETS Transport Strategy Road Hierarcy (Source: CRETS Final Report)

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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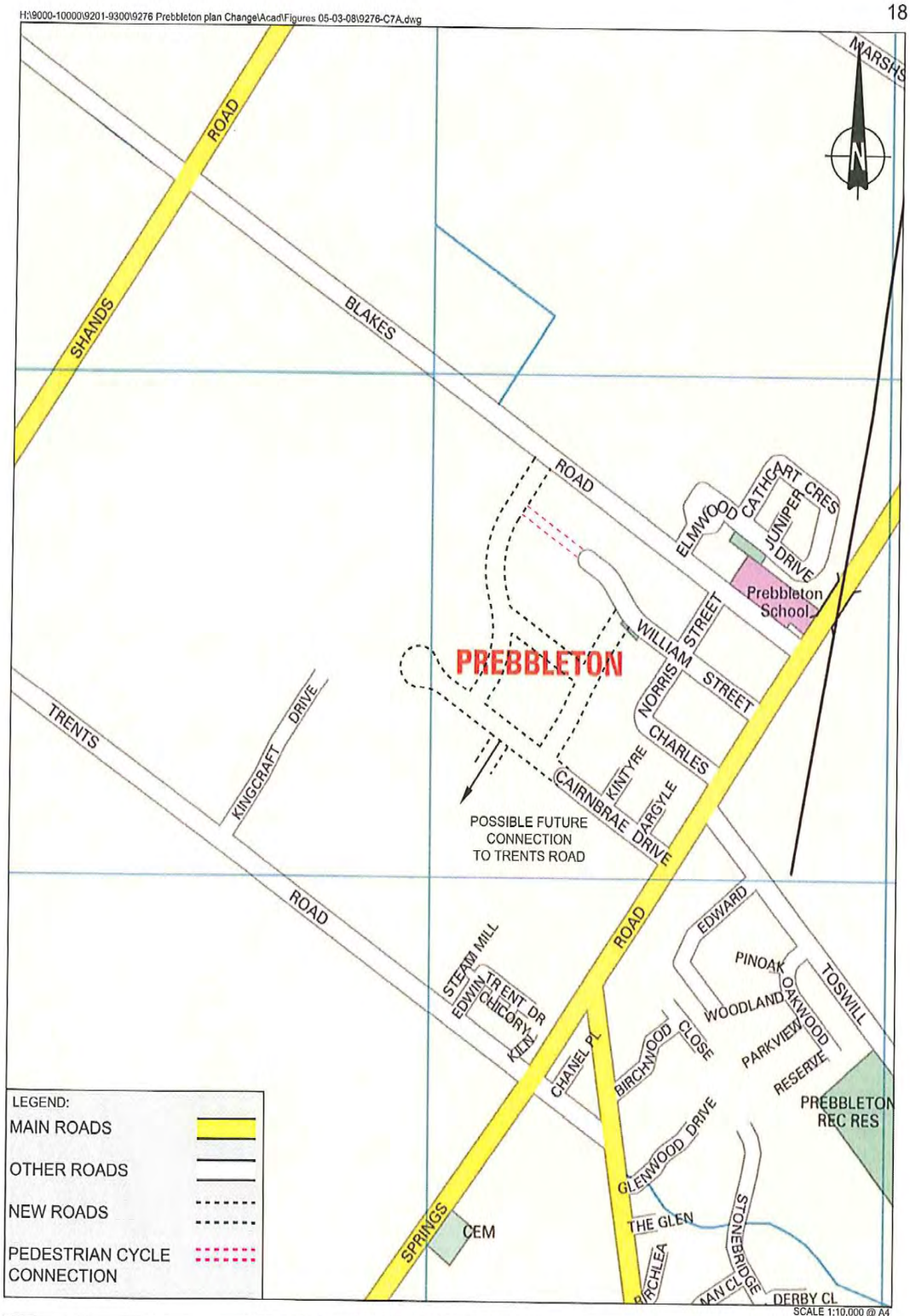

INDICATIVE PLAN CHANGE

AREA ROAD NETWORK

7

TRAFFIC DESIGN GROUP

7. DISTRICT PLAN PROVISIONS

7.1 Objectives

Proposed change number 1 (PC1) to the Regional Policy Statement (RPS), Chapter 12A, addresses the development of the Greater Christchurch area for the years 2007-2041 with specific emphasis on the period to 2026. Chapter 12A sets out the sub-regional land use distribution for Greater Christchurch and identifies specific areas for urban development. The selection of these areas has taken into account the need to ensure that the transport network remains effective and efficient.

The RPS (PC1) sets out several objectives to meet the strategic vision for 2041 described in the Urban Development Strategy for Greater Christchurch for enhanced lifestyles, enhanced environments, prosperous economies and managed growth. Objective 1 addresses urban consolidation within the Greater Christchurch area and aims to achieve sustainable and self-sufficient growth in areas such as Prebbleton. Objective 7 considers the integration of transport infrastructure and land use with goals of reducing network congestion and dependency on private motor vehicles. Objective 8 aims to protect the strategic roading infrastructure by managing patterns of urban development.

7.2 Policies

Policies 9 and 10 of the RPS are directly relevant to transport and are replicated below.

> *Policy 9: Transport Effectiveness, (a) Development of Greenfield development areas, intensification areas and key activity centres shall avoid overloading the existing transport network infrastructure, particularly strategic roads, and avoid detracting from the primary through traffic function of state highways and arterial roads; (b) The Canterbury Regional Council, territorial authorities and transport infrastructure providers shall ensure that the land transport networks within Greater Christchurch provide for the safe, sustainable integrated movement of goods and people both within the sub-region and to and from locations outside the sub-region.*
>
> *Policy 10: Strategic Transport Infrastructure and Reverse Sensitivity, Ensure urban activities do not adversely effect the operations and thus viability of strategic transport infrastructure, including: (a) Christchurch International Airport, (b) Port of Lyttelton, (c) Strategic land transport network, (d) Rangiora airfield.*

7.3 Rules

The following transport related requirements relevant to the Plan Change Proposal have been copied from the Selwyn District Plan. There is no reason why full compliance with these rules cannot be achieved within the Plan Change area.

7.3.1 Number of Parking Spaces

A minimum of two spaces shall be provided for each residential dwelling.

7.3.2 *Parking Spaces for Residential Activities*

- Garagable parking spaces for any residential activity in any zone shall have the following minimum internal dimensions:

	WIDTH	DEPTH
Single	3.1m	5.5m
Double	5.6m	5.5m

- The minimum width of the entrance to a garage shall be 2.4m.
- Any other parking space for any residential activity shall have the minimum dimensions: width 2.4m, depth 5m.

7.3.3 *Maximum Gradients for Access*

- The maximum average gradient of any access shall be 1 in 6.
- The maximum gradient shall be 1 in 4 on any straight section and 1 in 6 around curves, the gradient being measured on the inside line of the curve.
- The maximum change in gradient without a transition shall be 8°.

7.3.4 *On-site Manoeuvring*

Vehicles shall not be required to undertake more than one reverse manoeuvre when manoeuvring out of any required parking or loading space.

7.3.5 *Private Vehicular Access*

The minimum legal width of an access to a site with 1 or 2 lots in a living zone shall be 3.5m with a carriageway width of 3m.

7.3.6 *Distance of Vehicular Crossing from Intersections*

No part of any vehicle crossing shall be located closer than 10m from the nearest intersection.

7.3.7 *Minimum Sight Distances*

The minimum sight distance for intersections within Living Zones where the posted speed limit is 50km/h shall be greater than 45m.

7.3.8 *Vehicle Crossing Design*

- The maximum number of crossing per site shall be 1.
- The distance between crossings on the same side of the road shall be less than 1m or greater than 7m.
- The minimum width of a crossing for residential activity shall be 3.5m.
- The maximum width of a crossing for residential activity shall be 6m.

7.3.9 *Road Standards*

The new roads within the Plan Change Area will be classified as local roads or cul-de-sacs for which the following requirements are applicable.

- The legal width of new local roads shall be between 15m and 20m for local roads and 14m to 20m for cul-de-sacs.
- The carriageway width of new local roads shall be between 8m and 8.5m and 8m for cul-de-sacs.
- Kerb and channel shall be provided on both sides of new local roads and cul-de-sacs.
- A footpath shall be provided on at least one side of new local roads and cul-de-sacs.
- Any footpath shall be constructed as a sealed strip of 1.5m width within the berm.
- All areas of berms not sealed in footpath are to be formed in grass.
- Any cul-de-sac shall be constructed with a turning head having a minimum radius of 11m measured from kerb to kerb.

7.3.10 *Road Intersection Spacing*

The minimum distance between intersections on roads with a posted speed limit of 50km/h shall be 125m.

The design of the Plan Change area will endeavour to achieve this separation however it will also give consideration to where connections to the existing network are available, for example into Warratah Park, and to providing a layout that provides the best possible accessibility for pedestrians, cyclists and road users. These issues can be dealt with at detailed design stage.

8. TRIP GENERATION AND DISTRIBUTION

8.1 Existing Trip Generation

Cairnbrae Drive is a cul-de-sac that provides access to 37 lots. 48 turning movements per hour were recorded at the intersection of Cairnbrae Drive and Springs Road during the morning peak period and 37 turning movements during the evening peak. This gives a peak trip generation rate for dwellings in Cairnbrae Drive of 1.3vph/unit in the morning and 1.0vph/unit in the evening.

It is estimated that a total of 85 of the proposed new dwellings will use Charles Street, William Street and Norris Street for journeys between home and Springs Road or Blakes Road. The maximum number of turning movements per hour recorded at the Norris/Blakes, Charles/Springs and William/Springs intersections was 125 vph during the morning peak period and 88 vph during the evening peak period. This gives a peak trip generation rate per unit of 1.5vph/unit in the morning and 1.0vph/unit in the evening.

Combining the trip generation rates for Cairnbrae Drive, Charles Street, William Street and Norris Street gives a peak trip generation rate of 1.4vph/unit in the morning and 1.0vph/unit in the evening.

8.2 Expected Trip Generation

The Plan Change proposal will enable approximately 212 new residential dwellings to be constructed west of existing residential roads. It is expected that the trip generation rates will be very similar to those observed for the existing properties nearby. Therefore rate of 1.4vph/unit during the morning peak period and 1.0vph/unit during the evening peak period has been used in the analysis of the Plan Change.

8.3 Existing Trip Distribution

The survey data for the Cairnbrae Drive intersection with Springs Road recorded 33 vehicles exiting from Cairnbrae Drive during the morning peak hour with the majority (88%) turning left towards Christchurch and the remainder turning right towards Lincoln. A total of 15 vehicles turned into Cairnbrae Drive during the same period, nine from the north and six from the south. During the evening peak hour, 17 vehicles exited from Cairnbrae Drive with 15 heading north towards Christchurch while 20 vehicles entered Cairnbrae Drive with 17 coming from the north.

A total of 71 trips originated from residences on Charles Street, William Street and Norris Street during the morning peak period of which 12 (17%) headed towards Shands Road along Blakes Road, 46 (65%) headed towards Christchurch and the remainder (18%) went south towards Lincoln. 54 trips ended on these residential streets in the morning peak hour of which 25% originated south of Prebbleton, 15% originated west of Prebbleton and the remaining 60% will have originated from north of Prebbleton.

In the evening peak hour, 37 vehicles were recorded departing from Charles Street, William Street and Norris Street with 24% heading towards Shands Road, 43% heading south towards Lincoln and the remainder heading north towards Christchurch. A total of 51 trips ended on these streets during the evening peak hour of which 25% originated south of Prebbleton, 35% originated west of Prebbleton and the remaining 40% originated north of Prebbleton.

Based on turn counts for Cairnbrae Drive, Charles Street, William Street and Norris Street, outbound trips accounted for 60% of all trips during the morning peak period while in the evening, outbound trips accounted for only 43% of the total.

8.4 Expected Trip Distribution

The area of land affected by the Plan Change proposal has been considered as two separate areas, a northern area of 10.39Ha and a southern area of 8.4515Ha. Assuming that the 212 new dwellings are distributed uniformly across the two areas, there will be 91 dwellings in the southern area and 121 dwellings in the northern area. If the new road through the Plan Change area begins at the current limit of Cairnbrae Drive and links with Blakes Road and William Street then it is possible to make some reasonable assumptions about the routes that vehicles will take to different destinations.

The majority of trips between the southern lot and destinations north and south of Prebbleton, e.g. Christchurch and Lincoln respectively, will use Cairnbrae Drive to get onto Springs Road. A small proportion of trips will travel through the Plan Change area to access Blakes Road and destinations west of Prebbleton. It is very likely that some of the existing trips to and from Cairnbrae Drive will also take advantage of the new road to avoid travelling through the centre of Prebbleton

The pattern of trips for dwellings in the northern part of the Plan Change area is more complex because there is more route choice. In practice though, it is reasonable to assume that trips to and from the south of Prebbleton will use Cairnbrae Drive to access Springs Road. Based on the existing travel patterns, it is estimated that 70% of trips to and from the north of Prebbleton will use Blakes Road while the remaining 30% will use William Street.

In the future, there may also be some use of the connection to Warratah Park, off Cairnbrae Drive. This could change the traffic distribution slightly, however to undertake a worst case assessment on the existing intersections on Springs Road, this connection has been ignored for the purpose of this traffic assessment.

Figure 8 shows the estimated increases in turning movements at intersections close to the Plan Change area for the morning peak period.

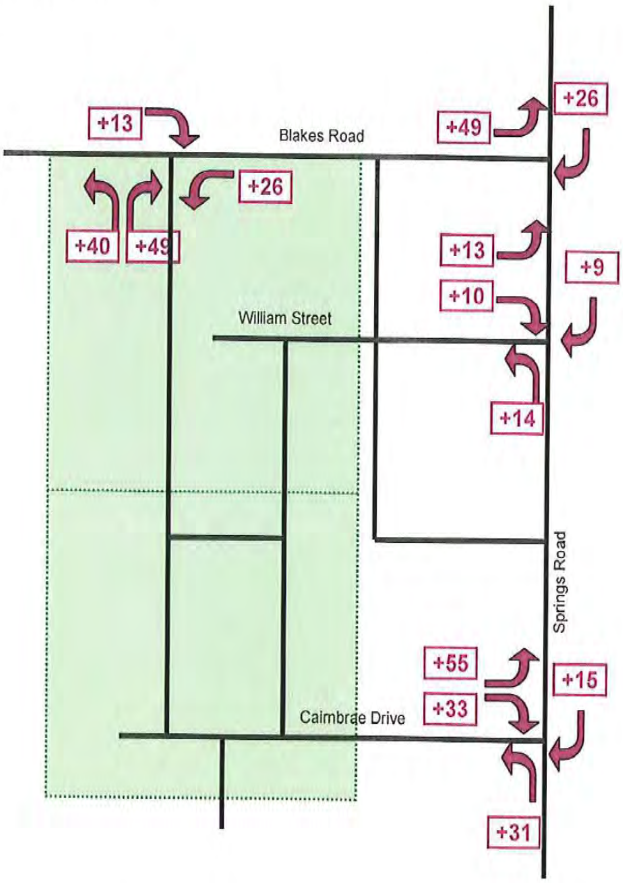

Figure 8: Predicted Changes in Traffic Distribution

8.5 Future Network Changes

The predicted changes in traffic distribution have been based on an assessment of the currently envisaged form of the road network within the Plan Change area and the existing patterns of traffic movements observed in Prebbleton.

It has been described above that the CRETS transport strategy includes changes to the road network and hierarchy in Prebbleton. Such changes could alter the expected distribution of traffic generation by the Plan Change area. Springs Road will remain as the primary route for travel between Prebbleton and its surrounds, as described in CRETS. Changes to the hierarchy for Blakes Road, Tosswill Road and Birchs Road mean that these roads could become attractive as connections to other routes such as Shands Road or the new Ellesmere Road district arterial.

These wider area traffic patterns have been addressed as part of the CRETS study which has considered residential growth in Prebbleton from 503 households in 2001 to 2,000 households in 2021.

The analysis presented in Section 11 of this report specifically assesses the intersections which provide for movement between the Plan Change area and its frontage roads, Springs Road and Blakes Road. With Blakes Road becoming a collector road more traffic could be drawn to this route rather than Springs Road. If and by how much these patterns change depends on land use development in the wider area and their timing.

Selwyn District Council staff have also indicated that other developments will occur in Prebbleton. One such proposed development, the Prebbleton Central subdivision is accessed from Springs Road and Tosswill Road. The subdivision now connects to Springs Road at the Blakes Road roundabout. A proposed child care centre on the northern corner of Blakes Road and Springs Road has proceeded to a hearing but no decision has been released. The effects of these developments have been considered in the updated analysis.

The upgrade has increased the capacity of the Blakes Road/Springs Road intersection. It also provides an option from other priority controlled intersections along Springs Road. Should any critical movements, for example right turns onto Springs Road during the morning peak period, become difficult residents of the Plan Change area would possibly re-route and use the roundabout and equilibrium between the delays at various access locations along Springs Road would be reached.

Section 11 of this report addresses the performance of the intersections in the vicinity of the Plan Change area using the surveyed traffic volumes with the expected Plan Change area volumes added. It is acknowledged that the exact distribution of these traffic volumes may change following proposed changes to the surrounding transportation network. However, following a review of CRETS it is considered the impacts of the proposed development have already been assessed and described on the wider network and in a local sense, the impacts of the development will be no worse than the 2007 assessment presented in Section 11.

9. ACCESS AND EGRESS

9.1 Road Standards

The internal road network within the Plan Change area will be developed during the detailed design stage of the project. There is no reason why full compliance with the standards of the Selwyn District Plan cannot be achieved.

Following development of the Plan Change area the section of Blakes Road along the site frontage will need to be developed to appropriate urban standards including footpaths and a 50km/h posted speed limit.

9.2 Road Intersection Spacing

The primary access point from the development site onto the road network will be on Blakes Road approximately 220m west of the Elmwood Drive intersection. The speed limit between these two intersections will be 50km/h for which the District Plan specifies a minimum distance between intersections of 125m; therefore the location of the new intersection is compliant with the District Plan.

9.3 Sight Distances

The District Plan specifies a minimum sight distance of 45m for Living Zones where the legal speed limit is 50km/h and 85m where the speed limit is 70km/h. While it is not possible to measure the sight distance at the proposed site of the new Blakes Road intersection because of the existing trees, Blakes Road is flat and straight at this location, therefore it is reasonable to expect the sight distance to exceed 45m to the east where the speed limit is 50km/h and 85m to the west where the speed limit is 70km/h when the intersection has been constructed. The potential sight lines are shown in Photographs 10 and 11 below.

Photograph 10: Potential sight line west from Blakes Rd Intersection

Photograph 11: Potential sight line east from Blakes Rd intersection

The development will also create a new intersection with Williams Street at a point adjacent to the children's playground. The kerbs and footpaths for the new intersection are already formed and measurements at the intersection indicate that the sight distance requirements of the District Plan will be exceeded. This intersection and the available sight lines are shown in Photographs 12 to 14.

Photograph 12: William Street Access to site

Photograph 13: Sight line East from new William Street Intersection

Photograph 14: Sight line West from new William Street Intersection

It is similarly not possible to measure other sight distances within the Plan Change area such as at the intersection of Cairnbrae Drive and the new connection into Warratah Park. However, as the area is generally flat and the proposed alignment of the roads generally straight, there is no reason why the District Plan sight distance cannot be achieved in all cases.

9.4 Maximum Gradient for Vehicle Access

Under the District Plan, the maximum gradient allowed for a vehicle accessway into a development from the road is 1 in 6. Since the development lies within an area of flat rural land, it is not anticipated that any road gradients will exceed 1:20 and will therefore be permissible.

10. PUBLIC TRANSPORT, CYCLISTS AND PEDESTRIANS

10.1 Public Transport

Currently, there are three buses per hour in each direction during the day and higher frequency services operating during morning and evening peak periods along with an express service. It is expected that the demand for public transport generated by the Plan Change area can be accommodated by these services and the Plan Change would not necessitate additional services.

The existing bus service through Prebbleton uses Springs Road and Birchs Road to travel between Christchurch and Lincoln via Prebbleton. Policy 1.2 of the Canterbury Regional Passenger Transport Plan 2006 sets out that at least 90% of people resident in Christchurch shall be no more than 500m from a bus route. A distance of 500m is identified as being equivalent to about five minutes walking time.

The majority of the new dwellings within the Plan Change area will be within 500m of Springs Road and would be within the target walking distance for any existing or future bus services that operate on Springs Road.

At present the existing bus services that use the Springs Road and Birchs Road route have most of Prebbleton within 500m of them. As Prebbleton grows and the residential areas form less of a linear development pattern along these roads, different bus routes may be considered by Environment Canterbury and Selwyn District Council.

The majority of the Plan Change area is within 500m of Blakes Road as well as Springs Road, should public transport connections ever be considered along this route which connects Prebbleton and Templeton.

A connection could be provided through the Plan Change area if this was justified in the future. Possible connections include the route provided by Cairnbrae Drive, the new subdivision roads and Blakes Road, or a connection could be investigated through Warratah Park. Provision can be made in the detailed development stage of the project to provide sufficient road width and pavement strength for such options to be available in the future should they be justified.

10.2 Cyclists

The New Zealand Supplement to the Austroads Guide to Traffic Engineering Practice – Part 14: Bicycles contains guidance on the recommended cycling facilities that should be provided on new roads based upon daily traffic volumes and vehicle speed. The low traffic volume, less than 2,000 movements per day, within the site and the low speed environment, typically less than 40km/h, of the new development means that the roads within the site are suitable for mixed traffic and no specific cycling facilities need to be created.

The main cycleways along Springs Road can be accessed easily from the Plan Change area using Blakes Road, William Street and Cairnbrae Drive. The proposed internal road network has a grid layout and is therefore conducive to good cycling permeability. A pedestrian and cycle link is provided at the end of William Street to connect to the new subdivision road.

10.3 Pedestrians

The proposed road layout within the Plan Change area will include provisions for pedestrians in accordance with the District Plan internal road layout requirements. The footpaths within the Plan Change area will be able to connect with the existing footpaths on William Street and Cairnbrae Drive. On Blakes Road the existing footpaths east of the new intersection will be extended up to the new intersection to facilitate access to the school and church.

The proposed internal road network has a grid layout and is therefore conducive to good pedestrian permeability. A pedestrian and cycle link is provided at the end of William Street to connect to the new subdivision road.

Other opportunities for pedestrian connections may arise during the detailed design of the Plan Change area and these can be pursued by the Applicant and Selwyn District Council.

11. EFFECTS ON THE TRANSPORT NETWORK

11.1 Effect of Development Traffic on Road Network

11.1.1 Cairnbrae Drive/Springs Road Intersection

Cairnbrae Drive provides the main route south from the Plan Change area and as a result, traffic volumes along this road will increase. Based on the predicted trip distribution, the peak two-way volume is predicted to increase from 48vph to 182vph. Analysis of the intersection performance using aaSIDRA suggests that the additional traffic volumes will cause a small increase in the average delay per vehicle for vehicles exiting from Cairnbrae Drive. The estimated delay of 11 seconds/vehicle falls with the band of Level of Service B.

11.1.2 Tosswill Road/Springs Road Intersection

The Tosswill Road/Springs Road intersection carries nearly as much traffic as the Blakes Road/Springs Road intersection. The pattern of delays though is different because there are a greater number of vehicles making a right turn out of Tosswill Road than turning right out of Blakes Road. The average delay per vehicle on each movement during the morning peak period has been estimated for the current and predicted future traffic volumes using aaSIDRA. The movement having the greatest delay is the right turn movement from Tosswill Road and is estimated as 19 seconds/vehicle with current traffic volumes which represents a Level of Service C. The estimated delay per vehicle for the right turn movement increases to 22 seconds with the higher traffic volumes resulting from the residential development of the Plan Change area which remains within Level of Service C.

11.1.3 Charles Street/Springs Road Intersection

Since the new roads within the Plan Change area do not link directly onto Charles Street, the only impact on this intersection will be a small increase in the traffic volume along Springs Road resulting from vehicle trips between the northern end of the development site and Lincoln via William Street. It is estimated that the through traffic volume will increase by up to 94vph in either direction during the AM peak period. This will create a small and negligible increase in the delays incurred by vehicles entering and exiting Charles Street with all movements remaining at Level of Service B or better.

11.1.4 William Street/Springs Road Intersection

William Street is likely to be used by about 30% of vehicles travelling between the northern section of the Plan Change area and locations south of Prebbleton. An intersection analysis using aaSIDRA using the current traffic volumes provided an estimate of the average delay of 13 seconds/vehicle. With the additional traffic volumes from the residential development of the Plan Change area, it has been estimated that the average delay per vehicle will increase to 15 seconds/vehicle which corresponds to a Level of Service B.

11.1.5 Blakes Road/Springs Road Intersection

The Blakes Road/Springs Road intersection carries a higher volume of traffic during the peak hour than any of the surrounding intersections. It is estimated that the residential development of the Plan Change area will increase the traffic volume during the morning peak hour at the intersection from 1130vph to 1296vph. Analysis of the current roundabout performance has been undertaken with the addition of traffic projected to be generated on completion of Stage 2 of the Prebbleton Central subdivision. The projected movements from a proposed child care centre on the northern corner of Blakes Road and Springs Road are also included.

The analysis using aaSIDRA suggests that the greatest existing average delay for any movement is 11 seconds/vehicle and this will increase to 12 seconds/vehicle following the residential development with completion of Stage 2 of the Prebbleton Central subdivision and the proposed child care centre. Both of these delays remain at Level of Service B. These delays and level of service for the intersection occur for the right turns from the Blakes Road and Prebbleton Central approaches.

11.1.6 Norris Street/Blakes Road Intersection

As with the Charles Street/Spring Road intersection, there is not expected to be any increase in the turning movements at the Norris Street/Blakes intersection because it does not lie on the expected routing for vehicles going to or from the Plan Change area. The volume of traffic on Blakes Road will increase as a result of the proposed residential development and therefore there will be a small increase in the delays incurred by vehicles turning into or out of Norris Street.

11.1.7 Subdivision Road/Blakes Road Intersection

Analysis of the intersection using aaSIDRA suggests that the largest delays will occur on the new subdivision road as it exits onto Blakes Road. The estimated delays though are less than 10s which represents a Level of Service A.

12. CONCLUSIONS

Having undertaken a thorough investigation of all the traffic and transportation issues associated with the proposed Plan Change it is concluded that the transportation needs of the development will not have any significant adverse effects on the transportation system.

The traffic effects of the Plan Change and in particular the impact on Springs Road which provides the major transportation corridor in the area have been assessed in detail and it has been demonstrated that the proposed Plan Change can be accommodated with the retention of the existing good levels of service for road users.

In terms of the sustainable transport modes of walking, cycling and public transport the Plan Change area is well located on a public transport corridor within easy walking distance and with local shops and services also within walking and cycling distance.

It is concluded that from a transportation viewpoint the Plan Change will facilitate the establishment of an urban development that will prove to be a desirable extension of the Prebbleton Village area.

Traffic Design Group Ltd
10 March 2010