ATTACHMENT F:

Transport assessment

William Blake Ltd and Maurice Coffey
Selwyn District Council
4 June 2010

AECOM

Peer Review of Transport Assessment

Application for a Change to the Selwyn District Plan (PC2)

William Blake Ltd and Maurice Coffey

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Prepared for

Selwyn District Council

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4 June 2010

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Quality Information

Document Peer Review of Transport Assessment

Ref

Date 4 June 2010

Prepared by Jeff Owen

Reviewed by

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
Rev 1	19-Apr-2010	Final	Brendan Bisley Christchurch Transportation Manager	
Rev 2	04-Jun-2010	Final	Brendan Bisley Christchurch Transportation Manager	

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1.0 Introduction

The Selwyn District Council has engaged AECOM NZ Ltd to Peer Review the Transport Assessment prepared by Traffic Design Group for a plan change submitted by William Blake Ltd and Maurice Coffey. The Transport Assessment relates to an application to change the Selwyn District Plan (PC2) to facilitate the development of a residential subdivision. The review will also assess the submissions received and proposed District Plan amendments.

The peer review report has been undertaken on the Transport Assessment for a Change to the Selwyn District Plan (Prebbleton Residential Plan Change, William Blake Ltd and Maurice Coffey) report dated 10 March 2010 prepared by Traffic Design Group.

Traffic Design Group has prepared a comprehensive report outlining the potential traffic effects associated with the proposed designation. The report describes the existing environment including road classification, road geometry and intersections, and traffic volumes. Meeting the Selwyn District Plans requirements is also addressed.

2.0 The Proposal

The application seeks a plan change to the Selwyn District Plan to facilitate the development of a residential subdivision. The site has road frontage onto Blakes Road and is located on the western extremities of the Prebbleton Township. The site is approximately 19ha in size. The site is currently zoned Rural within the Selwyn District Plan. The application proposes to convert this zoning to Residential so that approximately 212 new dwellings can be created along with roading infrastructure.

The proposal is fully described in the Transport Assessment Report. Figure 1 shows the application site.

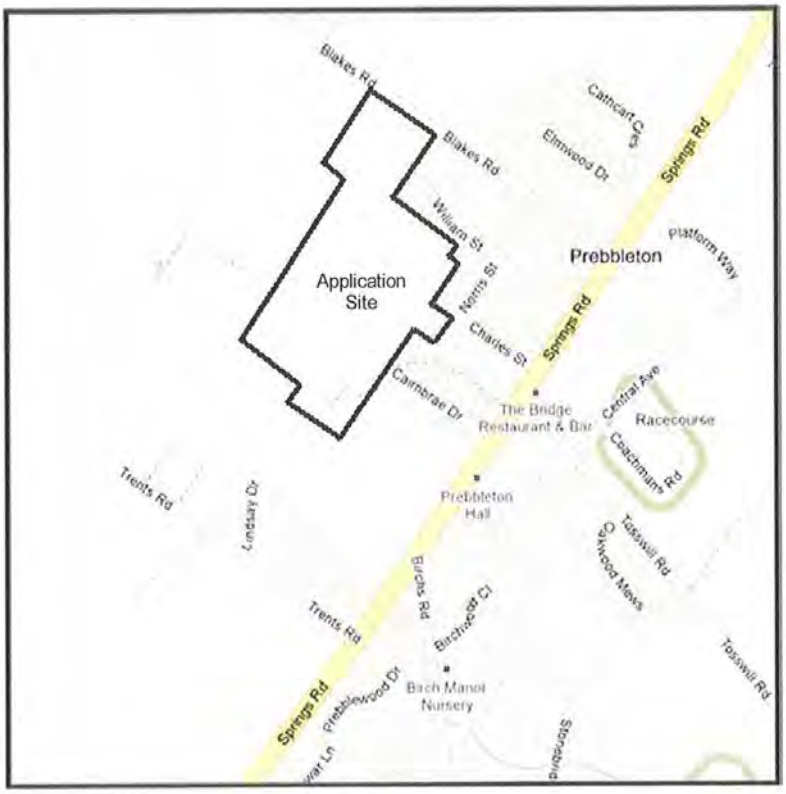

Figure 1

3.0 Traffic Effects

3.1 Road Geometry and Intersections

The main access to the proposal will form a new intersection at Blakes Road. This will be located approximately 220 metres west of the existing intersection at Elmwood Drive and will be constructed to the Selwyn District Councils requirements.

The existing 50 kph speed limit change point to 70 kph will be required to be moved west on Blakes Road. It is suggested that the existing 50 kph speed limit change point to 70 kph be moved to where the existing 70 kph speed limit change point to 100 kph occurs. The existing 70 kph speed limit could be extended west into the 100 kph speed zone. This will require the

necessary amendments to the Councils speed limit bylaw. If this proposal is approved the amendments will be actioned by the Selwyn District Council at subdivision consent stage.

The internal roading layout, intersection treatments and construction details will be approved at subdivision consent stage however the application shows an indicative roading pattern. The indicative roading pattern is consistent with the Selwyn District Plan. No details are given to the style of roads i.e. 'boulevard' or 'standard' construction. However it is stated that there is no reason why full compliance with the standards and the rules of the Selwyn District Plan cannot be achieved.

The proposal also shows roads connecting onto Cairnbrae Drive and William Street and future links onto Trents Road via Lindsay Drive and Trents Road Berryfarm.

3.2 Cycling and Pedestrian

As stated in the proposal the existing roads around the site have existing footpaths and pedestrian crossing points. Springs Road has central pedestrian islands and a zebra crossing. The local side streets are provided with at least a footpath on one side of the street. Cycle lanes are provided on Springs Road through the village. Blakes Road does not have marked cycle lanes but has a marked parking lane of sufficient width where a cyclist can ride without having to ride in the live traffic lane.

At the application site on Blakes Road there is an existing footpath on the northern side of the road. If this proposal was to proceed a footpath is to be provided on the south side of Blakes Road adjacent to the site and linking to the existing footpath east of the site access. A footpath is also to be provided west of the site access.

It is proposed to provide a cycle and pedestrian link from the end of William Street to the new subdivision road. This will provide an internal link for both cyclists and pedestrians to the villages' facilities.

3.3 Road Network

The Transport Assessment makes reference to the Christchurch Rolleston and Environs Transport Study (CRETS) and the Greater Christchurch Urban Development Strategy (UDS). These documents provide a clear view of the likely roading network needs of the area. CRETS addresses the possible expansion of Prebbleton from 503 households (2001) to

2,000 households in 2021. Therefore the future needs of the area and impact on the road network have already been addressed in that document.

The existing road network is of a good standard providing footpaths and good carriageway width. The existing volumes on these roads are low thus providing excellent level of service to the existing properties that access their dwellings from these roads. See 'Traffic Generation' for further details.

3.4 Public Transport

At present there are two bus services running along Springs Road to Lincoln. As stated in the Transport Assessment there are three buses per hour in each direction passing through the village. With the vision for Prebbleton of 2,000 households by 2021 and the growing number of household units being established now, it would be prudent to consider future bus needs. The Transport Assessment prepared by TDG does not state whether ECAN, the administrator of the public transport system has been contacted to seek their views on future bus services for Prebbleton. It is recommended that their views be sort on this need so this can be factored into the proposal.

3.5 Traffic Volumes

Traffic Design Group carried out extensive traffic counting surveys in September 2007. Since that time the traffic volume may have changed as these counts are now over two years old. In addition, Prebbleton Central, a subdivision with access off Springs Road to the east of the Blakes Road intersection has been established. To assess the accuracy of this 2007 data and the Prebbleton Central subdivision, TDG has factored in predicted traffic volumes from this subdivision and have compared the latest tube counts (August 2009) with the October 2005 counts obtained from the Selwyn District Council. It found that over this period the traffic volume in and around Prebbleton has remained stable with only an increase of 1% per annum.

It is therefore accepted that the traffic volumes used by Traffic Design Group is accurate.

3.6 Road Safety

The Transport Assessment prepared by Traffic Design Group has searched the New Zealand Transport Agency Crash Analysis System (CAS) to identify all reported crashes for the five year period July 2003 to July 2007. It found that there were 14 reported crashes in and

around the proposal site. Traffic Design Group concluded that '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'.

As the data is over two years old AECOM has carried out a new search of CAS to update this data to verify the previous findings by Traffic Design Group. The search was for the five year period January 2005 to January 2009. It was carried out on the same area as previously undertaken by Traffic Design Group and also found that there were 14 reported crashes. When comparing the two sets of crash data it was found that the type and cause of the crashes were almost identical.

It is therefore accepted that the statement made by Traffic Design Group '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' to be still relevant today.

4.0 Traffic Generation

The Selwyn District Council has advised that currently Springs Road is carrying 9500 vehicles per day (vpd) north of Blakes Road. In the am peak hour Springs Road carries around 600 vehicles leaving Prebbleton and around 500 entering Prebbleton. In the pm peak hour Springs Road traffic flows are even with around 500 vehicles entering and leaving Prebbleton.

The proposal is expected to contain approximately 212 residential households. It is known that each residential property will generate between 6 and 10 vehicle trips per day. It follows that the subdivision proposal will generate between 1270 and 2120 vehicle trips per day.

Vehicle trips per day for a residential property are known to vary between 6 and 10 trips per day. These figures give a large variance of what a potential fully developed subdivision could generate. The vehicle trips per day figures are required to be applied to different situations. 10 vehicle trips per day per household generally are used to calculate trip generation for large towns and cities i.e. Christchurch. The lesser figure of 6 trips per day per household is used for small townships i.e. in this instance Prebbleton. The rationale behind this is large cities have many facilities relatively close to the household unit where as smaller town have less infrastructure requiring property owners to travel greater distances to carry out their day

to day activities. Many activities are undertaken in the same trip therefore trips per day are less than in large cities.

TDG in their Transport Assessment have used the more accurate method of surveying the existing traffic movements in the peak hours. This has then been used to establish the true vehicle trips per household in the peak hours. As stated in the Transport Assessment TDG have used peak trip generation rates based on the Cairnbrae Drive households which are 1.3vph/household in the am peak and 1.0vph/household in the pm peak.

TDG also have factored in the vehicle movements in Charles Street, Williams Street and Norris Street. Combining these trip rates gives 1.4vph/household in the am peak and 1.0vph/household in the pm peak

TDG have assumed that the existing households in the area will be similar to the proposal. The lot and dwelling size are expected to be similar so vehicle trips will also be similar. It is accepted that their method and assumptions are reasonable.

The proposal is expected to contain approximately 212 residential households. Using the figures of 1.4vph/household in the am peak and 1.0vph/household in the pm peak the subdivision proposal will generate 300 vehicle trips in the am peak hour and 212 vehicle trips in the pm peak hour.

The proposed site will have access to the main routes of Springs and Blakes Roads via three intersections being Blakes Road/new subdivision, Cairnbrae Drive/Springs Road and Blakes Road/Springs Road. TDG have provided expected trip distribution to and from the site in the am peak hour. This is shown as figure 8 of the Transport Assessment. However no figure is shown for the pm peak hour. Using the same rationale as for the am peak, knowing that there are 212 vehicle trips in the pm peak as opposed to 300 in the am peak hour it can be calculated that the pm vehicle movements are 70% (212/300) of the am peak.

It is known that there may be future road links from the site onto Trents Road. This has been ignored from the Transport Assessment due to its uncertainty, with the above assessment providing a worst case scenario on existing intersections.

The automated traffic count data supplied by the Selwyn District Council shows that in August 2009, Springs Road immediately north of Blakes Road carried an average of 8,950 vehicles per day (vpd). Using the worst case scenario that all trips generated by the proposal

will be on Springs Road and 10 trips per household the expected traffic volume on Springs Road north of Blakes Road could increase to 10,070vpd.

Similarly if all trips generated by the proposal in the peak hours will be on Springs Road the expected traffic volume on Springs Road north of Blakes Road could increase from 822 vehicles per hour (vph) to 1,122vph.

Springs Road is currently classified as a 'Strategic Road' in the Selwyn District Plan and has a function to provide through traffic movements, often at high speed. The expected traffic volumes as discussed above are within the context of the volumes that strategic roads can cater for. That said Springs Road has spare capacity to carry the expected traffic volumes.

Similarly to Springs Road, if Blakes Roads immediately west of Springs Road was to carry all of the traffic generated by the proposal the traffic volume on Blakes Road could increase to 2,100vpd from 1,800vpd.

Similarly if all trips generated by the proposal in the peak hours will be on Blakes Road the expected traffic volume on Blakes Road west of Springs Road could increase from approximately 170 vehicles per hour (vph) to 470 vph.

Blakes Road is currently classified as a 'Local Road' in the Selwyn District Plan and has a function to provide access to households in an urban or town environment. They generally link to collector roads. The expected traffic volumes as discussed above are within the context of the volumes that local roads can cater for. That said Blakes Road has spare capacity to carry the expected traffic volumes.

It is highly unlikely that Springs Road and Blakes Road will experience the full impact of generated trips from the proposal as some vehicles will travel both west and south from the application site with the above figure giving the worst case scenario.

The other roads that are identified in the proposal to provide immediate access to the site are all classified as 'Local Roads'. These roads also have spare capacity to carry the expected traffic volumes.

It is noted that the Selwyn District Council is in the process of redefining the roading hierarchy to align with CRETS. If the new definitions are adopted Springs Road will become an Arterial Road, with Blakes Road a Collector Road.

5.0 District Plan Requirements

The proposed subdivision will be assessed under the relevant rules of the Selwyn District Plan at the time of subdivision consent. The application however embraces the subdivision and transport related rules of the District Plan. As earlier stated in this report there is no reason why full compliance with the standards and the rules of the Selwyn District Plan cannot be achieved.

AECOM concur with this approach as at this stage of the process as no detail is provided relating to physical construction.

6.0 Prebbleton Structure Plan

The Selwyn District Council over the last few years has been developing the Prebbleton Structure Plan. The plan provides a strategic planning framework to coordinate development in Prebbleton for the next 30 years. Submissions closed on the draft structure plan on the 16th October 2009. A hearing was held on 7th December 2009 to consider the comments received on the Draft Prebbleton Structure Plan. The Prebbleton Structure Plan was adopted by the Selwyn District Council on the 24th February 2010.

The portion of the Structure Plan (Figure 2) shows an indicative layout for the application site with the proposed roading connections onto the existing roading network. The proposed road connections to William Street, Cairnbrae Drive and the new intersection onto Blakes Road along with the connection through to Trents Road are shown. The pedestrian and cycle link from the cul-de-sac end of William Street through to the possible internal subdivisions road network is also shown.

The proposal shown in the Transport Assessment report prepared by Traffic design Group matches the plan of the Prebbleton Structure Plan and therefore satisfies the intentions of the structure plan. The only variation at this stage is the indicative internal roading layout. This will be confirmed and approved at subdivision consent stage.

Figure 2

7.0 Submissions

Submissions have been received from numerous residents from William Street and the immediate surrounding area. Submissions have been received from Environment Canterbury, a resident in Cairnbrae Drive and others. All relate to traffic, pedestrian and cycling issues.

7.1 William Street

Numerous submissions have been received from the residents of William Street and the immediate surrounding area relating to traffic issues on William Street. Concerns are:

- Not capable of handling the extra volume of traffic
- Speed of existing traffic
- Children safety at the existing playground
- Poor visibility at the playground
- Extra traffic could endanger the elderly, children and those attending the Primary School and Play Centre

- Road too narrow, not designed or built to accommodate higher volumes of traffic
- Road too narrow for two way traffic
- Walking and cycling linkage to the proposed subdivision from the cul-de-sac end of the street only

7.1.1 Traffic Volume

William Street is a local road within the Selwyn Districts Plans roading hierarchy. The street runs west from Springs Road 160 m south of the roundabout at Blakes Road. It terminates as a cul-de-sac 500m from Springs Road. The street crosses Norris Street 215m from Springs Road. William Street is controlled by give ways at Norris Street. The width of William Street varies from 8.2m to 8.5m kerb to kerb with footpaths and grass berms on each side of the road. Dished channel exists from Springs Road to number 25 (adjacent to the playground) then flat channel continues to the cul-de-sac end. The street contains approximately 45 properties.

Presently William Street carries approximately 270 vehicles per day (vpd) between Springs Road and Norris Street with 180vpd between Norris Street and the cul-de-sac end. Local roads can carry up to 2,000 vpd before they begin to act as collector roads and cause traffic related issues on local roads. Using the expected trip distribution the traffic volume increase in the am and pm peak would be 25 vehicles per hour (vph) to 65vph between Springs Road and Norris Street. Between Norris Street and the cul-de-sac end there will be no increase in motorised traffic with only an increase in pedestrians and cyclists. These traffic volume numbers are very low for any street and although the increase of 25vph will be noticeable; William Street has capacity to cater for this increase.

William Street varies from 8.2m to 8.5m wide kerb to kerb. Car parking is available at the kerb side along the entire length of the street. If two cars were to park opposite each other two way traffic is still provided. The width between the parked cars would be approximately 4.5m giving traffic lanes of approximately 2.25m in each direction. The Selwyn District Plan roading standards require new local roads to be constructed at a width of between 8m and 8.5m with local road cul-de-sacs at 8m in width. These widths allow for two way traffic flow and kerb side parking. William Streets existing road width is consistent with this standard. Figure 3 shows the typical layout of William Street.

Figure 3

7.1.2 Speed

Speed of traffic can be an issue in any street within any town or City, with the Prebbleton being no exception. When streets have low volumes of traffic with little or no kerbside parking to help calm traffic speed, speeds can be higher than desired. The Selwyn District Plan roading standard for local roads addresses this issue by making the roads width as narrow as possible for the environment it serves. William Street is within an urban area and has a 50km/hr speed limit. There will always be the occasional vehicle that exceeds the speed limit as identified by the submitter in any street. This matter is an enforcement issue that should be referred to the NZ Police.

7.1.3 Visibility

Poor visibility at the playground has been identified as an issue by submitters. The existing playground is small and narrow with the play equipment located close to the road. An intersection has been formed, when William Street was constructed many years ago adjacent to the playground which does not lead anywhere. The intersection is the proposed connection to William Street in this application.

It has been stated in the application that the existing playground is to be enlarged. It also states that 'there is no reason why full compliance with the standards and the rules of the Selwyn District Plan cannot be achieved'. This will be achieved at subdivision consent stage. If there is an existing visibility issue for motorists at the playground the subdivision consent

will address this issue through the rules of the District Plan so subdivision consent can be obtained.

7.1.4 Walking and Cycling Linkage

Concerns have been expressed in the submissions that the link between the cul-de-sac end of William Street to the new subdivision should be limited to pedestrians and cyclists only. The Transport Assessment report prepared by TDG states the connection of a road link to the proposed subdivision is not required and a pedestrian and cycling only will be provided. Figure 4 shows where the proposed pedestrian and cycle link will be.

Figure 4

7.2 Blakes Road/Norris Street Intersection

One submission has been received raising concerns at the existing parking of vehicles at the intersection associated with the Primary School between 9.00am and 3.00pm. It is unclear whether these concerns relate to parents and care givers dropping off and picking up pupils at school times or permanent parking close to the intersection.

An inspection of the intersection reveals there are no existing broken yellow no stopping lines or yield control against Norris Street. Vehicles may be parking closer than the required 6m clearance from the intersection, however this was not observed.

To address these concerns it is suggested that a yield control against Norris Street and broken yellow no stopping lines at the intersection be installed. If this proposal is approved the amendments will be actioned by the Selwyn District Council at subdivision consent stage.

7.3 Internal Road Network Layout

Environment Canterbury has lodged two submissions relating to the internal roading network where the application fails to include specification for pedestrian and cycling movements.

Both pedestrian and cycling facilities are a detail that will be dealt with at subdivision consent stage. The applicant has stated in the Transport Assessment that there is no reason why full compliance with the standards and the rules of the Selwyn District Plan cannot be achieved.

It is accept the applicant will comply fully with the rules of the Selwyn District Plan in relation to pedestrian and cycling facilities.

7.4 Cairnbrae Drive and Trents Road Links

Another two submissions have been received relating to the roading links through Cairnbrae Drive and to Trents Road (Waratah Park).

7.4.1 Cairnbrae Drive

The submission received from the resident of Cairnbrae Drive does not want a road link to the proposed subdivision, citing noise and increased traffic volumes. Cairnbrae Drive provides access for approximately 39 households to Springs Road. The roadway has been designed and constructed according to the Selwyn District Plan and Construction Standards. It is classified as a local road. The observed traffic volume is currently low for a local road with no survey data available. Using the rational that households in small towns generate 6 vehicle trips per day (vpd) then the estimate daily traffic volume is expected to be around 234 vpd. The Survey data collected by TDG shows that Cairnbrae Drive residents generate 1.3 vph/household in the am peak and 1.0 vph/household in the pm peak. Using these figures the am and pm peak traffic volumes of 51 vph and 39 vph respectively. Using the traffic distribution changes for the proposal these will increase to an estimated 185 vph in the am peak and 132 vph in the pm peak. It must be noted that these figures do not take into account for the future road links through to Trents Road. When these are established these figures will be less.

Both the am and pm hour estimated traffic volumes are low for a local road with Cairnbrae Drive having adequate capacity to cater for this increase.

7.4.2 Trents Road (Waratah Park) Roading Link

A submission has been received from the owners of Trents Berry Farm. The submission requests that the future proposed link road through to Trents Road be included in the proposal.

The Prebbleton Structure Plan was adopted by the Selwyn District Council on the 24th February 2010. The roading link through to Trents Road is indicated in the structure plan although not in the proposal but being referred to a future proposed link. To be consistent with the Prebbleton Structure Plan it should be included in this proposal.

The applicant has considered this submission and has included the link to Trents Road in their proposal.

The roading network around the proposal can accommodate the impact of the proposal with no significant issues, however to spread the traffic impact further providing the link through to Trents Road in this proposal will help alleviate the concerns of other submitters.

8.0 Conclusion

The proposed plan change will allow a subdivision of approximately 212 household units to the west of the Prebbleton Village along with roading infrastructure. The indicative subdivision layout will provide roading links to existing roads. The site is approximately 19ha in size. The site is currently zoned Rural within the Selwyn District Plan. This application proposes to convert this zoning to Residential.

The subdivision will be developed in accordance with the existing Selwyn District Plan rules. Accordingly the proposal will comply with the Plan's requirements regarding roading layout, parking, access and movement of vehicles. The proposed subdivision will be assessed under the relevant rules of the Selwyn District Plan at the time of subdivision consent.

The application generally aligns with the recently adopted Prebbleton Structure Plan. The original proposal however refers to a future possible link road through to Trents Road. At the time the proposal was submitted the Prebbleton Structure Plan had not been adopted by Council. The applicant has included the links through to Trents Road in their proposal to be consistent with the adopted Prebbleton Structure Plan.

With the recommended speed limit change point relocation, the access to and from the site will fully comply in terms of location, sight and design distances.

The expected increase in vehicle trips generated by the proposal can be accommodated within the existing road network.

Overall the Transport Assessment for a plan change submitted by William Blake Ltd and Maurice Coffey is thorough and addresses relevant transport related issues that can be addressed at this time.

AECOM agree with the conclusions reached by Traffic Design Group in the Transport Assessment report that it is unlikely that the subdivision will have any significant effect on safety or efficiency of the surrounding roading network.