Resource Management Act 1991

Proposed Plan Change 7 to the Selwyn District Plan

Supplementary Report on Transport

To:	Hearings Panel
From:	Andrew Mazey, Selwyn District Council
Date:	13 June 2011

This report has been prepared under Section 42A of the Resource Management Act 1991. The purpose of the report is to assist Selwyn District Council's Hearing Commissioners to evaluate and decide on submissions on provisions in Proposed Plan Change 7 to the partially operative Selwyn District Plan by providing expert advice on technical matters. The report does not make recommendations on submissions but the information and conclusions contained within it may be used by planning officers as a basis for making recommendations on submissions. This report should be read in conjunction with the planning officer's report and any other relevant reports identified.

1. Introduction

1.1 My name is Andrew Mazey. I am Selwyn District Council's Roading Asset Manager. I have been asked to prepare a supplementary report commenting on transport-related matters arising from the Commissioners Minute (dated 24 May 2011) on Proposed Plan Change 7 (PC7) to the partially operative District Plan (District Plan).

1.3 My qualifications and experience have been set out in my original s42A report, dated May 2011.

2. Report Content

2.1 The following topics are discussed in this report pertaining to the submissions referred to in the Commissioners Minute in relation to roading and related infrastructure aspects.

Rezoning requests

- Branthwaite Drive, Rolleston
- Denwood Trustees, Lincoln

3. Branthwaite Drive, Rolleston

3.1 If consideration was given to enable the Branthwaite Dr SR8 area to redevelop to a LZ density in the first stage then this should be extended to also include the Helpet Park SR4 area (and the area associated sewage treatment plant which will be decommissioned in time) to enable the appropriate transport network to be implemented in accordance with the Rolleston Structure Plan. This would also apply to a certain extent to SR7 which also has some development frontage to the internal areas of SR4 and SR8. This includes the proposed main road connection between Springston Rolleston Rd and Lincoln Rolleston Rd along the southern side of the SR4 area.

3.2 In addition a new section of road needs to be established to connect to the existing end of the Branthwaite Dr cul de sac from any main road across the Helpet area. This would

provide a roading network suitable for catering for the increase in development densities sought in the Branthwaite Dr area and would resolve the problem of creating a long cul de sac with high traffic use relying on a sole connection to Lincoln Rolleston Rd.

3.3 There may be the intention by the submitter that the Branthwaite Dr development is allowed to develop first with access served purely from Lincoln Rolleston Rd. I would not agree with this approach as development should first focus on the SR4 area closest to the existing township to then enable the SR8 area to utilise new and existing transport connections to accommodate the higher densities proposed.

3.4 I see some advantage from a transport network development context that the SR4 and SR8 areas develop sooner rather than later as this will allow the proposed main road between Springston Rolleston Rd and Lincoln Rolleston Rd to be provided. This section of main road is the extension of the wider collector route being established in this area that connects west through the Recreational Precinct (this section of road is currently being designed) to Goulds Rd, then along the newly constructed Broadlands Dr (past the new Primary School) to Lowes Rd. The progressive completion of this main collector route, also enabled by the development of SR4 through Helpet Park to Lincoln Rolleston Rd, will provide an important collector road route to that will serve the wider development area in this part of Rolleston.

3.5 With this collector route in place, Branthwaite Dr can then be extended to facilitate a roading link that would be more sustainable and appropriate to accommodate the density of growth in the SR8 area that does not rely on sole access to Lincoln Rolleston Rd. This road is currently being upgraded to become a district arterial route, along with other roads to the east and north to provide connectivity to the Shands Rd District arterial, the proposed Christchurch Southern Motorway and Christchurch.

3.6 Should development of SR4, SR7 and SR8 occur earlier than currently anticipated, then development contribution provisions for transport infrastructure will need to be put in place to support this. For the section of main road proposed for SR4 through Helpet Park, this would be funded by the surrounding development areas plus a component applied over the wider Rolleston MUL reflecting its strategic contribution to the wider network. For Branthwaite Dr and other development frontages to existing roads, contributions would be applied on land owners/developers for the extension and upgrade of these roads and frontages to residential standards.

3.7 In summary if internally staged and funded accordingly, there are wider transport network development advantages if the SR4 and SR8 (and SR7 to a certain extent) occurred sooner rather than later.

4. Denwood Trustees, Lincoln

4.1 My original evidence relating to Denwood and the Deferred B2 land was prepared on the basis of the stated intention by the Submitter at that time to seek a rural residential type 110 lot L2 zone in conjunction with the original ODP 5 11ha B2 land. This is detailed in Sections 4.38 to 4.47 of my original evidence.

4.2 However the submitter presented to the PC7 Hearing two options to extend the proposed B2 zoning from 11ha to 36-48ha, and to create a LZ zone ranging in size from 589 to 680 lots depending on the option selected.

4.3 The evidence provided by the Ms Fiona Aston on behalf of the Submitter states that traffic effects would be “no more than minor” and that the “development can be accommodated within the physical capacity of the road network”. This was no doubt in reference to the transport related evidence supplied by Ms Lisa Williams of the 10 May 2011 which I have had an opportunity to review.

4.4 As the scale of the activity is much larger than that anticipated by PC7 and that agreed to go forward under ODP5, intuitively based on my knowledge of the local network and the likely effects generated by activities of this scale with a mixture of different traffic types, I have some concerns.

4.5 Section 4.45 of my original evidence outlined my concerns on the effects on Springs Rd north of the development areas and levels proposed by the Submitter at that time. In comparison this was based on only 25% of the traffic generation levels now being proposed by the Submitter based on the development options recently presented.

4.6 My original concerns related to the increase in traffic on Springs Rd from the any larger development areas to the south of Springs Rd together with the new main roads and intersections originating from the Dairy Block development (ODP1) and the existing University access and car parks to the north. This would be further exacerbated with the recently introduced higher traffic generating proposals, and the mix of differing land uses and vehicles types and patterns.

4.7 I have reviewed Ms Williams evidence and generally agree with the methods used to assess trip generation from the respective zones. However I have identified an issue where there is a discrepancy between the sizes of the zones being promoted and used for assessment. For instance in Ms Williams evidence a 25ha B2 zone is used to assess to likely trip generation rates whereas the Submitter is stating a development in the range of 36-45ha is preferred. Based on the latter, using 40ha as an assumed midpoint, trip generation rates from the 25

ha B2 area would rise from around 1000 to 1600 trips in the peak hour, an increase of 62% (based on the same assessments and criteria developed in Sections 4.4 and 4.5 of Ms Williams's evidence).

4.8 I note that the trip generation rates used for the B2 area is comparatively high relating to site coverage and assumptions relating to the mix of both retail and industrial activity on the site. Another view is that any B2 development would be more akin to Rollestons Izone Industrial Park which comparatively may only have B2 trip generation rates 70% less that assumed in the assessment.

4.9 However for consistency, assuming that the peak hour represents 10% of the total daily traffic, this then would result in a daily traffic volume of approx. 16,000 vehicles per day from a 40ha expanded business zone. The proposed 589 to 680 lot LZ development (depending on the option) could generate 6000 vehicles per day. Therefore the total would be 22,000 vehicles per day. If as determined by Ms Williams that "67% of total trips generated by the Denwood development…….could access the wider road network via Springs Rd" this would still equate to approx. 14,700 additional new vehicles per day on Springs Rd. This is quite significant when added to the estimated 2000 vpd from the ODP1 area, and the existing traffic associated with the University of 2700 vpd. Therefore potentially just south of the Springs Rd/Gerald St Roundabout there could be a total of 19,400 vpd.

4.10 The following tables provide a coarse assessment of the amount of traffic that is likely to occur on Springs Rd south of the Springs Rd/Gerald St roundabout for the three main development scenarios associated with Denwood, i.e.

Table 1 - As per PC7 and Original 11ha B2 Zoning proposed under OPD5

Table 2 - Expanded 40ha B2 Zone and a L2 110 lot rural residential subdivision

Table 3 - Expanded 40ha B2 Zone and a LZ 600 lot residential subdivision

4.11 Note the figures produced are on the basis that the existing traffic count represents traffic flows predominately from the University into the future assuming no growth, and 67% of the trips generated by any Denwood developments would be attributable to Springs Rd.

Table 1 - Original PC7 B2 Land Proposal

Traffic Source	vpd	Time
Existing	2700	Existing
ODP1 (Dairy Block)	2000	full LZ development
ODP5 11ha B2	4512@ 67% = 3000	full B2 development
Total	7,700	All

Table 2 - Expanded B2 Land and Denwood L2 Development

Traffic Source	vpd	Time
Existing Springs Rd	2700	Existing
ODP1 (Dairy Block)	2000	full LZ development
Denwood 110 lots	660	full L2 development
Denwood 25ha B2	10,000 @67% = 6700	full B2 development
Total	12,100	All

Table 3 - Expanded B2 Land and Denwood LZ Development

Traffic Source	vpd	Time
Existing Springs Rd	2700	Existing
ODP1 (Dairy Block)	2000	full LZ development
Denwood 600 lots	6000 @ 67% = 4000	full LZ development
Denwood 40ha B2	16000 @ 67% = 10,700	full B2 development
Total	19,400	All

4.12 It is evident on this basis that traffic volumes on Springs Rd could substantially increase with likely significant adverse effects depending on what level of development was promoted by Denwood. This is why ODP5 as originally put forward for PC7 was considered sustainable relating to managing the effects on Springs Rd from a transport perspective at least.

4.13 As a means of comparison the Councils busiest section of local road in the district is Springs Rd through Prebbleton which currently carries over 9000vpd. If 10% of the total of 19,400 vpd shown in Table 3 represents the peak flow, then this gets very close to the 2,200 threshold referenced by Ms Williams that a two way rural road or classified road can accommodate.

4.14 The Submitters transport evidence and assessments do not make any reference on how the Level of Service of the Springs Rd/Gerald St roundabout maybe effected and what may be required to mitigate these effects. This roundabout controls one of the Councils busiest local road intersections in the district. It works particularly hard in morning and evening peaks associated with providing access to the University and its carpark areas to and Christchurch commuter traffic.

4.15 It was shown that with the development of the Dairy Block that improvements would be necessary to ensure its LoS did not degrade beyond acceptable levels. These have been agreed to be undertaken by that developer through its consenting process, and consist of improvements to northern approach. At the very least a detailed assessment needs to be carried on the roundabout by the Submitter based on the type of development proposals it is advocating and the traffic this will generate. Improvements could be identified for example that range from upgrades to approaches to upgrading the roundabout from a single lane to two lane facility.

4.16 As referenced above 67% of the trips generated by Denwood are attributable to Springs Rd. Therefore it presumably requires the assumption that other connections will be available to meet this and other latent demand and distribution of trips outside the development area such as the Lincoln Southern Bypass and east into ODP1. When the bypass may occur is still unknown and is dependent on a number of other factors, such as the opposition to it for by the University.

4.17 Section 11.7 of Ms Astons evidence it states

> The University does not support use of the rail corridor for walkway/cycleway purposes or connections between the site and University land. Accordingly, earlier proposals for such 'connectivity' have been deleted from the ODP.

4.18 The University by not supporting any connections therefore would not support the bypass which in theory means it would not be available thereby exacerbating the traffic issues if large development areas relied solely on access to Springs Rd and a link to ODP1. Connectivity would then also have to rely on the development of the local network in ODP1, and the staging of this, to provide the wider connectivity considered necessary beyond Springs Rd. Certainly it would be expected that the traffic cross link between ODP1 and Denwood would be progressively used more as living densities were sought to be increased. This aspect has not been addressed by the Submitter.

4.19 In regards to the two ODP provided by the submitter, Option 1 and Option 2 I have the following more specific comments.

Option 1 – Expanded B2 Area south of Proposed Bypass.

4.20 I am pleased to see a corridor provided for the Bypass to coincide with that expected to join to ODP 1 to the east and the University Land to the north.

4.21 I have concerns over the number and spacing of intersections along Springs Rd. Of the 3 intersections, the separation distances scaled between these range from 205m and 220m. PC12 establishes revised allowable minimum intersection spacing's (Table E10.3.2 and E13.3.2) based on posted speed limits. For example for a 70km/hr speed limit the minimum intersection spacing would be 305m while a for a 50km/h limit this would reduce to. Therefore the acceptability of the intersection arrangement depends on what the final speed limit will be along this section of Springs Rd. It has been considered previously with ODP1 that access to the section of Springs Rd in the vicinity of Denwood would be limited (which then may prevent a lower speed limit being applied along this section of Springs Rd contrary to outcomes necessary to enable closer intersection spacings).

4.22 I do hold concerns about the level of access and connectivity that the Bypass would perhaps be expected to facilitate to the development of the site. The philosophy regarding minimising access to the bypass to protect its through traffic function is discussed in Section 3.61 of my original report. As such the bypass needs to be viewed as a "limited access road" and that intersections and access to it be tightly controlled. Therefore I could not agree to a direct connection to from any of the Denwood B2, LZ or L2 areas. I believe Ms Williams generally agrees with this approach in Section 6.2 of her evidence however I am less confident that ODP options depicted actually support this intent.

4.23 Access to these areas would be via the bypass/Springs Rd intersection where Springs Rd would be used as the local collector to any developed areas such as ODP5/Denwood and ODP1. A high speed roundabout would provide the necessary connectivity while maintaining the overall through function of the bypass. On this basis that shown on the ODP Option 1 utilising a northern access road connecting between the bypass, Springs Rd and ODP1 would not be supported.

Option 2 – Expanded B2 Zone north and south of Bypass.

4.24 The same principles apply regarding access and connectivity to the bypass as described for Option 1. For Option 2, presuming there is no direct access from the bypass for the reasons explained above, I would have concerns that all the residential traffic to and from the proposed LZ areas would be reliant on going through the expanded B2 areas. It is my

opinion that this would not be desirable from an urban planning and amenity perspective at least, while the mix of pedestrians, cyclists and private motor vehicles along sections roads used predominately for industrial type traffic and access would not be very desirable, efficient or potentially safe. As described above the use of a roundabout at the bypass/Springs Rd juncture would be the preferred means of providing interface access to the adjoining local development areas.

Option 3 – Commissioners Option 3

4.25 This Option has been put forward by the PC7 Hearing Commissioners. It provides a LZ zone and B2 zone along Springs Rd separated by a 50m buffer. I believe the intent of this buffer is to enable a section of the bypass to be incorporated into this in the future. Unfortunately it is not aligned sufficiently to enable the buffer to be used for a bypass route to connect to the University land using the old section of Weedons Rd as already identified as part of the wider route.

4.26 In my opinion I would prefer Option 2, which did not include any zoning for any type of residential development and a reduced B2 zone. As explained above the addition of a large amount of residential traffic onto Springs Rd will be problematic in conjunction with existing and proposed uses. A B2 zoning around a potential bypass would minimise future reverse sensitivity issues compared to residential zoning. Furthermore with no residential traffic needed to be catered for, roads and access could be optimised for a B2 activity.

4.27 Already, in respect to ODP 5 and the original B2 zoning proposals, ODP 1 has no direct property access to Springs Rd in this vicinity in anticipation of the type of traffic and vehicles that would be generated from a B2 zoning. On this basis it seems more logical to provide any additional (justified) B2 zoning so this can be catered for on a consistent basis along with that originally intended for ODP 5 and its interface with ODP1 and Springs Rd.

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