Variation to the Proposed District Plan

Transport DW411

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Job Number	SDC-J053
Issue Date	10h June 2022
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1. Introduction

Selwyn District Council (SDC) has commissioned Abley to undertake a review of the Transport Chapter of the Proposed District Plan (PDP) to account for the Medium Density Residential Standards (MDRS) which form part of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act (RMAA). The RMAA allows for up to three residential dwellings per site within urban areas including Prebbleton, Lincoln and Rolleston. Selwyn District Council is currently preparing a variation to the PDP to meet these new housing intensification requirements.

This technical note highlights the changes occurring in relation to SDC with the introduction of the RMAA and in light of the National Policy Statement on Urban Development (NPS-UD) and recommend changes to the applicable PDP transport rules. These rules are in relation to accessway design, vehicle crossing widths, shared accessways and road design.

2. What is Changing?

The PDP currently allows for only one residential unit to be constructed per site except for larger sites (greater than 1,000m^2) where the construction of a second residential unit is a restricted discretionary activity if certain design criteria are met (GRZ-R2). Further, a minor residential unit (max floor area of 70m^2) is permitted per site and subject to specific criteria (GRZ-R3). Hence, in general, two residential units (one no more than 70m^2 floor area) are permitted on sites in the GRZ zone.

The introduction of the RMAA requires tier 1 councils (as of August 2022) to include standards that require the maximum number of residential units per site to be increased to three within medium density residential zones. Selwyn District Council is classed as a tier 1 council requiring the GRZ standards within the proposed district plan to be changed to allow for intensification. The proposal is to change the GRZ to a Medium Density Residential Zone (MRZ) to accommodate the changes in intensification.

In addition to this change, tier 1 councils have recently been required to give effect to the NPS-UD which states that all objectives, policies, rules, or assessment criteria associated with minimum parking standards must be removed except for accessible parking.

3. Transport Chapter of PDP

The Transport provisions within the PDP require review to assess the appropriateness in light of the RMAA.

There are five transport related rules that require reviewing as part of the variation to accommodate the changes in intensification. The transport rules affected by the intensification change for the General Residential Zone (GRZ) are as follows.

- The number of sites that can be served by an accessway without a road needing to be formed (TRAN-REQ7)
- Design of accessways including sealing requirements, length, width, and the need for passing bays and turning areas. (TRAN-SCHED1)
- Vehicle crossing widths (servicing a residential site) (TRAN-SCHED2 in particularTRAN-TABLE6)
- Carriageway and legal widths of local, collector and arterial roads (TRAN-SCHED3 in particular TRAN-TABLE7)
- High trip generating activities (TRAN-SCHED3 in particular TRAN-TABLE2)

The rules above within the PDP are not all specific to the GRZ, most are categorised by RESZ (All Residential Zones). The GRZ zone is sought to be replaced by a Medium Density Residential Zone (MRZ) where RESZ rules will still apply. Each rule will be assessed individually in the following sections according to themes.

It should be noted that changes to the PDP transport rules may require alterations to the Selwyn District Council's Engineering Code of Practice to match, as these form the design standards for the PDP.

4. Accessway Design

4.1 Rule

The standards for accessways and design formation listed within TRAN-REQ7, state that for GRZ;

- Accessways shall be formed to comply with the design requirements listed in TRAN-TABLE3 and illustrated in TRAN-DIAG4.
- TRAN-TABLE3 states the minimum requirements for shared accessways and is found in Table 4.1.

Table 4.1 Minimum requirements for shared accessways found within TRAN-TABLE 3 of the PDP

Potential Number of Sites (Excl. sites with direct road frontage)	Length (m)	Legal width (m)	Carriageway width (m)	Turning area	Passing bay
1	Any	3.5	3.0	Optional	Optional
2 - 3	Any	4.5	3.0	Optional	Optional
4 - 6	0 - 50	5.0	3.5	Optional	Optional
4 - 6	> 50	6.5	4.5	Required	Required

4.2 Discussion

The current proposed standards are specific to the number of sites excluding those with direct road frontage. When there are up to 6 sites, the vehicle accessway carriageway width must be at least 3.5m wide (one-way) or 4.5m wide if the accessway is greater than 50m in length. With the new intensification standards one site can now have up to three residential units. Therefore, up to eighteen residential units could theoretically be served by a one-way vehicle access if the requirements are not modified.

If each unit has at least one car parking space (although not required to) this equates to a shared accessway serving up to 18 parking spaces which is likely to result in vehicle conflicts within the accessway becoming less manageable leading to safety and efficiency implications. Furthermore, residents and visitors to the residential units will travel on foot, by bicycle and using other devices to access the units. This will be the case whether a unit has vehicle parking on-site or not. It is anticipated that unless the site is a comprehensive development, the shared accessway will perform the function of providing access for all travel modes including walking, cycling and vehicles etc.

The threshold of up to six sites being permitted to share one accessway currently equates to up to 12 units (i.e. two units per site). So for consistency, the table should be converted to apply to up to four sites for the Medium Density Residential Zone (also 12 units).

4.3 Recommendation

Change TRAN-SCHED1 TRAN-TABLE3 for the Medium Density Residential Zone (excluding those with direct road frontage) as shown in Table 4.2.

Table 4.2 Recommended requirements for shared accessways in the Medium Density Residential Zone

Potential Number of Sites (Excl. sites with direct road frontage)	Length (m)	Legal width (m)	Carriageway width (m)	Turning area	Passing bay
1	Any	3.5	3.0	Optional	Optional
2	Any	4.5	3.0	Optional	Optional
3 – 4	0 - 50	5.0	3.5	Optional	Optional
3 – 4	> 50	6.5	4.5	Required	Required

5. Vehicle Crossing Widths

5.1 Rule

The standards for accessways and design formation listed within TRAN-REQ7 state that for RESZ;

- Formed accessway widths are no greater than the maximum vehicle crossing width listed in TRAN-TABLE6.
- TRAN-TABLE6 states that the minimum and maximum width of vehicle crossings within a residential zone is 3.5m and 6m respectively.

5.2 Discussion

The width of the vehicle crossing is usually dependent on the width of the accessway. The current standards allow for the provision of both one way and two-way vehicle movement. This is consistent with the accessway standards within TRAN-TABLE3 and will not require any changes.

It is also noted that vehicle crossings will only need to be provided where there are on-site parking spaces proposed.

5.3 Recommendation

No changes required.

6. Formation and Sealing of Accessways

The standards for accessways and design formation listed within TRAN-REQ7 state that for RESZ;

- Every accessway serving more than two sites are formed and sealed.

6.1 Discussion

With each site now having the opportunity to establish three residential units, accessways that have six residential units across two sites will not be required to form and seal the accessway.

An appropriate solution would be to change the rule from two sites to two units. However urban residential areas should be required to have formed and sealed accessways to prevent debris spreading onto the footpath or road reserve. It is recommended that all accessways within the new MRZ are formed and sealed regardless of the number of sites.

6.2 Recommendation

Change TRAN-REQ7 9 to include that “Every accessway is to be formed and sealed” within the new Medium Density Residential Zone.

7. Shared Accessways

7.1 Rule

The standards for accessways and design formation listed within TRAN-REQ7 state that for RESZ;

- Where access is shared to more than six sites this shall be via a road.

7.2 Discussion

Within the *Selwyn PDP Transport Feedback Review* dated 3rd September 2021, an assessment was conducted regarding six sites being the appropriate number of sites before a road requires construction. It stated the following;

The provision of long shared accessways is not conducive to achieving a high level of permeability, accessibility and connectivity for active modes such as walking and cycling as well as vehicle access. Where access to a large number of sites or dwellings (or potential sites/dwellings) is required, this should be by way of local roads. The primary purpose of the requirement is to avoid a situation where a larger volume of traffic movements occur over a private way than is appropriate and where roading standards should be applied to ensure the traffic and other users such as people walking and cycling can be accommodated appropriately. There are also practical considerations such as space for rubbish collection (e.g. wheelie bins) where a large number of dwellings are located on a shared accessway.

The assessment above holds particularly true now that up to three residential units are allowed on a single site compared to the previous one residential unit and one minor residential unit per site. As a result it would be appropriate for the requirement to be based on the number of units, i.e. twelve residential units instead of six sites. Under the Medium Density Residential provisions, twelve residential units could be developed on four sites.

7.3 Recommendation

Change TRAN-REQ7 for the Medium Density Residential Zone to state “Where vehicle access is shared to more than four sites this shall be via a road”.

8. Road Formation

8.1 Rule

TRAN-REQ19 sets out the standards for land transport formation. Only the rules for the RESZ have been listed below under TRAN-REQ19.

- Land transport infrastructure shall be formed to the standards contained in TRAN-TABLE7.
- Footpaths shall be constructed as a sealed strip within the berm of the road.
- All areas of the berm that are not sealed in footpath shall be maintained in grass or landscaping.
- Footpaths shall be formed on both sides of Local Roads in locations where:
    - The road is shown on an ODP; or
    - The adjacent land contains Small Site Development and Comprehensive Development.

The requirements for TRAN-TABLE7 are referred in Table 8.1, which only includes the applicable road formation standards for RESZ.

Table 8.1 Road formation standards applicable to the RESZ found within TRAN-TABLE7 of the PDP

Road Type	Legal Width (Min-Max)	Carriageway Width (Min-Max)	Traffic Lanes (min. no.)	Parking lanes (min. no.)	Specific provision for cycles (on road or off road)	Pedestrian Provision (minimum)
Arterial	20 - 25	13 - 14	2	2	Yes	Both sides
Collector	20 - 25	11 - 12	2	1	Yes	Both sides
Local	13 - 15	7 - 8	2	1	NA	One side

8.2 Discussion

The key pressure that is likely to come about as a result of the medium density provisions is a higher demand for sustainable travel modes such as walking, cycling and micromobility. Alongside this, allowing three residential units per site with no mandatory parking may result in higher demand for on-street parking at least in the shorter term.

Arterial Roads

The arterial road formation standards for residential areas currently allow for specific provision for cycles, pedestrians and parking on both sides of the carriageway.

With higher density development, alternative mode choices become critical to alleviate congestion on the road network. Therefore, promoting cycling as an attractive option especially on direct arterial routes is considered essential. It is critical that appropriate provision for cycling is provided at a network level which requires proactive planning by Council outside the District Plan regulations.

Collector Roads

The requirements within TRAN-TABLE7 are considered acceptable for the most part. Specific provision for cycling on residential collector routes is required, and this is facilitated within the road formation standards either as on road or off road facilities. Again, the type of cycle facility and how it connects with the surrounding cycling network is critical to ensuring cycling is a viable mode choice and living without a private vehicle becomes a viable choice for at least some residents.

The removal of the minimum parking standards paired with urban residential intensification will likely lead to an increased demand for on-street parking. Currently the standards require a minimum of one parking lane to be provided on a formed collector road.

One option is to require two parking lanes for collector roads in the medium density residential zone. The collector road standards for the Commercial and Mixed Use Zone (CMUZ) would then apply to the Medium Density Residential zone. There may be some instances where parking is not required on both sides of a collector road, for example where the lot sizes are larger and off-street parking will be provided. In these cases, Council could work with the developer to allow this lesser provision. Alternatively, the requirement for one parking lane but allowance for two could be permitted for collector roads. This would require the maximum carriageway width to be increased to 14m (currently 12m).

Local Roads

Most residential dwellings are served by local roads, and they are generally designed to accommodate vehicle volumes less than 1,000 vehicles per day and promote low-speed environments through narrow carriageway widths. It is anticipated that within these low-speed environments, cyclists will share the traffic lane with vehicles. Therefore, specific provision for cycles is not considered necessary even with the proposed residential intensification.

Following on from the collector road rules assessment, intensification of residential sites paired with removed minimum parking standards will increase demand for parking on local roads as developers are likely to sacrifice car parking for more residential units.

Residential parking on local roads tends to promote a low-speed environment as cars park on alternating sides of the road depending on where driveways are located without the need for an official parking lane. This can reduce the traffic lanes to one lane which is acceptable for local roads. Therefore, we do not recommend requiring parking on both sides of local roads.

Local roads within residential zones are not required to provide footpaths on both sides of the road as pedestrian provision is for one side only within the PDP. However, providing footpaths increases connectivity for pedestrians and encourages walking to surrounding amenities. Higher density development leads to more people using footpaths as a modal choice and hence it is recommended that local roads have pedestrian provision on both sides. The other footpath rules regarding construction and berms remain appropriate.

8.3 Recommendation

Change the TRAN-SCHED3 TRAN-TABLE7 to state for the Medium Density Residential Zone:

- collector roads to require a minimum of one parking lane with the maximum carriageway width increased to 14m to allow parking on both sides if necessary
- local road pedestrian provision is changed from “one side” to “both sides”

9. High Trip Generating Activities

9.1 Rule

The standards for high trip generating activities listed within TRAN-R8 states that for all zones where there is the establishment of a new or expansion of an existing activity listed in TRAN-TABLE2. The activity is permitted if it complies with the basic ITA threshold in TRAN-TABLE2.

TRAN-TABLE2 states that for residential activities the threshold for basic ITA and full ITAs are 50 residential sites/units and 120 residential sites/units respectively.

9.2 Discussion

The high trip generating threshold rates have previously been advised within *Selwyn District Plan – Transport Components Integrated Transport Assessments* dated 25rd October 2019 where the Waka Kotahi *Research Report 453* (RR345*)* peak hour rates were used as a basis for establishing the number of residential units that would likely generate 50 and 120 vehicles per peak hour. The key concern is that in the proposed Medium Density Residential zone, residential subdivisions (particularly greenfield development) will be permitted to establish up to three dwellings per site potentially generating a higher level of trip generation than originally anticipated.

There are three development scenarios where three units could be established per site that have been identified by the Ministry for the Environment[1]. The scenarios include side by side, stacked and infill arrangements and these are shown in Figure 9.1.

[1] https://environment.govt.nz/assets/uploads/standards_model_factsheet.pdf

SIDE BY SIDE

DEVELOPMENT METRICS

Site dimensions	13m x 32m (416m²)
Units	**3** x 100m² per unit
Number of floors	**3** per unit
Building height	**9.8m**
Building coverage	**26%**
Outdoor living space per unit	**24m²** (ground floor)
Landscaped area	**65%**

DEVELOPMENT CONTEXT

- Three complying units, each with their own front door and ground floor open space
- Residual site area that can also function as communal open space
- Potential opportunity for additional upper storey balcony space

STACKED

DEVELOPMENT METRICS

Site dimensions	13m x 32m (416m²)
Units	**3** x 82m² per unit (ex common internal circulation space)
Number of floors	**1** per unit
Building height	**11.8m** (incl pitched roof)
Building coverage	**24%**
Outdoor living space per unit	**20m²** (ground floor) **8m²** (balconies upper storeys)
Landscaped area	**73%**

DEVELOPMENT CONTEXT

- Three complying units (one per floor) with common access and internal vertical circulation
- Outdoor living space for ground floor unit and balconies for upper storeys.
- Residual site area that can also function as communal open space

INFILL

DEVELOPMENT METRICS

Site dimensions	13m x 32m (416m²)
Units	**2** x 70m² per infill unit + **1** existing unit
Number of floors	**2** per infill unit
Building height	**8.2m**
Building coverage	**49%** (of the net site area - excluding driveway)
Outdoor living space per unit	**20m²** (ground floor)
Landscaped area	**40 %**

DEVELOPMENT CONTEXT

- Two complying two-storey units at the rear of existing dwelling
- Each unit has separate front door and private outdoor living space
- Potential opportunity for additional upper storey balcony space

Figure 9.1 Medium density residential standards potential development outcomes

Infill development is unlikely to meet the high trip generating activity threshold for an ITA as it would require the development of at least 20 sites, provided there is an existing residential unit on the site. This type of development will likely happen at a small scale with infill occurring at one or two sites at a time.

Side by side and stacked development types are likely to occur within new subdivisions and therefore could be of sufficient size to trigger the high trip generating activity rule. Under SUB-REQ1 in the GRZ where two or more residential units, excluding any minor residential unit, have been established or are proposed on a site the minimum site size per residential unit shall be 250m^2. This means that a site area of 750m^2 is required for three residential units to be established.

Trip generation rates for medium density development is generally lower for a number of reasons including:

- The units are typically smaller in size having fewer occupants per dwelling;
- They are typically located so they are accessible by walking, cycling and/or public transport to key employment, retail, entertainment and recreation destinations;
- Occupants tend to have lower car ownership levels due to limited parking space.

The medium density residential flats trip rates within Research Report 453[2] have been compared and applied as shown in Table 9.1 using the existing 50 vehicles per hour basic ITA and 120 vehicles per hour full ITA thresholds from TRAN-TABLE2 of the PDP.

Table 9.1 Comparison of trip generation rates between TRAN-R8 and RR453

Land use	Daily (vpd)	Peak hour (vpd)	Basic ITA (50 vph)	Full ITA (120 vph)
Residential (from TRAN-R8)	10/ residential sites/units	1/ residential sites/units	50 units	120 units
Medium Density Residential Flats (from RR453)	6.8/ dwelling	0.8/ dwelling	62 units	150 units

With the trip generation rates applied in Table 9.1, side by side and stacked medium density development types will require a basic ITA with 20 sites and a full ITA with 50 sites provided there are three units proposed on each site.

9.3 Recommendation

Change TRAN-TABLE2 to have a Medium Density Residential activity row with a high trip generating activity threshold of:

- 60 residential units for a basic ITA[3], and
- 150 residential units for a full ITA

10. Conclusions

Selwyn District Council (SDC) has commissioned Abley to undertake a review of the Transport Chapter of the Proposed District Plan to account for the Medium Density Residential Standards which form part of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act. This allows up to three residential units on site where up to two residential units are currently allowed (the second residential dwelling must have a floor area of less than 70m^2) within General Residential Zones and applies to tier 1 councils including SDC.

[2] Waka Kotahi, *Research Report 453. Trips and parking related to land use*, 2011, p. 115.
[3] Note: It is recommended the 62 units is rounded to 60 for simplicity purposes

There are five transport related rules that require reviewing as part of the variation to accommodate the changes in intensification. The transport rules affected by the intensification change for the General Residential Zone (GRZ) are as follows.

1. The number of sites that can be served by an accessway without a road needing to be formed (TRAN-REQ7)
2. Design of accessways including sealing requirements, length, width, and the need for passing bays and turning areas. (TRAN-SCHED1)
3. Vehicle crossing widths (servicing a residential site) (TRAN-SCHED2 in particularTRAN-TABLE6)
4. Carriageway and legal widths of local, collector and arterial roads (TRAN-SCHED3 in particular TRAN-TABLE7)
5. High trip generating activities (TRAN-SCHED3 in particular TRAN-TABLE2)

The conclusions and recommended changes based on each rule above are described below.

1. TRAN-TABLE3 (within TRAN-REQ7) states the minimum requirements for shared accessways and would allow up to eighteen residential units to theoretically be served by a one-way vehicle access. It is recommended to change TRAN-SCHED1 TRAN-TABLE3 for the new MRZ to a maximum of 4 sites (excluding those with direct road frontage) to be served by a shared accessway as shown in Table 4.2.
2. TRAN-TABLE6 (within TRAN-REQ7) states that the minimum and maximum width of vehicle crossing within a residential zone is 3.5m and 6m respectively. This allows for both on way and two way movement and no changes are required.
3. TRAN-REQ7 states that for all residential zones, every accessway serving more than two sites are formed and sealed. Urban residential areas should be required to have formed and sealed accessways to prevent debris spreading onto the footpath or road reserve. It is recommended that TRAN-REQ7 9 is changed to include that “Every accessway is to be formed and sealed” within the new MRZ.
4. TRAN-REQ7 states that for all residential zones where access is shared to more than six sites this shall be via a road. Based on the previous assessment within *Selwyn PDP Transport Feedback Review* and noting that one residential unit and one minor residential unit is currently allowed per site is it recommended that TRAN-REQ7 for the MRZ is changed to state “Where vehicle access is shared to more than four sites this shall be via a road”.
5. TRAN-TABLE7 sets out the transport infrastructure standards under TRAN-REQ19. Only the rules for all residential zones were assessed. With higher density development, alternative mode choices become critical to alleviate congestion on all roads within the road network and the demand for parking on collector roads is acknowledged, and on-street parking on local roads encourages lower speed environments. It is recommended that TRAN-SCHED3 TRAN-TABLE7 is changed to state for the Medium Density Residential Zone; collector roads require a minimum of one parking lane with the maximum carriageway width increased to 14m allowing parking on both sides, and local road pedestrian provision is changed from “one side” to “both sides.”
6. TRAN-TABLE2 outlines high trip generating activity thresholds for an ITA required under TRAN-R8 with only the residential high trip generator thresholds explored. Using the same method as the existing high trip generating activity thresholds within the PDP, RR453 trip generation rates should be applied to be more representative of higher density development (likely to be side by side or stacked development). It is recommended that a Medium Density Residential activity

row is included in TRAN-TABLE2 with a high trip generating activity threshold of 60 residential units for a basic ITA, and 150 residential units for a full ITA.