

D220002 – Ministry of Education Notice of Requirement: Rolleston Secondary School

Response to Council Peer Review

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1. Background

Abley Ltd (Abley) prepared an integrated transport assessment (ITA) report to support a Notice of Requirement (NoR) application which seeks to designate land to the west of Springston Rolleston Road and north of Selwyn Road for educational purposes. The client is the Ministry of Education (MoE). Abley's ITA report was peer-reviewed by Carriageway Consulting Ltd (Carriageway) on behalf of Selwyn District Council (SDC) as part of the NoR planning process. The peer review from Carriageway raised transport concerns with the proposal. Abley has been requested to respond to two issues raised in the Carriageway peer review, as follows.

- The effects of the proposal on the safety and efficiency of the Springston Rolleston Road / Selwyn Road intersection
- Car parking effects, or more specifically, the potential for increased overspill car parking to occur on nearby streets and associated potential traffic safety and efficiency effects.

This technical note responds to these two matters.

2. Springston Rolleston Road / Selwyn Road Intersection

2.1 Description and Relevant History

This intersection is a four-way (crossroads) intersection and is currently priority controlled. The Springston Rolleston Road approaches have priority and the Selwyn Road approaches are controlled by STOP signage and road markings. The intersection has a poor safety record.

At the outset, and as recognised by the Carriageway Consulting review, given the safety record and growth occurring in Rolleston, the Council's Long Term Plan (LTP) indicates that this intersection will be upgraded so that it is controlled by a roundabout¹. It is acknowledged, however, that funding and timing for the project are not yet confirmed. Previous reports on behalf of Council have suggested that this will occur in the 2024-2027 period.

It should be noted that the Council's transportation peer review (completed by Flow Transportation Consultants) of recent private plan changes including Private Plan Change 78 (PPC78) (among others) identified that the intersection will be over capacity on the Selwyn Road eastern approach in the year 2028 PM peak without any traffic generated by PPC78 (emphasis added), and that this (as expected) would also be the case when the additional traffic demand from PPC78 is added to the intersection².

Flow's report noted:

I recommend that Council investigate whether the planned upgrade of the intersection should be completed earlier than the programmed date of 2024/27, and whether the current Development Contributions policy is sufficient to reflect traffic demand through this intersection generated by PPC78 (pp.18).

The peer review appears to have assumed that the roundabout would be installed within the 2024/2027 period, but that in their view, the project should be brought forward (regardless of the outcome of PPC78).

In summary, there is already an identified need for the intersection to be upgraded based on cumulative traffic effects arising from other developments in the wider Rolleston area. It is also worth noting that the modelling work indicates that the lower Level of Service occurs in the PM peak when school traffic will not have a major impact on traffic flows.

2.2 School Traffic and Associated Effects

Transportation modelling was undertaken in the ITA using the Rolleston Transportation Model. A masterplan school roll of 2,500 high school students, 300 primary school students and 50 ECEC students was assumed, in addition it was assumed that the intersection would be retained as a priority intersection. The modelling was undertaken for the AM peak only. As reported in the RFI Response dated 7 September 2022, the modelling results of this scenario showed, the intersection would operate at LOS E & F with average delays of 50 seconds on the Selwyn Road (west) approach in the morning (AM) peak hour. The Carriageway peer review comments (in summary):

The modelling in the RFI Response shows that the Springston Rolleston Road / Selwyn Road intersection is unable to accommodate the traffic generated by the school. We acknowledge that the intersection is intended to be upgraded to a roundabout, but this appears critical to the safe and efficient operation of the roading network, and we therefore, consider that there should be a condition on the designation that the school could not open until either the roundabout is in place at the intersection, or works are underway to form the roundabout. (pp. 2).

In response to this, Abley has re-modelled the intersection based on the anticipated roll numbers in 2028 (as opposed to assuming a masterplan roll of 2,500 students in that year). In line with prior modelling undertaken as part of this project, only the AM peak has been included in the analysis, because it is considered that the school will have little impact on the capacity of the intersection during

¹ https://www.selwyn.govt.nz/__data/assets/pdf_file/0006/536136/PC78-Officer-s42A-report_Appendix-4-Transport-evidence_final.pdf

² https://www.selwyn.govt.nz/__data/assets/pdf_file/0006/536136/PC78-Officer-s42A-report_Appendix-4-Transport-evidence_final.pdf

the evening (PM) commuter peak as school-related traffic generally occurs prior to this peak. Conversely, the school will result in increased demand during the AM peak period on the road network due to school traffic coinciding with peak commuter traffic. As such, the AM peak is the critical period to consider in the context of the proposed school.

In that regard, it is again important to note that the intersection is under considerably more pressure during the PM peak than the AM peak. On this basis, the school will not exacerbate the existing capacity under performance of the intersection during the already existing critical PM peak, although it will increase demand on the intersection during the AM peak at an acceptable level.

The Ministry network team have provided Abley with the anticipated roll numbers in the year 2028 (with two scenarios provided as this is dependent on the particular year split configuration that is advanced). These figures are based on a detailed network analysis from the MoE network team and are therefore considered to provide a realistic scenario for assessment purposes.

Hence, the following two scenarios have been modelled (in the AM peak period only):

- Scenario 1 – 2028 with a max roll of 930 students (Years 12-13)
- Scenario 2 – 2028 with a max roll of 1500 students (Years 11-13)

The results of the modelling are shown below in Figure 2.1, and confirm that the intersection capacity performance will be satisfactory as a priority intersection in the year 2028.

Rolleston Paramics Model - Intersection Performance Results

Two access Arrangement - 65% Selwyn, 35% Hungerford (1,500 Highschool Roll)

Note: Average delays reported below are stopline based and exclude geometric delays in line with standard Rolleston Model output presentation

Selwyn Road / Springston Rolleston Road as is Priority intersection

Approach	Mvmnt	2028 AM Peak Hour 8-9 Baseline					2028 AM Peak Hour 8-9 with Schools				
		Flow	Avg Delay	LOS	Approach delay	Approach LOS	Flow	Avg Delay	LOS	Approach delay	Approach LOS
Rolleston Springston Rd N	Left	68	1	A	1	A	69	1	A	2	A
	Thru	241	1	A			261	1	A		
	Right	42	4	A			161	4	A		
Selwyn Rd E	Left	19	5	A	9	A	18	13	B	20	C
	Thru	171	9	A			217	20	C		
	Right	53	10	B			42	20	C		
Rolleston Springston Rd S	Left	40	3	A	2	A	48	1	A	2	A
	Thru	144	2	A			145	2	A		
	Right	11	5	A			11	5	A		
Selwyn Rd W	Left	49	7	A	10	A	86	20	C	24	C
	Thru	208	11	B			175	26	D		
	Right	92	10	B			72	26	D		
		1136	5		10	A	1304	11		24	C

Figure 2.1 Selwyn Road / Springston Rolleston Road Modelling Outputs for Scenario 2 (1500 High School Students).

Over the hour (in Scenario 2), the intersection will operate at LOS C with average delays of 11 seconds across all approaches. The worst approach is Selwyn Road (West) with the straight-through and right-turn movement operating at LOS D and average delays of 26 seconds.

It should also be noted that this is somewhat conservative based on the discussion in Section 2.1 of this report, which indicates that it is highly likely that the roundabout would be installed by the time these roll numbers are reached (at which point the modelling results of a priority intersection will no longer be relevant, and prior modelling confirms that as a roundabout the intersection will operate satisfactorily with a masterplan roll of 2,500).

Summary

Acknowledging Carriageway's comments that there is some degree of uncertainty as to the timing of roundabout construction, further analysis has been undertaken based on the anticipated roll sizes by the year 2028. This analysis has confirmed that the intersection would have sufficient capacity to accommodate the likely roll numbers by 2028 in its current format. It is also considered highly likely that by 2028 the roundabout will be installed. This is based on the intersection's poor safety record and the reference in the Carriageway peer review which states that the Long Term Plan indicates a roundabout is to be constructed at the intersection which suggest the upgrade will occur in the 2024-2027 period.

On this basis, it is considered that this analysis sufficiently demonstrates that there is no requirement for a condition to be imposed on the designation which prevents the school from opening until such time that the roundabout has been constructed. That is, the school is not contingent on the roundabout being installed.

2.3 Car Parking

The Carriageway peer review considers parking effects associated with the development and makes the following comment:

If insufficient car parking is provided within the site, this could lead to parking on Springston Rolleston Road and/or Selwyn Road and/or within residential roads in the adjacent subdivisions. This would not be an appropriate outcome and so we consider that an appropriate parking ratio should be included as a condition on the designation (or at the very least, an assessment of parking demand should be required in order to demonstrate that on-street parking will not occur) (pp. 8).

At the outset, it is noted that National Policy Statement on Urban Development 2020 (NPS UD) has had the effect of removing minimum car parking requirements from District Plans of Tier 1, 2 and 3 territorial authorities (including SDC). Most notably, the NPS UD car parking fact sheet states the following:

Removing car parking minimums from district plans will essentially permit new developments to be built without providing any car parks, allowing developers to determine the amount of parking necessary³.

It is accepted that in some scenarios provision of insufficient car parking onsite has potential to lead to adverse traffic safety/efficiency effects. These effects are primarily attributed to cars parking in areas that can create a safety/efficiency problem or cause congestion due to increased traffic circulation and it is therefore considered appropriate that such effects are adequately assessed. In other words, it is considered that car parking overspill onto the streets is not in itself inappropriate, so long as that parking does not compromise the safe and efficient function of the road network.

Parking demand associated with schools varies based on many factors including surrounding environment (i.e., rural, or urban), proximity to residential areas and standard of active mode infrastructure. Given this is a secondary school, some students will be old enough to drive themselves and hence the rate of PUDO is expected to be lower than compared with a primary school (although this may theoretically result in a higher rate of long stay parking when compared with a primary school).

³ <https://environment.govt.nz/assets/Publications/Files/car-parking-factsheet.pdf>

Before the parking minimums were removed from district plans, Selwyn District Plan required a minimum of 0.125 parking spaces per student for a tertiary educational institution (which is considered most applicable given that all students will be eligible to drive, unlike a primary school). For a build size of 2,500 students, this would suggest demand in the order of 313 car parking spaces. For 1500 students in 2028 this would suggest a demand in the order of 188 spaces. NZTA Research Report 453 suggests a rate of 0.1 spaces per secondary school pupil (85%ile rates) and as such would suggest a demand of 250 spaces for a build roll of 2500 students and 150 spaces for the 2028 roll of 1500 students. It is noted that RR453 states that parking areas are not [typically] provided for students at secondary schools, and, in the absence of off-site parking surveys, it is not possible to make a full appraisal. This is of interest for two reasons; firstly, to note that the rates in Table C.1 of RR453 for secondary school should be read with caution as they do not take into account of potential demand for parking on-street, and secondly, it indicates that dedicated parking for students is not typically provided onsite.

Previous MOE design standards in Selwyn required a rate of 0.5 spaces per 25 students (year 9 and above) plus 0.5 spaces per FTE staff for year 9 and above. A ratio of 1 staff member per 15 students is typically assumed. This would require 50 car parking spaces for 2500 students and a further 83 spaces for staff (a total of 133 spaces). For a build roll of 1500 by 2028 this would require 30 spaces for students and 50 spaces for staff (a total of 80 spaces).

It is noted that these rates are considered to be low and are not demand-based but are instead reflective of sustainable school travel initiatives which seek to encourage travel to school on foot, scooting, skateboarding, biking and using public transport. In general terms, on-site parking provision influences the staff and student mode share of a school. Given current government policies such as growing the share of travel by public transport, walking and cycling, and reducing vehicle kilometres travelled as mandated by the Emissions Reduction Plan, it is not considered appropriate to provide extensive car parking, especially for students to be able to travel in single occupancy vehicles to school. Further, car parking is a space-intensive use of land. Instead, the extent of on-site parking provision should be modest, whilst encouraging alternative travel modes to the school.

In this instance, it is noted that the site is close to a densely populated residential area accessed via a modern standard roading network. Accordingly, there will be numerous opportunities for students to utilise active travel modes (such as walking and cycling), with a modern roading network and a relatively dense residential environment making this an attractive and feasible transport option for many students. Given the sustainable travel goals held by the Ministry, such modes of transport should (and will) be encouraged through the development and implementation of a comprehensive Travel Demand Management Plan.

It is not possible to determine the car parking demand for this proposal with any certainty as it is in part influenced by how many spaces are provided on the site. Based on the parking guidance, the demand for parking (at 2500 students) could range from 133 spaces to 313 spaces. For 1500 students it could range from 80 spaces to 188 spaces.

In terms of the kerbside parking environment, the site has four road frontages, Eileen Way (or otherwise referred to as Road 1) to the north, Springston Rolleston Road to the east, Selwyn Road to the south and Hungerford Drive to the west. Both Springston Rolleston Road and Selwyn Road are key connections to the wider roading network in the Selwyn District. Springston Rolleston Road is currently classified as an arterial road. While Selwyn Road is classified as a collector road, Selwyn District Council (SDC) has indicated that it will also be classified as an arterial in future. Both Hungerford Drive and Eileen Way are local roads within the Farringdon South-East subdivision. Hungerford Drive will be a key corridor within the subdivision connecting the internal roads to the wider road network in Rolleston. Contrastingly, Eileen Way is primarily an access road with a carriageway width of 8.0m.

As noted in the original ITA (and as acknowledged in the Carriageway peer review), Hungerford Drive (with a reserve width of 20m and a kerb-to-kerb carriageway width of 9.2m) will allow for kerbside parking on both sides whilst also retaining two-lane / two-way traffic flow. Accordingly, vehicles parked on Hungerford Drive will not compromise its movement function.

Conversely, with Eileen Way having a kerb-to-kerb width of 8.0m, cars parked on both sides of the road will affect the movement function of the road. That is, the road would reduce to one lane / two-way for vehicle movement and two lanes for parking. The Carriageway peer review has recommended a condition which prohibits access (pedestrian and vehicle) from being obtained from Eileen Way as they consider this could create congestion issues arising from parents / caregivers dropping students off.

Abley has considered this recommendation, and notes that it would be possible to provide for parking on one side of the road only whilst still maintaining two-lane / two-way vehicle movement. Assuming a parking lane of 2.0m-2.2m wide, this would retain 5.8-6.0m of width for the movement of vehicles (which is sufficient for two vehicles travelling in opposing directions to pass one another). As such, Abley considers that it would be possible to provide access to the site from Eileen Way, although it is considered that further assessment will be required to assess the effects of this once the site layout is better understood (and based on nature and scale of any potential future access). This will allow for, and ensure that, suitable mitigation measures are considered and implemented as appropriate. This could, for example, include the installation of broken yellow no stopping at all times (NSAAT) lines on one side of the road.

Having reviewed the approved engineering 'for construction' plans for Stages 4, 5 & 7 of the South East Faringdon Subdivision, it is noted that Swan Way, Harness Way, Hurley Drive and Sandsview Way have an almost identical cross-section to Eileen Way (except that these roads have a 1.5m wide footpath on one side instead of a 2.5m wide shared path on one side, as is the case for Road 1). As such, similar mitigation measures could be explored at the time of OPW if such a need is identified. This can only be determined once the level of onsite parking has been determined.

Abley agrees with Carriageway's comments that parked vehicles on Selwyn Road or Springston-Rolleston Road (or both) could create efficiency issues. It is also agreed that this could be appropriately managed by installing parking restrictions to prevent that outcome, which is consistent with the movement function of those higher order roads. Accordingly, it is considered that this is best considered at the time of OPW, once access locations have been selected and implications on the road network are understood.

Turning back to the philosophy of providing a minimum number of car parks, the following is also relevant from the NPS UD parking fact sheet:

District plans may contain a policy stating that comprehensive parking management plans, travel demand management and other methods are the appropriate means of managing the demand and supply effects of car parking. Policy 11(b) encourages the use of comprehensive parking management plans. Maximum parking rates can be used and are a legitimate tool for demand management, and can support high density and public transport use objectives⁴.

⁴ <https://environment.govt.nz/assets/Publications/Files/car-parking-factsheet.pdf>

In order to provide a comprehensive and consistent approach to travel management, the NOR has advanced a travel management plan condition which addresses the following:

- set the initial goals of the school with respect to sustainable travel modes and mitigating real and potential adverse traffic effects;
- ensure sufficient access and off-street car parking, including for drop off and pick up, and bus parking, is provided;
- facilitate the integration of the school with the surrounding transport network (including pedestrian and cycling access to the site); and
- provide an assessment, if no travel management plan has been provided, as to how a travel management travel plan would be developed.

The requirement for the travel management plan would be triggered (or be reviewed / revised) each time an OPW is lodged that involves an increase in student capacity for more than 100 students. It should also be noted that the travel demand management plan will need to be prepared in consultation with the SDC school travel planning team to deliver site specific and agree wide measures that will impact on school travel. This consultation will occur prior to lodgement of each OPW as appropriate.

Given that there is currently no detailed information available around the master planning and future site development, including the location of buildings, vehicle accesses and car parking (which is not unusual at the Notice of Requirement stage), the above condition is considered sufficient to address the concern raised by Carriageway in their peer review of the proposal. Namely, the second bullet point will provide an appropriate mechanism for the Council to assess car parking provision at the time of OPW, at which point the details of site development, including access and building locations, will be better understood. This will also include an assessment and implementation of on-road parking restrictions should these be required.

It is also noted that it is unlikely that the entire school would be advanced as a single OPW application, instead, there will likely to be several OPW applications for different stages/components of the project. This approach will provide the Council with an opportunity to understand parking demand and use as the school stages progress.

Summary

Given the directive of the NPS UD, it is considered that prescribing a specific minimum car parking ratio is no longer an appropriate approach. It is considered that doing so is likely to encourage students and staff to travel to school by private car and consequently undermine the sustainable travel focus held by the Ministry. Instead, a greater focus will be made on travel demand management, thereby encouraging a higher use of active modes when travelling to the school for students and staff alike (but still ensuring that the available car parking is sufficient to avoid adverse traffic safety and efficiency effects) and providing excellent connectivity to public transport services.