

27 July 2019

Waikato District Council
C/- Element Planning
Attn: Michelle Carmine



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Dear Michelle

PROPOSED SUPERMARKET, POKENO –TRANSPORTATION REVIEW AND SUGGESTED CONDITIONS

1. Introduction

Woolworths Limited (the applicant) has made an application for resource consent for a new supermarket in Pokeno. Waikato District Council (WDC) has engaged Gray Matter Ltd to peer review the traffic and transportation aspects of the proposed Woolworths Supermarket. We assisted WDC during the pre-application phase, requests for further information, and discussions relating to WDC's plans for the Pokeno Road network and pedestrian crossing facilities, including liaison with the Applicant's traffic engineer.

The application seeks to develop a 3,000 m² supermarket with 146 on-site parking spaces and internal loading area on Great South Road, Pokeno.

This letter presents our assessment to support WDC's planner's report. It includes:

- = A summary of the key aspects of the application from a traffic and transportation perspective;
- = Comments on the Applicant's assessment and main areas of agreement and disagreement;
- = Comments on submissions;
- = Our evaluation of the nature and extent of traffic effects from the proposal;
- = Suggested conditions to mitigate adverse effects; and
- = Relative impacts compared to the expected environment taking into account the District Plan permitted and consented activities, and likely network changes.

We have previously provided an initial transportation review (letter dated 11 April 2019) and request for further information (letter dated 13 May 2019). In brief, we note that although there is uncertainty relating to the nature and timing of changes and upgrades to the Pokeno transport network and we consider that we now have sufficient information to assess the proposal.

This review is based on:

- = Application and AEE
- = Countdown Pokeno. Great South Road, Transportation Assessment Report, prepared for Woolworths New Zealand Limited, prepared by Stantec, 26 March 2019;
- = Countdown Pokeno. Great South Road Pedestrian Access Options Assessment, prepared for Woolworths New Zealand Limited, prepared by Stantec, 31 May 2019; and
- = Site visits, including meeting with Waikato District Council representatives and the Applicant on 4 April 2019.
- = Pokeno Intersection Assessment Report, Prepared for Waikato District Council by Beca Limited, 3 February 2017;

- = Waikato District Council Resource Consent, Decision on Application LUC0139/15 & SUB0118/16, dated 15 March 2017;
- = Progressive Enterprises Ltd, Fresh Choice, Pokeno, Transportation Assessment Report, June 2015;
- = Layout plans prepared by CivilPlan Consultants, Pre-App Draft Plans, February 2019;
- = Waikato DC memo dated 11 June 2019 regarding Council's Long Term Plan expectations for Pokeno transport infrastructure including intersection upgrades and pedestrian crossing options (Attachment 1 to this letter); and
- = Gray Matter memo dated 17 June 2019 to Ross Bayer (WDC) titled "Revision: Pedestrian crossing facility selection -Central Pokeno" (Attachment 2 to this letter).

2. Site Location and Proposal

The application is for development of a Countdown supermarket within Pokeno. The site has road frontage to Great South Road. Vehicular access is proposed along the southern boundary of the site via two entranceways from Wellington Street which is currently an unformed paper road. The proposal includes forming Wellington Street along the site frontage including footpath and on-street parking on the side of the site. Wellington Street is proposed as a priority T intersection with Great South Road. The proposal results in the removal of existing on-street parking spaces along Great South Road. The Transportation Assessment Report (TAR) states that a new pedestrian crossing point is to be established across Great South Road and provision of a new footpath along the Great South Road frontage.

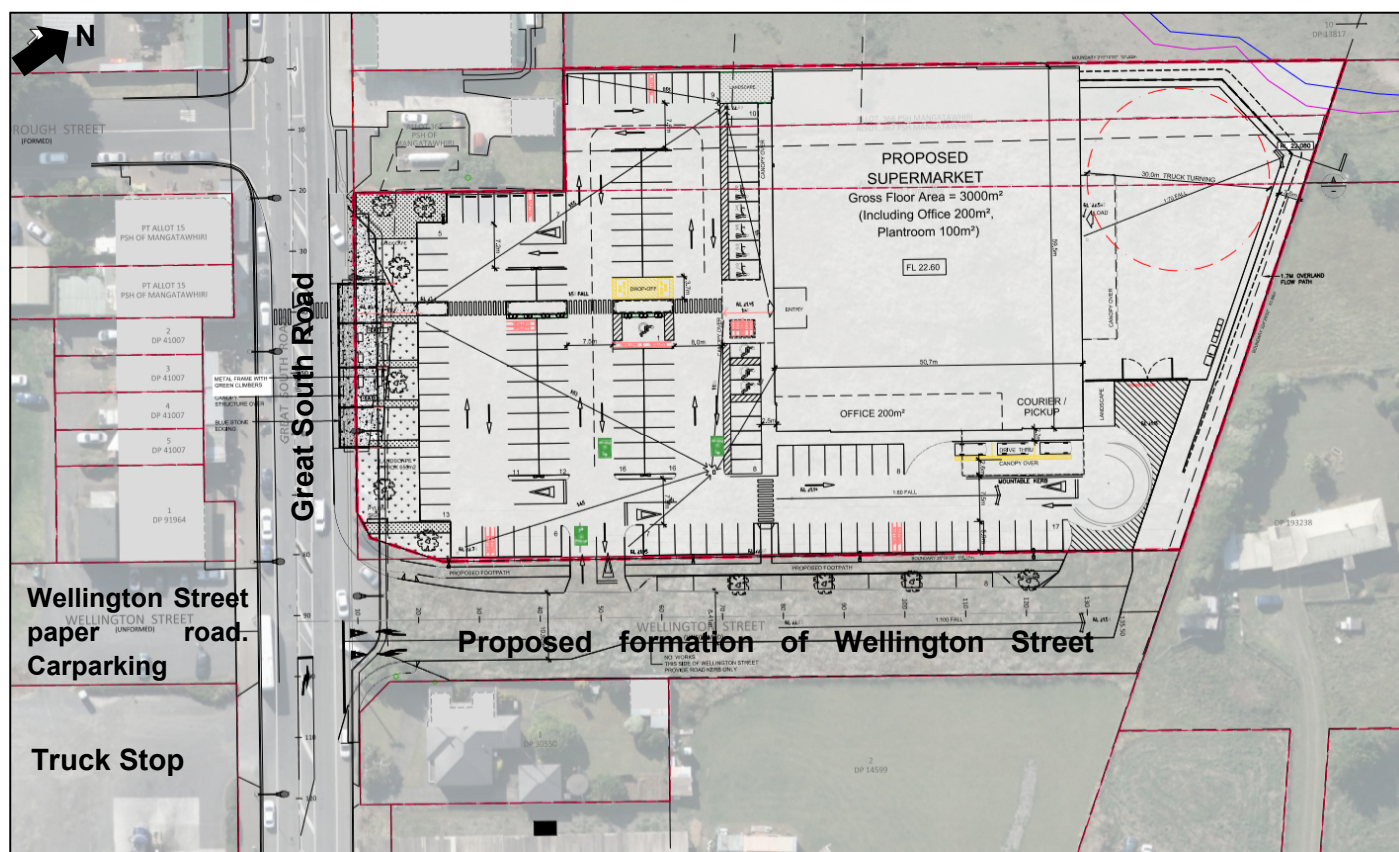


Figure 1: Proposed Supermarket (snipped from the TAR).

The site is within the Business zone of the Operative Waikato District Plan Franklin Section (ODP). The adjacent properties to the site are business zone with the exception of the property to the NE of the site and at the end of the Wellington Street paper road which is residential zone.



Figure 2: Site of the Proposed Countdown Supermarket.

In March 2017, WDC granted consent for a Fresh Choice supermarket on the site. The consented activity allowed for:

- = 1,100 m2 GFA supermarket with 100 m2 GFA of office space;
- = Two separate retail buildings along the Great South road frontage;
- = vehicle access to the site from Wellington Street;
- = 69 on-site parking spaces with on-site loading and servicing at the rear of the supermarket and an additional loading space in front of the retail buildings;
- = On-site footpath connections between the retail building and car park and connecting with a new footpath along the site frontages of Great South Road and Wellington Street; and
- = Removal of on-street parking along Great South Road.

Consent was subject to conditions including a requirement for the installation of a pedestrian crossing facility with central refuge and kerb build outs across Great South Road.

This has implications for considering the traffic effects of the proposal, compared to the existing or consented environment. The key points relate to:

- = Relative trip generation from the proposed supermarket in addition to the consented activity;
- = Opportunities for pedestrians crossing the road and potential impact on parking, since an island was required in the previous conditions; and,
- = Treatment of the Wellington Street intersection and interaction with the Z truck stop - since there is an existing supermarket consent for a smaller activity, the intersection layout would be expected so the effect is mainly due to the increased use.

3. District Plan Assessment

The Application appears to comply with the relevant standards and requirements in the District Plan relevant to transportation except two aspects as presented in Table 1 (vehicle crossings/driveways and frontage design). The frontage canopy/urban park, footpath width and parking options balance competing demands for space and functions. Although there is an influence on pedestrian convenience we do not consider that

likely to be significant and understand that the Great South Road frontage canopy and urban park will be considered as an urban design matter.

District Plan Rule	Proposal	Consequence
<p>29.5.8 Vehicle Crossings and Driveways</p> <p>Except where access is proposed to a state highway:</p> <p>For sites within the Business Centres shown on the planning maps.</p> <p>Vehicle crossings (driveways) between sites and the edge of the formation (kerb-line) of any road or service lane shall comply with Council's current policy.</p> <p>Council's policy dated 2007 for vehicle crossings applies and the main requirements are summarised as follows:</p> <ul style="list-style-type: none"> -One crossing per property (contained in one Certificate of Title) -Any property having a frontage in excess of 15 metres but less than 60 metres shall be permitted a second crossing. <p>Any property with a frontage exceeding 60 metres in length shall be permitted one further crossing (i.e. a maximum of three crossings for sites in excess of 60 metres.)</p> <p><i>-The maximum width of any crossing shall be 6 metres at the boundary line with provision for a splay, provided that the length of crossing on the kerb line shall not exceed seven metres. The total width of such crossings shall not exceed 50% of the frontage of front sites. Where two properties combine to form one crossing, the total width at the boundary line shall not exceed six metres.</i></p> <ul style="list-style-type: none"> -A minimum distance of two metres shall be provided between two crossings to act as pedestrian refuge. <p>Construction standards are set out in the 2007 policy.</p>	<p>Two vehicle crossings are proposed from Wellington Street (9m and 10m). Does not comply with the maximum width requirements of 6m at the boundary and 7m width at the kerb line.</p>	<p>Two way entry and exit will be possible with the wider crossings. There will be a longer crossing for pedestrians to pass over, and therefore potential for an increased safety risk in a low speed environment. However pedestrian activity across the vehicle crossings is likely to be low since the supermarket is the sole land use on Wellington Street and there are only 8 on-road spaces on Wellington Street with a direct pedestrian connection into the supermarket. The crossing width allowing two way movements will reduce the risk of queues backing up and adversely affecting Great South Road. The benefits of providing for two way vehicle movements is likely to outweigh any potential adverse effects on pedestrian safety.</p>
<p>Appendix 29.2 Business Zone (Pokeno) Design Assessment Criteria</p> <p>Design element 1: Site Planning</p> <p>Item 7. If buildings cannot be built to all road boundaries (other than identified parts of Great South Road, where this is expected), attractively landscaped areas should be provided between the building and the open road frontage. If possible, the use of such areas for parking should be limited to not more than two rows of car parking to avoid adverse effects on the streetscape and pedestrian amenity.</p>	<p>The proposal includes more than two rows of parking in the Great South Road frontage.</p>	<p>Pedestrian and streetscape amenity is provided for by the "urban park" area along the Great South Road frontage.</p>

Table 1: Transport aspects of the District Plan that the proposal does not comply with

4. Submissions

Table 1 below summarises transport topics raised in submissions.

No.	Support	Submission	Traffic topics – action requested	Comment/response
1	Support	Costello	None	None
2	Support	Morris	Positive safety effect of reduced travel elsewhere	Note
3	Support	Morris	Positive environmental effect of reduced travel elsewhere	Note
4	Support	Norgrove	Options to coordinate earthworks	Consider consultation prior to detailed design as part of construction management planning.
5	Support	Little	None	None
6	Support	Little	None	None

No.	Support	Submission	Traffic topics – action requested	Comment/response
7	Support	Langrish	None	None
8	Support	Pokeno Village Holdings	Less travel out of area	Note
			Supports town centre	Note
9	Support	McIntosh	None	None
10	Neutral	Min of Ed	Pokeno School and impact of through traffic	Operation and construction management – and travel plan coordination.
			Pedestrian movements and crossing Wellington Street	Travel plans and communication.
11	Oppose	Z - Energy	Traffic layout and operation affecting operation of the truck stop.	Depends on use/status of Wellington Street paper road. Layout consented and could be expected from paper road. Assess change for existing and potential environment – Wellington Street formed. Truck stop should be able to manage effects to be internal. Truck stop application said main movement south to north. Detailed design.
			Adverse effects not sufficiently mitigated, including the ability to manage the road system	Truck stop as above.
			Reliance on painted median	Truck stop application said main movement south to north. Very wide vehicle crossings consented to accommodate large vehicles. Detailed design. Base assessment on more parking being removed to allow for layout changes.
12	Support (similar to other McIntosh)	McIntosh	Indirect reference to truck stop lease to Z and future use.	Unclear – does this have implications for future of Z conflict.
13	Support	McIntosh	Location benefits – reduced need to travel for supermarket shopping	Potential positive traffic effects from local facility.
14	Support	McIntosh	Parking design faultless	None
15	Support (but comments similar to 16 below)	Pokeno Community Committee	Keep car parks on Great South Road Loss of parking	WDC roading will monitor pedestrian crossing
			Trucks queuing for truck stop	Depends on use/status of Wellington Street paper road. Assess change for existing and potential environment – Wellington Street formed. Truck stop should be able to manage effects to be internal. Truck stop application said most movements would be left in/out. Detailed design.
			Location consistent with long term Town Centre Strategy	Assessment specific to this application.

No.	Support	Submission	Traffic topics – action requested	Comment/response
			Benefit from the convenience of a supermarket in the local area.	
			A pedestrian crossing must be included in the plans connecting the Countdown site to the retail precinct across the road.	Pedestrian assessment
16	Oppose	Clotworthy	Truck and trailer queuing conflict and swept path egress	Depends on use/status of Wellington Street paper road. Assess change for existing and potential environment – Wellington Street formed. Truck stop should be able to manage effects to be internal. Consider queuing likelihood.
			Parking loss at frontage	Check land status – understood to be private and part of proposal.
			Plaza space parking requirements	Consider with pedestrian and parking effects.
			Pedestrian convenience	Pedestrian assessment
			Plaza location –	traffic considered separately – urban design not in GM review topic.
			Parking during construction	Construction traffic management plan to consider parking
			Location consistent with long term Town Centre Strategy	Assessment specific to this application.
17	Support	Tha Mao	<p>Engineering plans show a swale on southern side of Wellington Street – affects access to future development of 44 Great South Road.</p> <ul style="list-style-type: none"> - Move swale to avoid crossing conflict. - Retain some parking at supermarket frontage (Great South Road). 	<p>Require consultation prior to detailed design.</p> <p>Highlight parking request to WDC for consideration.</p>

Table 2: Submission Summary – Transport Topics

The main issues raised are:

- = Parking – loss of parking at frontage, during construction;
- = Traffic conflict with truck stop activities, including traffic disruption or use of median;
- = Design and construction - road formation and swale affecting future development on Wellington Street;
- = Positive effects from supermarket supporting town centre and reducing the need for travel elsewhere;
- = Consistency with town centre strategy, plaza location, etc.; and
- = Impact on pedestrians – crossing, trips to school.

5. Pokeno Expected Transport Network

5.1. General

The TAR references a Beca report on future changes to the Pokeno transport network. WDC provided information relating to the need for a pedestrian crossing and funding for Pokeno transport infrastructure. The scope, extent and commitment to improvements is not clear, but there is funding identified relevant to Great South Road.

5.2. Pedestrian Crossing

The proposed site layout plan (Figure 3-1 of the TAR) shows a pedestrian crossing on Great South Road with a note “Public asset under separate assessment” that the applicant is not providing.

WDC roading staff have indicated that their preferred approach is to monitor behaviour and safety with the supermarket in operation and develop pedestrian solutions based on their findings, potentially as part of a wider upgrade. WDC anticipate pedestrian facilities relevant to the supermarket to be in place within three years. Refer to Attachment 1 (WDC Roding Staff Memo).

A pedestrian crossing was required in conditions as part of the original consent. This would have affected some parking spaces on Great South Road.

5.3. Wellington Street

The application includes forming Wellington Street as a T intersection with Great South Road. WDC has no confirmed plans for the currently unformed Wellington Street on the southwestern side of Great South Road. A T intersection and forming Wellington Street on the supermarket side is appropriate to service the supermarket. This also formed part of the consented proposal so the layout could be considered part of the consented environment, subject to detailed design.

Waikato DC is considering options for an upgrade to the Pokeno town centre. This may include an internal bypass road of some sort, with Wellington Street a potential option. WDC roading staff have advised that there are no preferred options at this stage. We have therefore not considered a bypass as part of the expected environment, but note that options such as traffic signals that suit a crossroads could contribute to pedestrian crossing safety and convenience.

WDC are proposing to resurface Great South Road. We understand that this includes kerbing. Detailed design of the Wellington Street car park vehicle crossing on the opposite (truck stop) side should be coordinated with the supermarket intersection design.

5.4. Pokeno Road/Great South Road Intersection

The applicant’s assessment (TAR) refers to a 2017 Beca report (Pokeno Intersection Assessment Report prepared for Waikato District Council 3 February 2017).

The Beca report identifies intersections where upgrades will be required in the short – medium term:

- = Pokeno Road/Great South Road intersection (upgrade to roundabout);
- = Pokeno Road/Helenslee Road (upgrade to traffic signals);
- = Great South Road/SH1 NB On-ramp intersection upgrade to roundabout
- = Pokeno Road/Munro Road upgrade to roundabout; and
- = Pokeno Road/McLean Road (new road) traffic signals.
- = McLean Road, including an overbridge over the NIMT (currently under construction).

The TAR concludes that the Pokeno Road/Great South Road intersection will need to be upgraded with or without the supermarket development. We understand that WDC’s LTP projects includes \$400K to upgrade the intersection in 2021.

6. Trip Generation and Distribution

The trip generation assessment is presented in Section 5.1.2 of the TAR. The Applicant expects the trip generation of the proposed supermarket to be 318 vph during the peak hour, 75 vph more than the consented smaller supermarket and retail activity. The TAR expects one third of the supermarket traffic will already be passing the site and the trip distribution to be 70/30 split to and from the north/south. The TAR states that this assumption is based on the future residential growth being provided primarily to the north of the main township.

The Stantec traffic is based on 10.6vph and 2,200vpd (318vph). The TAR assesses the trip generation based on surveys completed at around six Countdown supermarkets around NZ that suggest RR453 is around 50% higher for supermarkets.

We prefer to use published trip generation rates and would typically assess the trip generation based on 85th percentile rates from the NZTA Research Report 453 (NZTA RR453).

Land Use Category	Rate	Trip Generation
8.6 Supermarket	129 vpd/100m2 GFA 17.9 vph / 100 m2 GFA	3,870 vpd 537 vph

Table 3: Trips Generation based on NZTA RR453

In this case, the rates based on surveys appear reasonable and substantiated. The difference of 1,000vpd is not transformational in terms of the expected traffic.

Those trips are at the site, and therefore do not recognise the reduction from pass by (people using the road anyway) and diversion (localised diversions by people that would normally use nearby roads in same travel “corridor”). The bypass and diversion rates in the TAR appear reasonable so depending on where you are measuring, the estimated 2,200vpd at Wellington Street would therefore reduce to around 1,800 vpd upstream and downstream on Great South Road and 1,000 vpd further away. Since Pokeno has few competing sites, we would expect little impact when it gets beyond urban area (just local rural shoppers). Compared to the existing (no development and no trips) the increase in trips from the proposed supermarket is 2,200 vpd or around 320 vph.

The TAR (5.1.1) considers the potential traffic permitted by the existing consent, but based on published rates. The previous assessment was based on around 1,600sqm (Fresh Choice plus some retail) at around $18.9\text{trips}/100\text{sqm} = 304\text{vph}$.

We consider that the relative difference in traffic from the proposals should be based on a consistent basis (survey or reference sources, but not both) but would mean that some “additional” traffic has to be recognised. We consider that the nett increase (proposed supermarket compared to consented development option) would be about 120vph or around 850vpd¹.

The majority of residential growth is in the north of Pokeno. The supermarket’s location within the town centre. The dominant movement is expected to be from the north meaning left turns in, right turns out.

The TAR refers to Beca’s “Pokeno Intersection Assessment Report” (3 February 2017) and infers that the future traffic volumes on the surrounding network double in the next ten years. The TAR presents SIDRA modelling completed for the proposed Great South Road/Wellington street intersection (as a T intersection) and for the Pokeno Road/Great South Road intersection for opening year and a ten year horizon.

The modelling shows that in ten years at the Great South Road/Pokeno Road intersection the right turn out of Pokeno Road movement reduces to a LOS F for both the scenario with the development and without the development. The Beca report concludes that by 2022 a single lane roundabout will be required at this intersection.

Wider network traffic effects from the supermarket would be a small part of the existing Pokeno traffic as it grows, and is unlikely to have a significant impact on the changing levels of service or triggers for timing any upgrades.

¹ Estimate based on an increase in area from around 1600sqm to 3000sqm, and a trip rate reduction to reflect the larger supermarket by say 20%. The increase in traffic compared to consented (before pass-by and diverted trips) would therefore be $120\text{vph} (3000\text{sqm}-1600\text{sqm}) - (10.6\text{trips}/100\text{sqm} \times 80\%)$

7. Comment on the Internal Layout

The internal parking layout appears satisfactory. Around five deliveries per day are likely to be in semi-trailer vehicles.

Detailed design should require loading and servicing vehicles swept paths to be checked to ensure adequate operation of the loading areas in order to allow all vehicles to exit the site in a forward direction.

8. Evaluation of Transportation Impacts

Our base assessment is on the existing environment with an expectation of some changes (capacity improvements and Great South Road upgrades) that would make adverse effects from supermarket traffic unlikely to lead to noticeable changes in delays or safety outcomes away from the immediate vicinity of the supermarket site.

Our understanding is that Council:

- = Is not proposing to change the existing operation of Great South Road or the immediate area surrounding the site, other than resurfacing.
- = Will deal with pedestrian crossing impacts in the vicinity of the site following observations and within around three years.
- = Will deal with wider network impacts around the Pokeno network with investment in accordance with the LTP, partially funded by development contributions.

Pokeno's growth will result in higher traffic flows. These influence our consideration of traffic passing the site frontage. Away from the immediate vicinity of the supermarket site the effects will reduce. At the site frontage and the Wellington Street intersection, the traffic effects and effects from the intersection are most significant and where we focus our evaluation.

The potential adverse traffic related effects of the proposed supermarket include:

Transportation Effect	Comment on Effects	Scale of Effect
Efficiency	The supermarket is likely to generate around 850 vpd more than the consented development. Dominant movements are to/from the north, left turns in and right turns out at the new Wellington Street intersection. A high proportion of the traffic will already be travelling on the network (pass-by and diverted trips), so the effects are concentrated to Wellington Street, Great South Road and the Pokeno/Great South Road intersection. There is the potential for conflicting movements between trucks using the truck stop (turning into or out of) and traffic at the Wellington Street intersection and is likely to mean that trucks entering the truck stop from the north will need to use the southern vehicle crossing to avoid crossing into the right turn bay space. However the detailed design of the intersection is expected to include the removal of on-street parking to accommodate turning movements at the intersection and the truck stop. Road rules will apply and is likely to mean the truck stop northern vehicle crossing is used for exiting only. The truck stop is expected to be able to manage manoeuvring internally. The new intersection and right turn bay may result in a change to the operation of the truck stop ingress, egress and internal manoeuvring.	Other road users including trucks using the truck stop opposite are likely to notice the additional traffic because of the new intersection but provided that detailed design of the intersection is completed to minimise impacts on the existing truck stop and through traffic conflicts there is a low risk of delays to other users. The Wellington Street and local intersections are expected to operate with an adequate level of service.

Transportation Effect	Comment on Effects	Scale of Effect
Safety – pedestrians crossing Great South Road.	<p>Additional traffic reduces the gaps available for safe road crossing. The supermarket is expected to increase the pedestrian demand crossing Great South Road and therefore there is increased potential for adverse effects on pedestrians' safety crossing the road.</p> <p>WDC plan to monitor the pedestrian demand and there is no evidence of existing pedestrian safety issues. However a pedestrian crossing facility on Great South Road close to the supermarket frontage is desirable and is a condition of the consented activity. Refer to Attachment 2 for our pedestrian assessment. The problem is that there is no existing pedestrian facility and since the supermarket is introducing additional traffic and some pedestrians, to provide certainty of the crossing demand and to enable Council to determine the appropriate type and location of pedestrian crossing, it would be appropriate for a consent condition requiring the applicant to complete a pedestrian survey following opening of the supermarket.</p>	<p>There will be additional pedestrian demand crossing Great South Road from the supermarket, however the incremental increase in safety risk to pedestrians from the introduction of the supermarket is not at a level that triggers specific mitigation such as constructing the crossing.</p>
Safety – pedestrians crossing Wellington Street	<p>The introduction of the Wellington Street intersection is a new potential conflict for pedestrians along Great South Road on that side who will need to cross Wellington Street if they are travelling south. However the existing footpath on that side stops not far south of Wellington Street but is continuous along the opposite side connecting to MacDonald Road. There is likely to be some pedestrian demand, including on weekends generated by the Pokeno Markets however we would expect this to be low because the existing footpath does not continue along this side and is continuous on the opposite side (to Macdonald Road).</p>	<p>Expected to be low demand and the provision of a pedestrian crossing on Great South Road will enable pedestrians to use the existing footpath on opposite side to connect south of the site.</p>

Transportation Effect	Comment on Effects	Scale of Effect
Safety – vehicular traffic	<p>Forming Wellington Street as a T intersection introduces a conflict point and the additional traffic increases the risk of adverse safety effects for vehicular traffic. The intersection is consented and also anticipated as a paper road in a low speed environment and should be formed to appropriate standards.</p> <p>There is the potential for adverse safety effects on users with the interaction of trucks and supermarket traffic, however road rules apply so trucks exiting the truck stop will need to give way to road users. There is space available within the truck stop site to accommodate queuing within the site. To minimise confusion and conflict in relation to truck stop activities opposite, the interaction of the truck stop and the intersection should be considered during detailed design.</p>	<p>The supermarket will introduce truck movements to the intersection, although these are expected to low (around 5-10 trucks per day) and it would be desirable for truck deliveries to avoid school and peak periods. This could be achieved through a site loading management plan. However the number of trucks expected is relatively low (5-10/day) and the impact of trucks at the intersection during peak periods is unlikely to result in a significantly higher crash risk.</p> <p>The swept paths of trucks using the intersection and the truck stop may need to cross into the median space and detailed design of the intersection and right turn bay needs to consider the potential for conflicting movements. The detailed design should consider swept paths for trucks at the truck stop and is likely to mean a short right turn bay and parking restrictions on Great South Road. The dominant movement is expected to be to and from the north. The conflicting movements (to/from the south, right turn ins and left turns out of Wellington Street) with the truck stop are minimised.</p>
Safety - cycling	<p>The introduction of the Wellington Street intersection is a new potential conflict for cyclists traveling along Great South Road. There are no existing designated facilities for cyclists and the demand appears to be low.</p>	<p>Wellington Street is a paper road and forming the intersection is part of the consented activity. Provided the intersection is designed to appropriate standards there is no reason to expect a disproportionate increase in cyclist crashes.</p>
On-site parking and loading effects	<p>There is the potential for adverse effects on Wellington Street road users and pedestrians if trucks need to reverse out of the site. The supermarket proposal includes 146 on-site parking spaces and is expected to accommodate the supermarket demand on -site.</p>	<p>Swept paths have been provided to show that manoeuvring can be completed on site and the expected vehicles can exit the site in a forwards direction. These should be checked during detailed design. A condition requiring detailed design of the internal parking, loading and servicing layout including swept paths will ensure vehicles avoid the need for reversing onto Wellington Street.</p>

Transportation Effect	Comment on Effects	Scale of Effect
Parking effects – loss of on-street spaces	<p>The proposal results in a loss of on-street parking on Great South Road because of the urban park and the formation of the Wellington Street intersection, however the loss will be offset in part by eight new on-street spaces on Wellington Street. The existing angle spaces on Great South Road will be removed, these are partially within private property and the road reserve and are being used by the general public. The supermarket proposal includes 146 on-site parking spaces and is expected to accommodate the supermarket demand on -site so no new demand for on-street spaces is expected. The reduction in on-street spaces means that visitors to the existing shops will need to park further away and walk.</p> <p>The introduction of the supermarket is likely to mean dual purpose trips and there appears to be sufficient space within walking distance on the surrounding network (and the unformed Wellington Street) to accommodate the loss of on-street parking.</p> <p>During construction, the loss of car parks will be greater from the removal of the Great South Road spaces and any spaces affected by temporary traffic management.</p>	<p>Reduction in on-street spaces is likely to mean drivers will need to walk increased distances from parking areas to desired shopping areas and there will be increased demand for parking within off-street areas. A shift of 8 spaces by 75-100m from Great South Road to Wellington Street means an additional walk of around 1-2 minutes for users. A nett loss of around 10 spaces will result in users having to find alternative space further away, also equivalent to around 1-2 minutes².</p> <p>Council is responsible for managing car parking on-street and can impose parking restrictions including no parking. This could be managed through Council's plans to develop the town centre including consideration of options such as forming Wellington Street opposite the supermarket to include on-street spaces.</p> <p>During construction, users will have to park further away and walk. There appears to be sufficient space on side roads and further along Great South Road to accommodate parking during construction. Users may have to park 150-200m away and walk for around 2-3 minutes. This will be a temporary situation.</p>
Construction effects	There will be heavy vehicle activity during the construction period with potential adverse effects on road safety and network efficiency.	The potential adverse effects should be mitigated through a consent condition for a construction management plan.

Table 4: Preliminary evaluation of transportation impacts

The efficiency effects of the proposed supermarket are likely to remain within expected conditions for surrounding transport network and the projected traffic that the Beca report expects to trigger intersection upgrades and timing.

Consent conditions requiring detailed design of the new intersection will manage the potential safety effects on road users including the truck stop of the new intersection.

The supermarket will increase traffic and pedestrian demand crossing Great South Road and therefore increases the potential adverse safety risk to pedestrians. Given there is no existing pedestrian crossing facility and there is significant future growth expected for the town centre of Pokeno, it is desirable that Council facilitates safe crossing of Great South Road for pedestrians. We support the implementation of a pedestrian crossing facility within three years horizon to manage these effects. Refer to Attachment 2 for our pedestrian assessment.

9. Suggested Conditions

It would be desirable for the resurfacing work and supermarket development works to be coordinated with WDC. This would reduce construction effects and reduce extent and duration of temporary traffic management.

² 10 spaces @ 6m each is approximately 40% of the kerb length available (around 150m).

A servicing and loading management plan would be desirable to provide an option for directing the timing and/or direction of servicing vehicles to minimise the potential for conflict near the truck stop access.

Adverse effect to address	Condition topic/suggestion	
Prior to detailed design		
<u>Design principles</u>	Consultation with WDC roading to: <ul style="list-style-type: none"> • Confirm detailed design requirements, including dealing with parking and whether parallel parking could remain at the site frontage. • Confirm timing and nature of WDC works affecting the site frontage and Wellington Street. • Identify opportunities for coordination of design and construction with WDC works. • Consult with owners of 26 Market Street regarding earthworks staging 	Prior to detailed design
<u>Future development</u> Swale potentially compromising future development of 44 Great South Road.	Consult with owners of 44 Great South Road prior to detailed design to provide an opportunity to identify likely crossing point for access to 44 Great South Road from Wellington Street that meets District Plan standards.	Prior to detailed design
Prior to construction commencing		
Detailed design	Detailed design to be prepared and presented to WDC roading staff for authorisation and shall include the following: <ul style="list-style-type: none"> • Design and implementation of earthworks and drainage on Wellington Street shall not impede future practicable formation of an access to 44 Great South Road from Wellington Street that meets District Plan standards if confirmed in consultation. • Design shall be carried out to tie in to Waikato DC plans for kerbing/resurfacing at frontage. • Specific consideration of pedestrian and cyclist access, egress and road crossing. • Wellington Street/Great South Road intersection shall be designed as a right turn bay (minimum length 10m) and laid out and marked to minimise confusion and conflict in relation to truck stop activities opposite. • Vehicle swept paths to confirm servicing and loading area layout is adequate to allow expected vehicles and avoid the need for reversing onto Wellington Street. • Vehicle swept paths at Wellington Street intersection, including trucks accessing the truck stop opposite to minimise conflict and confirm extent of no parking restrictions. 	20 days prior to construction commencing

Adverse effect to address	Condition topic/suggestion	
Safety Audit	<p>Independent Road Safety Audit of the detailed design in accordance with NZTA Guidelines for Independent Road Safety Audits. The audit shall give specific consideration to:</p> <ul style="list-style-type: none"> • pedestrian access and safety, • large vehicles turning at the Wellington Street intersection with Great South Road • Interaction of traffic at the truck stop entrance and egress <p>The Road Safety Audit shall separate out the decision tracking between designer, client – developer, WDC safety engineer and WDC as road controlling authority client role (final decision). The design shall be amended until all significant and serious concerns identified in the safety audit have been addressed to the satisfaction of WDC as road controlling authority.</p> <p>The completed RSA shall be submitted with the detailed design engineering drawings accompanied by a statement explaining why any remaining safety concerns have not been addressed.</p>	With detailed design
Construction traffic, dust, etc.	<p>Construction Management Plan, incorporating:</p> <ul style="list-style-type: none"> • Prepare following consultation with Waikato DC roading staff • Prepare following consultation with Submitter #4 (Norgrove) to consider options for earthworks minimise volume of material transported by roads (no obligation to act) • Prepare following consultation with the Ministry of Education (or Principal of Pokeno School) • Prepare following consultation with Submitter #11 (Z truck stop) • Complaints register; • Temporary traffic management plan in accordance with COPTTM • Provide safe pedestrian access along Great South Road at frontage without needing to cross Great South Road suitable for all road users including school children. • All construction access shall be from Wellington Street unless impractical for some stages and specifically authorised by WDC • Wellington Street for at least 60m from Great South Road shall be formed to an all weather surface prior to works within the site (excluding fencing, investigation and establishment) • Construction parking and loading management plan to ensure all parking and loading/unloading is completed on site. • Arrangements to ensure no debris, dust or mud is left on the road, and for cleaning/clearing should any arise. 	Submit for authorisation 20 days prior to construction commencing
During Construction		
Construction management	<p>Implement construction management plan, including:</p> <ul style="list-style-type: none"> • Temporary traffic management • Ensure no debris on road • Ensure no construction parking/loading on road 	
Prior to Operation		
Delivery management plan	<p>Prepare and submit to WDC for authorisation a delivery management plan to:</p> <ul style="list-style-type: none"> • Manage deliveries, loading and unloading to ensure no queuing on Wellington Street; • Manage deliveries to avoid school peak periods and network peak periods; • Consider options for minimising heavy vehicle deliveries approaching from the south to reduce risks of turning conflicts at Wellington Street/Great South Road and with truck stop. 	

Adverse effect to address	Condition topic/suggestion	
Once Operational		
Deliveries	Manage deliveries in accordance with delivery management plan	
Pedestrian monitoring	<p>No earlier than 2 months and no later than 4 months following opening of the supermarket for retail activities, the consent holder shall arrange for a pedestrian survey for the site frontage and present the results to WDC. The survey shall include 7 continuous days' (supermarket operating hours) monitoring and report on the number and locations of pedestrians crossing Great South Road at the site frontage and at the Wellington Street intersection.</p> <p>Advisory note: The purpose of the survey is to enable Waikato District Council to determine the appropriate type and location of the pedestrian crossing, complete consultation and programme the construction of the facility. It is expected that Waikato District Council will facilitate implementation of the pedestrian crossing within 3 years of the supermarket opening.</p>	

Table 5: Suggestions for conditions to manage adverse effects topics

10. Conclusion

Subject to conditions including detailed design of the intersection, the proposal is unlikely to lead to unacceptable adverse safety and efficiency effects. This takes into account WDC's intention to address pedestrian safety once the supermarket is in operation.

From a transportation perspective the supermarket proposal is appropriately located within an area of urban growth and includes forming Wellington Street as a T intersection which is consistent with the consented proposal. The efficiency effects of the proposed supermarket are likely to remain within expected conditions for surrounding transport network and the projected traffic that the Beca report expects to trigger intersection upgrades and timing.

Consent conditions requiring detailed design of the new intersection will manage the potential safety effects on road users including the truck stop of the new intersection.

Compared to the consented activity and the existing situation, the adverse effects are likely to be localised to Wellington Street, and Great South Road at the site frontage and approach to the right turn into Wellington Street.

Should WDC approve the application, it should be subject to conditions as set out in Table 5.

Please contact us if you have any questions.

Yours sincerely



Naomi McMinn
Civil/Transportation Engineer



Alasdair Gray
Civil/Transportation Engineer

Attachment 1: Waikato DC memo dated 11 June 2019 regarding Council's Long Term Plan expectations for Pokeno transport infrastructure including intersection upgrades and pedestrian crossing options

MEMORANDUM

To	Jason Wright
From	Ross Bayer
Subject	Pokeno Supermarket
File	roading/roadingplanning/memos
Date	11/06/2019

Summary of recent discussions and roading actions that relate to above project;

Pedestrian Issues

The developer's advisers have presented a report showing no effect on pedestrian numbers from the development.

Gray Matter consider that the development will increase risk to pedestrians on Great South Rd at Pokeno and this requires mitigation

Both advisers agree that the current pedestrian risk is unacceptable.

Construction of pedestrian facilities is best done by council as the community can be against these facilities due to the loss of parking, and council is best placed to navigate through the issues with the Community Board and shop owners affected by a crossing installation

The configuration of the town centre and vehicle movements is subject to a review of the Pokeno village and at this time we do not have a confirmed configuration for the changes if any that will be made in the near term

The preferred option is for council to undertake a pedestrian survey post construction of the supermarket and if the situation warrants construct a pedestrian facility to mitigate the risk. The extent to which the development contributes to this risk can then be quantified with certainty.

Contribution to the cost of the facility by the developer will depend on the level of Development Contributions paid by the developer for District Wide Roding. On the vehicle movement basis the contribution will easily cover the cost of the crossing facility and mitigation for other potential effects.

General Roding Issues

Attached is a list of infrastructure upgrades across the Pokeno Village out to 2023. This shows that other traffic effects will be mitigated by currently planned work

Pokeno								
Project:	DFH code	updated Value Jun/18	update Timing	%Dc	%Other	Estimated Capital Cost	June	July
Bridge Road	BRR-1	450,000	complete	76	24	533,000		
Helenslee/Munro intersection upgrade	INT-3	216,525	2019	76	24	216,525		
Intersection upgrade Dean Road off ramp	INT-2	103,000	2021	81	19	100,000		
Intersection upgrade Munro/ Pokeno	INT-4	153,900	2019	76	24	153,900		
Close Ford /Great South road intersection + cul-de-sac	INT-8	112,450	2023	76	24	112,450		
Intersection upgrade Pokeno/Great South Road	INT-7	400,000	2021	76	24	400,000		
Razorback off ramp intersection upgrade	INT-1	50,000	2023	76	24	50,000		
Helenslee/ Pokeno Signals	INT-5A	200,000	2020	76	24	200,000		
Land Helenslee/Pokeno	INT-5A	11,400	2020					
Dean Road/ Great South Road intersection upgrade	INT-13	200,000	2023	76	24	200,000		
Pokeno Bridge	BRR-2,-2A,-3	4,620,000	complete	76	24	3,525,000		
Munro Road Pokeno Structure Plan	MUN-1,-2	930,000	2019	76	24	830,000		
Pokeno Road Pokeno Structure Plan	POK-1,-1A,-2,-2A,-3,-3A,-4,-4A,-5-5A	1,644,870	2021	62	38	1,596,870		
Great South Road Pokeno Structure Plan	GSR-1,-2	750,000	2021	94	6	750,000		
Great South Road Pokeno Structure Plan	0			88	12	0		
Great South Road - Pokeno Structure Plan	0			90	10	0		
Helenslee Collector I - Pokeno Structure Plan	HC1-1,-1A,-2,-2A,-3,-3A	3,087,498	complete	96	7	2,969,672		
Helenslee Road - Pokeno Structure Plan	HEL-1,-1A,-2,-2A,-3,-3A,-4,-4A,-5,-5A,-6,-7,-8,-9,-9A,-10,-11	3,304,342	2020	88	12	3,145,485		
Hitchen Road 2 (upgrade) - Pokeno Structure Plan	HT2-1,-1A,-2	1,370,000	2020	95	5	945,000		
Industrial Road - Pokeno Structure Plan	IND-1,-2,INT-14,-14A	1,033,166	complete	95	5	1,108,497		
Intersections	INT-10,-11,-12,-14,-14A,-15,-15A,-16	3,573,707	2023	76	24	3,749,214		
Bunds	BUN-1,-2,-3,-4	340,000	2021	76	24	340,000		
Level Crossing Road - Pokeno Structure Plan	LCR-1,-2,-3,-3A,-3B	2,718,150	2020	95	5	2,663,499		
Train Station Property (purchase of land)	MISC-1	600,000	complete	76	24	600,000		
Intersection upgrade Helenslee and Pokeno Road	INT-5	200,000	2020					
Remove Hitchen Road bridge and Cul-de-sac	INT-9	175,000	2019					
		26,244,008					24,189,112	

Attachment 2: Gray Matter memo dated 17 June 2019 to Ross Bayer (WDC) titled "Revision: Pedestrian crossing facility selection -Central Pokeno"

To: Ross Bayer
Copy: Michelle Carmine
From: Naomi McMinn/Alasdair Gray
Date: 17 June 2019
Job Number: 17_129



SUBJECT: Revision: Pedestrian crossing facility selection -Central Pokeno

1. PURPOSE

This memo was originally dated 27/5/19, however it overstated the need for a pedestrian crossing facility due to an error in my calculations of predicted crashes. This memo follows liaison with the Applicant's traffic engineer when the error was highlighted. This memo summarises the existing and proposed situation for an area of changing pedestrian crossing and traffic demand. It updates the assessment and explains our preference for a crossing facility. Our conclusion remains that improved safety for pedestrians crossing Great South Road is desirable within a reasonable timeframe. However, the implementation is likely to end up with Waikato DC since the nett adverse effect of the supermarket is not sufficient to require the refuge as mitigation or delay supermarket operation.

2. EXISTING SITUATION – NO PEDESTRIAN CROSSING FACILITY

Currently there is no crossing facility for pedestrians on Great South Road in central Pokeno. The shops are located on the southwestern side of Great South Road mostly clustered in the block opposite a supermarket site north of Wellington Street (unformed road). To the north there is a service station on the same side as the supermarket. To the south there is a truck stop on the same side as the shops. There is a footpath along the frontage on the southwestern side (opposite supermarket) extending beyond the shops in both directions.

There is parallel parking on the same side as the shops. On the opposite side of Great South Road, there are around 15 informal angle spaces along the proposed supermarket site frontage.

The problem is that there is no safe crossing facility for pedestrians. There is existing crossing demand because vehicles park in the angle spaces and cross to access the shops. There are no existing shops on the same side as the angle parking so everyone who parks there crosses Great South Road to the shops.

The daily traffic volume is 4,380 vpd on Great South Road. I have estimated the existing daily pedestrian crossing demand is 330 ped/day¹. This is based on:

13 angle spaces, 2 vehicles parked per hour per space and 1 pedestrian per vehicle (around 50 pedestrians/hr)

3. PROPOSED SITUATION - SUPERMARKET

A supermarket is proposed north of the Great South road/Wellington Street intersection (unformed). The supermarket will remove these angle parking spaces and will provide new on-street spaces on Wellington Street as shown in Figure 1 and 146 spaces within the supermarket property. The supermarket will add around 1450 vpd (212 vph) to Great South Road. Since the supermarket car park is available we expect that the existing demand for pedestrians crossing will remain and is likely

¹ Applies factor of 6.6 to the average hourly rate in accordance with the LTNZ Pedestrian Selection Guide Tool.

to increase if supermarket users visit shops opposite as part of the same trip. There would still be people travelling southbound on Great South Road, parking (possibly on Wellington Street or within the supermarket car park) and crossing the road to access the shops. There will also be shared trips, such as stopping at the supermarket and also crossing to visit the specialty Pokeno Bacon shop or café etc. And vice versa, those who park on the western side to visit the café and then popping across to the supermarket.

We have assumed the demand would increase by around half (515 pedestrians crossing per day).

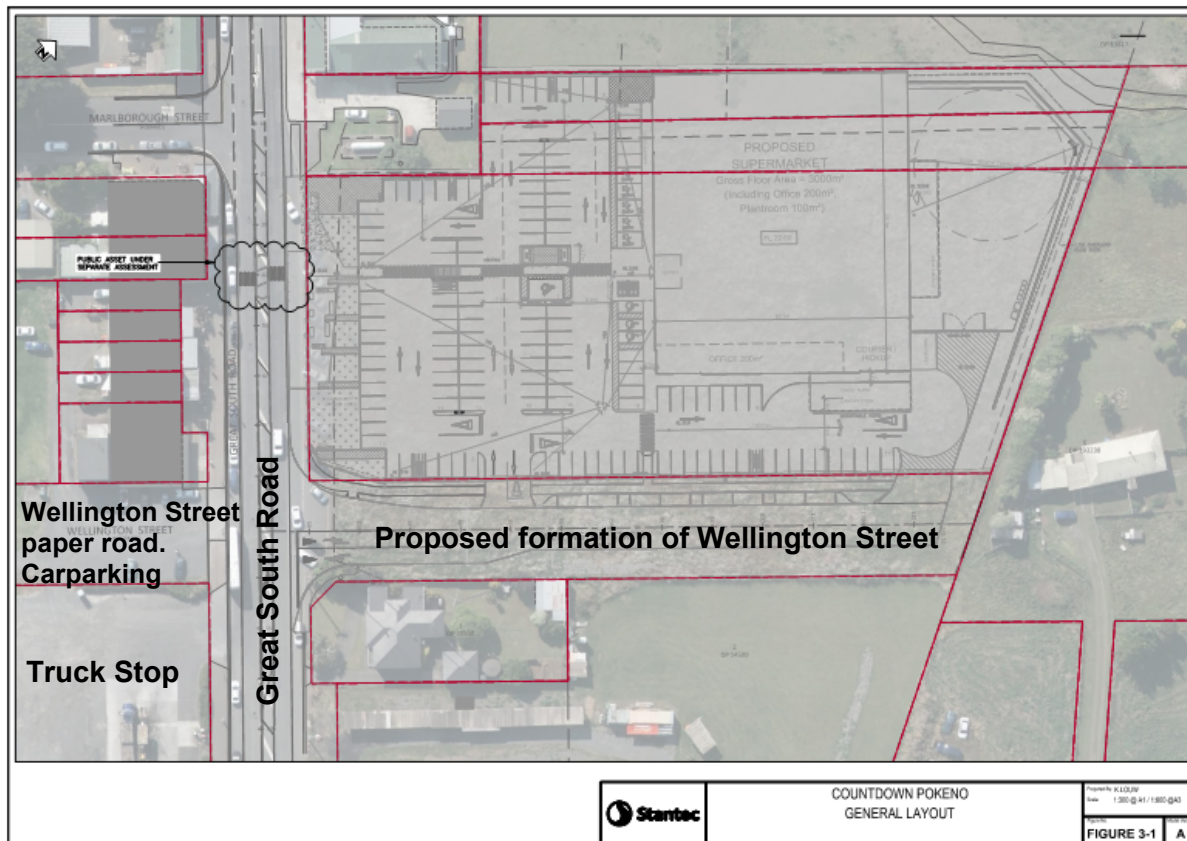


Figure 1: Proposed Supermarket (snipped from the TAR-Figure 3-1).

4. CRASH HISTORY

There is no evidence of pedestrian crashes in the last 10 years. This may be the result of pedestrians being deterred by higher speeds or lower crossing demand, and the flush median being used as an unprotected break.

5. APPLICANT'S ASSESSMENT

The applicant has recently provided their assessment of pedestrian crossing demand and need for a pedestrian crossing facility. The applicant's assessment refers to the NZTA Pedestrian Planning and Design Guide Figure 6.1 to assess the Level of Service (LoS) for different types of pedestrian crossing infrastructure. The Figure 6.1 displays the mean queuing delay to pedestrians based on different type of physical aids (no aid, kerb extension, median refuge and combination kerb extension with median refuge). Pedestrian volumes are not an input.

The applicant's assessment states that for the existing arrangement (no crossing facility and 450 vph) the diagram indicates a LOS C. For the future traffic volume (double in 10 years) the applicant

considers the existing arrangement with no physical aid would not remain satisfactory, irrespective of the supermarket.

The applicant's assessment of the existing crossing demand is 20 pedestrians/hour. They consider that with the supermarket the pedestrian crossing demand would be similar to the existing, between 20 and 40 pedestrians per hour.

The applicant's assessment concludes that irrespective of the supermarket, intervention is warranted within the next 10 years. Their assessment includes a concept layout of a pedestrian crossing (median refuge with kerb build outs on the western side) along the supermarket frontage.

6. OPTIONS FOR A PEDESTRIAN CROSSING FACILITY

6.1.1. Type of Treatment

The Austroads Pedestrian Facility Selection tool considers the environmental and traffic conditions and suggests suitable options. The tool also provides indicative levels of service for perceived safety, delay and an overall pedestrian LOS.

I have presented the options below based on assessed pedestrian demand (in parts 2 and 3 above). These apply to both the existing situation and with the supermarket.

Option	Cost	Perceived pedestrian delay LOS	Perceived pedestrian safety LOS	Overall Pedestrian LoS ²	Austroads Site Suitability ³	Comment
No facility	nil	C (LOSB for the existing without supermarket)	C	C (for both situations with and without supermarket)	N/A	The overall LOS is a combination of the perceived safety and perceived delay. Without the supermarket the perceived pedestrian delay LOS is B, but the overall pedestrian LOS is C for both situations.

² Considers delay and perceived safety LoS

³ Site suitability based on Austroads Pedestrian Facility Selection Tool and does not take site specific constraints into account.

Option	Cost	Perceived pedestrian delay LOS	Perceived pedestrian safety LOS	Overall Pedestrian LoS ²	Austrroads Site Suitability ³	Comment
Platforms	Low	See comment	See comment	See comment	No	On their own platforms are not selected because of the crossing width. However, in combination with kerb extensions to reduce the crossing distance or other traffic calming measures, platforms may be an option and can be an effective means of managing speeds. Under their minor safety programme, Hamilton City Council are installing raised platforms. We also understand HCC are upgrading all zebra crossings to signalised platform crossings. All new crossings in HCC are raised platforms to also manage vehicle speeds.
Kerb extensions	Low	See comment	See comment	See comment	No	On their own kerb extensions are not selected because of the crossing width and flush median.
Median Refuge	Low-Medium	B	B	B	Yes	Good option but still a long crossing width and would remove some on-street parking spaces to protect pedestrian visibility at the kerb cut down.
Median Refuge with buildouts/ kerb extensions	Low-Medium	B	B	B	Yes	Better option than median refuge on its own as the crossing widths are reduced. The kerb extensions prevent vehicles parking and therefore protect pedestrian visibility.
Zebra crossing	Low	See comment	See comment	See comment	No	Not suitable for long crossing distance

Option	Cost	Perceived pedestrian delay LOS	Perceived pedestrian safety LOS	Overall Pedestrian LoS ²	Austrads Site Suitability ³	Comment
Zebra crossing with kerb build outs and median refuge	Low-Medium	See comment	See comment	See comment	No	Zebra crossings are not usually preferred. In NZ the assessed safety benefit is negative (ie. Worse for safety). HCC are upgrading existing zebra crossings to signalised crossings and all crossings are raised platforms (including signalised crossings).
Signalised pedestrian crossing	High	B	B	B	Yes	High installation costs. Safety benefits but low BCR due to relatively low pedestrians, high costs and delays. Unlikely to be feasible in the immediate term.
Signalised pedestrian crossing with build outs/kerb extensions	High	B	B	B	Yes	High installation costs. Safety benefits but low BCR due to relatively low pedestrians, high costs and delays. Unlikely to be feasible in the immediate term. Unlikely to be feasible in the immediate term.
Grade separation	Very High	See comment	See comment	See comment	Maybe	High implementation cost. Unlikely to be feasible.

Table 1: Austrads assessment of crossing treatments

The median refuge with kerb build outs provides the highest BCR (of around 1- 2). The tool does not consider platforms combined with other facilities such as kerb extensions. However, we expect that this option would result in a reasonable BCR and would provide additional benefits in the form of managing traffic speeds. Raised Safety Platforms (RSP) are increasingly being used.

Given the existing width of Great South Road and the provision of on-street parking, the installation of an appropriate facility is expected to impact on-street parking (remove spaces).

6.2. Location of Facility

Given the current cluster of retail activity and the proposed supermarket opposite, the obvious existing desire line for pedestrians is going to be in the block between Wellington and Marlborough Streets. The exception to this may be on weekends when the Pokeno markets are open (located on the northeastern side of Great South Road south of Wellington Street). We consider that an appropriate location for a pedestrian facility is close to the pedestrian desire line between Wellington Street and mid block at the supermarket frontage⁴. This location is likely to facilitate

⁴ NZTA Bridging the Gap – crossings should be on or close to desire lines for maximum utility.

access for the majority of pedestrians and is consistent with the applicant's concept layout for the pedestrian crossing location.

However, a crossing facility located within around 50-80m⁵ of the desire line is likely to capture most of the pedestrian demand, particularly less able pedestrians. Mobility impaired or less able-bodied pedestrians may deviate further for a safer pedestrian crossing, so long as the path connecting is suitable and continuous. Currently there is a limited length of footpath on the northeastern side of Great South Road.

Large vehicles accessing the supermarket (new Wellington Street intersection) are likely to track over some of the flush median and the location of the median refuge should consider the swept paths.

6.3. Timing

As far as we understand, there is no financial commitment within Council's 10 year plan for a pedestrian crossing facility.

We understand that Council's preferred approach (Memo- Ross Bayer 11/6/19) is to complete a pedestrian survey post construction of the supermarket to consider if the situation warrants a pedestrian facility. Our recalculation of predicted pedestrians crashes shows an expected rate of around 0.019 injury crashes/year, rising to around 0.026 injury crashes/year when the supermarket is operational. Our initial position was that a pedestrian facility within three years was acceptable. WDC confirming risk and making a decision on actual results is, in our view, equivalent, but leaves WDC responsible for the intervention.

⁵ Supermarket frontage is around 60m. 50m -80m based on provision of a facility 20-30m beyond the side road intersections (Wellington Street and Marlborough Street)

7. DISCUSSION

Our memo dated 27/5/19 presented an assessment of crash risk to pedestrians based on the NZTA Crash Estimate Compendium that concluded the risk must be addressed.⁶

However, we have recently discussed our assessment with the Applicant's traffic engineer and they have identified an error in our calculation of the predicted crash rate. We have revised our calculations in accordance with Model 6⁷. There is no pedestrian crossing facility on Great South Road and the predicted crash risk for both the existing situation and the proposed with the supermarket is in the order of 0.02 injury crashes per year. The relative increase in risk from the supermarket is around 35%, however given the existing low risk, the increased crash risk introduced by the supermarket is not to a level that triggers specific mitigation. Even so, in accordance with the NZTA Road Safety Audit Procedures for Projects -Guidelines, the probability of a crash occurring would be considered "Infrequent". The severity is "Likely" or "Very Likely". At a collision speed of 50 km/hr, a pedestrian crash has an 80% chance of resulting in a fatality (Figure 3.2⁸). The concern assessment rating (in accordance with Table 8.1) is expected to be considered "Moderate". Moderate concerns should be addressed to improve safety (refer Table 8.2⁹). Our previous assessment used a much higher probability resulting in a concern rating that "must" be addressed. That calculation of probability was wrong.

The applicant's assessment referred to the Pedestrian Planning and Design Guide (Figure 6.1 – mean queuing delay to pedestrians). We have presented the figure below illustrating that the existing situation with no physical aid provides a mean delay of around 12 seconds to pedestrians (Level of Service C). In ten years the traffic is expected to double and this scenario is shown as the red line on the figure below. Intervention would be required before this.

The applicant did not present the scenario with the supermarket (depicted with the dashed orange line and triangle on the figure below). We note that it increases the level of service to the cusp between LOS D/E. LOS C and LOS D are noted as appropriate for major and minor arterial roads.

Figure 6.1 bases the LOS on the traffic volume and does not consider site specific factors or pedestrian volumes.

⁶ Serious concern rating (Table 8.1 and 8.2) NZTA Road Safety Audit Procedures for Projects – Guidelines (interim release May 2013)

⁷ NZTA Crash Estimation Compendium (New Zealand Crash Risk Factors Guideline) Model 6, Urban Mid-block Pedestrian Crashes

⁸ NZTA Road Safety Audit Procedures for Projects – Guidelines (interim release May 2013)

⁹

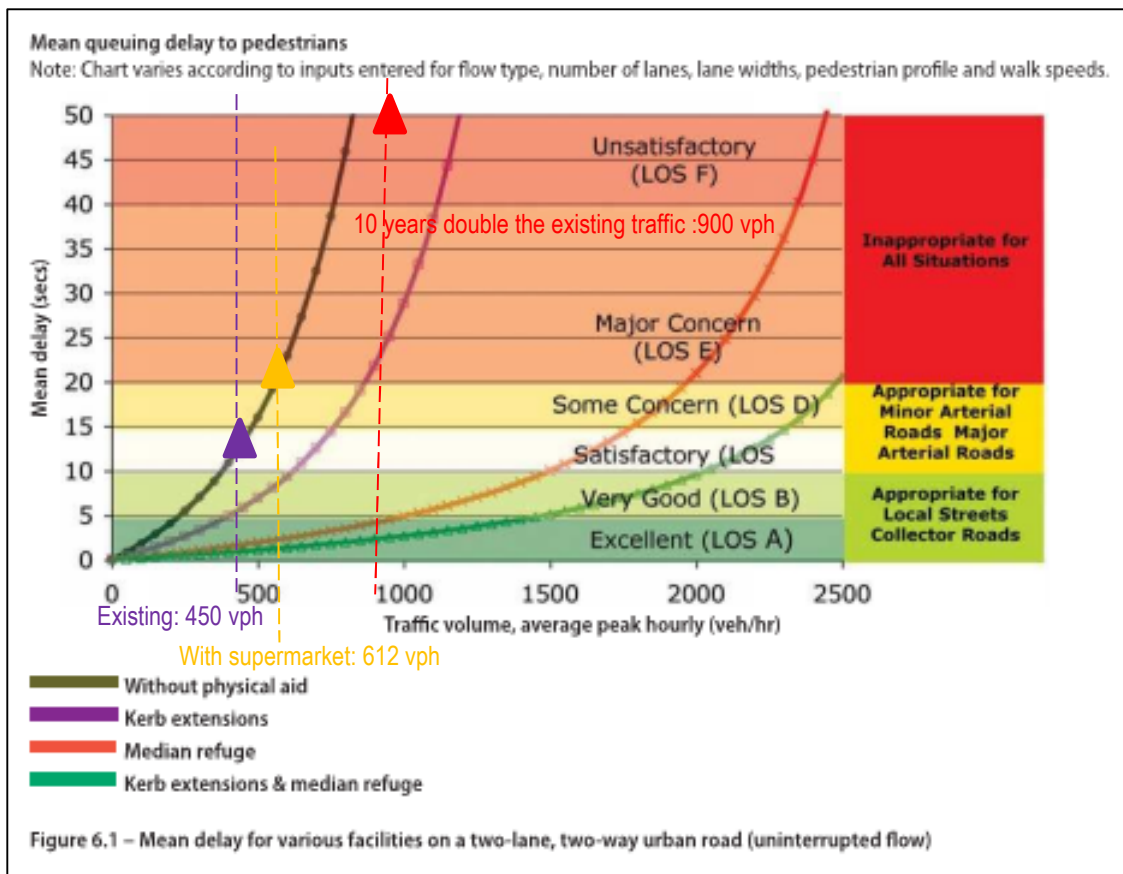


Figure 2: Pedestrian Planning and Design Guide Figure 6.1 (the purple dashed line and triangle indicates the existing situation, orange dashed line and triangle is with the supermarket and the red dashed line and triangle is in 10 years)

We have completed sensitivity testing using the Austroads Pedestrian Selection Tool which considers both perceived safety and perceived pedestrian delay and provides an overall pedestrian LOS (perception that the crossing is walking friendly). The tool requires site specific inputs of physical, environmental and operational variables, including:

- Peak hourly and daily pedestrian volumes (including sensitive pedestrians (elderly/mobility impaired))
- Peak hourly and daily traffic volumes
- Carriageway cross section (crossing widths, whether there is a flush median used as break in the crossing, parking in the shoulder etc)
- Pedestrian visibility
- Approach speed
- Posted speed limit

We have considered the applicant's assessment of pedestrian demand (20-40 pedestrians/hour) as well as our more conservative estimate (50-75 pedestrians per hour). The flush median appears to be being used as a break in the crossing and the levels of service for the existing situation with no facility remain at LOS C with and without the supermarket. Sensitivity testing shows that if the flush median was not being used as a break then the LOS would be worse for the existing situation (LOS D) and with the supermarket (LOS E).

The proposed supermarket introduces additional traffic to Great South Road and potential conflicts at Wellington Street since it will be formed as a new T intersection with Great South Road. There will also be additional pedestrian demand crossing Great South Road and a pedestrian crossing facility

is desirable. However as discussed above, the incremental increase in safety risk to pedestrians from the introduction of the supermarket is not at a level that triggers specific mitigation and the pedestrian selection tool indicates that the existing situation with no physical aid will continue to operate at a satisfactory level of service (LOS C).

Given there is no existing pedestrian crossing facility and there is significant future growth expected for the town centre of Pokeno, it is desirable that Council facilitates safe crossing for pedestrians. A median refuge with kerb build outs (such as the concept provided by the applicant) is likely to provide a reasonable BCR (1-2). Alternatively, or in combination with a pedestrian crossing facility, reducing speeds through Pokeno town centre would also provide a safety benefit. At 50 km/hr, the risk of death from a pedestrian crash is 80%¹⁰ and reduces to at 40 km/hr reduces to around 50%.

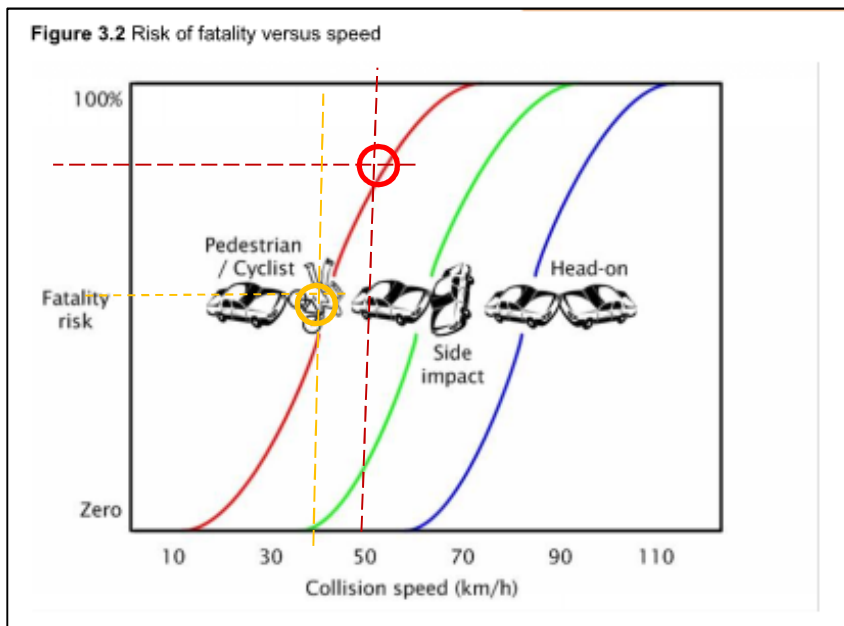


Figure 3: Figure 3.2 risk of a pedestrian fatality at collision speeds (NZTA Road Safety Audit Procedures for Projects)¹¹

¹⁰ NZTA Road safety audit procedures for projects – guidelines (interim release May 2013), Figure 3.2

¹¹ NZTA Road safety audit procedures for projects – guidelines (interim release May 2013), Figure 3.2

8. CONCLUSION

There is currently no pedestrian crossing facility on Great South Road in Pokeno Town Centre. It is desirable to facilitate safe pedestrian crossing and as the town centre develops the demand for crossing will increase. The lack of a facility should be addressed and we recommend the installation of a facility (median refuge and build outs) on the desire line (in accordance with the Stantec Concept layout) to reduce the crossing distances for pedestrians and reduce the potential for exposure to vehicles.

The proposed supermarket will increase demand and the risk of a pedestrian crash, however there is no history of a pedestrian crash within the last 10 years and the existing risk is low. The incremental increase in risk from the supermarket is not to a level that triggers specific intervention.

However, we consider that it would be desirable for Council to commit to an intervention that facilitates safe pedestrian crossing within a reasonable timeframe (desirable 0-3 years). Given that the application has been notified with Figure 1 above included as part of the application, there is likely to be community expectation of a pedestrian facility.

This is not our complete conclusion for the planning assessment of the application.