

## **Transport Assessment**

08 March 2024

Service Request No: 517439

**Site Address:** 26 Ganges Road, 3 Dekka Street, 31-33 Nicholson Road, Khandallah

### **1) Introduction:**

The proposal is for Land use: Demolition of three existing dwellings and construction of a new carpark for the New World supermarket. The following changes are proposed.

- (1) No changes in gross floor area of the supermarket.
- (2) 64 proposed car parks in new carpark area.
- (3) Two additional proposed access and egress: Dekka Street and Nicholson Road.

The existing 38 carparks and vehicle access on Ganges Road are to remain. This report assesses the impact of using the simplified method which is given in the following sections.

### **2) Professional Background:**

My name is Haran Arampamoorthy. I hold a Bachelor of Civil Engineering, Master of Engineering from the Indian Institute Technology of Roorkee (IITR), India and PhD in Transportation Engineering from the University of Canterbury. I have been involved in Transport planning and Traffic management, road design, construction and maintenance of roads and transport systems for 36 years in various roles.

I am a Chartered Professional Engineer, International Professional Engineer and a Chartered Member of Engineers New Zealand (CMEngNZ). I am also a member of the Transportation Group Engineering New Zealand. My current role is the Team Leader of Transport Consents Engineering and Operations in the Transport and Infrastructure Business Unit at the Wellington City Council (WCC).

### **3) Transportation Assessment:**

I started working at Wellington City Council in January 2023. I have reviewed e-mails and relevant reports, which includes:

1. Traffic Assessment Report – New World, Khandallah by Mike Nixon dated on 26<sup>th</sup> April 2022.
2. Traffic Engineering Response: S92 Response – New World, Khandallah (SR 517439) by Mike Nixon on 1st September 2022
3. Updated Engineering Drawing by Calibre dated on 29<sup>th</sup> August 2022.
4. Advisor on Type Assessment on Resource Consent Application by Amit Kochar dated on 11<sup>th</sup> October 2022.
5. New World Carpark 26 Ganges Road, 3 Dekka Street, 31-33 Nicholson Road. Khandallah Assessment of Environment Effects and Statutory Analysis by Evita Key on 11<sup>th</sup> October 2023.

I have reviewed all the e-mails and relevant reports since January 2024, also reviewed the updated Engineering Drawing dated 29<sup>th</sup> August 2022. In addition, I visited the site with the Transport Planner and Traffic Engineer on 7<sup>th</sup> March 2024.

There are three roads which directly access the development site for this consent. They are Dekka Street, Ganges Road and Nicholson Road. The report analyses the available data for these roads. In addition, the New World peak business hours, which will directly impact on the traffic movements between these three roads and the New World carpark.

I won't reiterate the assessment made by Mike Nixon, and the conclusions reached by him. Rather, I will outline the transportation matters which I see as important to this proposal as follows.

### 3.1. New World Peak hours:

The data obtained from google source and cross checked by site visit.

Days	Peak period	Near peak
Monday	4:00 pm - 6:00 pm	4:00 pm - 7:00 pm
Tuesday	4:00 pm - 6:00 pm	11:00 am - 7:00 pm
Wednesday	4:00 pm - 6:00 pm	12:00 pm - 7:00 pm
Thursday	4:00 pm - 7:00 pm	11:00 am - 8:00 pm
Friday	4:00 pm - 6:00 pm	11:00 am - 7:00 pm
Saturday	4:00 pm - 6:00 pm	12:00 pm - 7:00 pm
Sunday	4:00 pm - 6:00 pm	11:00 am - 6:00 pm

Table 1: Busy period in the New World supermarket

The above table shows 4pm to 6pm peak period but there is not much considerable difference between 11:00 am and 7:00 pm. For an example, see the Figure 1a. The proposed addition of 64 carpark spaces will not be expected to change the above busy period. This may not reflect the exact vehicle coming in/out to the New World carpark. However, by looking at the traffic volume in next section indicates there is a possibility that similar pattern of vehicle in and out of carpark can be expected.

#### Popular times Tuesdays ▾

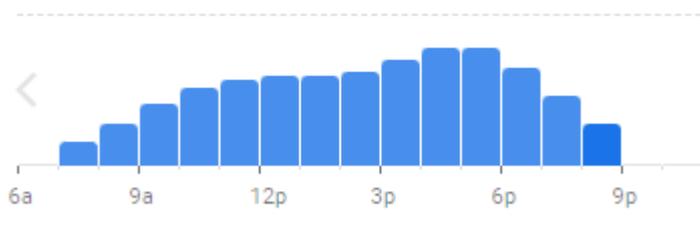


Figure 1a: Typical popular time on a Tuesday in New world supermarket.

### 3.2. Survey Traffic Data Summary from Council tube counts.

In this section the data is mainly collected from WCC RAMM database. We generally use tube counts, and the data is refined for errors. Latest traffic count for the adjacent roads is not available. However, it is expected to have a very similar pattern as no significant changes in the area has occurred since data collection, and the accuracy is enough to cross check the conclusion in this report. The conclusion is mainly focussed on traffic impact. I expect that the traffic patterns have not changed much over the last two years.

The 5-day ADT volume and 7-day ADT volume from Mike Nixon report shows 3,705 vpd (vehicles per day) and 3,520 vpd for Dekka Street, 1,585 vpd and 1494 vpd for Nicholson Road respectively.

#### 3.2.1. Dekka Street – Ganges Rd., to Nicholson Rd.

Dekka Street is a collector road, about 9.5m carriageway width and on street parking available on both sides. The speed limit between Ganges Road and Nicholson Road is 30 Km/hr and the rest is 50 Km/hr. The speed change sign is on Dekka Street just before the intersection of Dekka street and Nicholson Road. This data is collected from the RAMM database.

The WCC RAMM data was collected during the week of 18<sup>th</sup> May 2022 to 24<sup>th</sup> May 2022. The location of the data collected on Dekka Street is located between Ganges Rd and Nicholson Rd. The location is near the intersection of Nicholson Road and Dekka Street where the speed limit changes. It is two years old, but a very similar pattern is expected.

The 5-day westbound traffic volume is 2,232 ADT and Eastbound is 1,000 ADT (total in both direction 3,232 ADT) and the percentage HCV (Heavy commercial Vehicle) is 5.9%. The 7-day westbound traffic volume is 2,092 ADT and Eastbound is 949 ADT (total in both direction 3,041 ADT).

The difference between the WCC database counts and the counts noted in Traffic assessment report by Mike Nixon is about 500 ADT, which can be assumed for the changes in the year. The ADT increase is considerable but the pattern (e.g., the long peak period) is expected to be almost same.

The following plot obtained from WCC database.

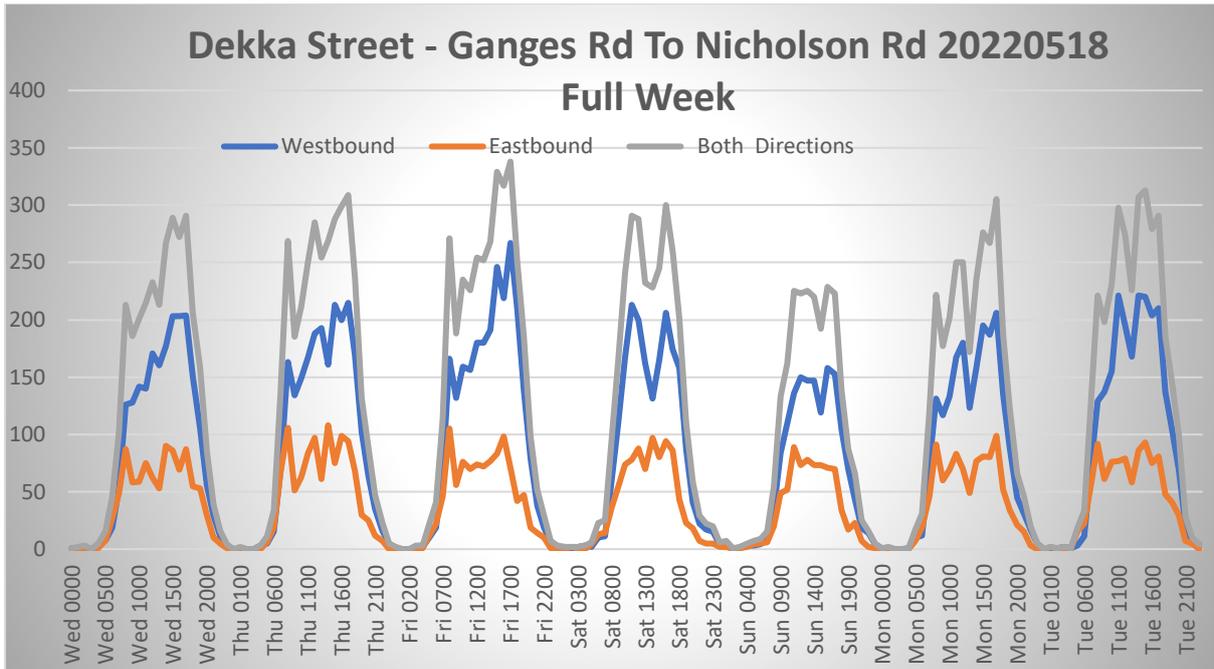


Figure 1: Dekka Street – Ganges Road to Nicholson Road (hourly traffic volume).

Please note the following from the above graph:

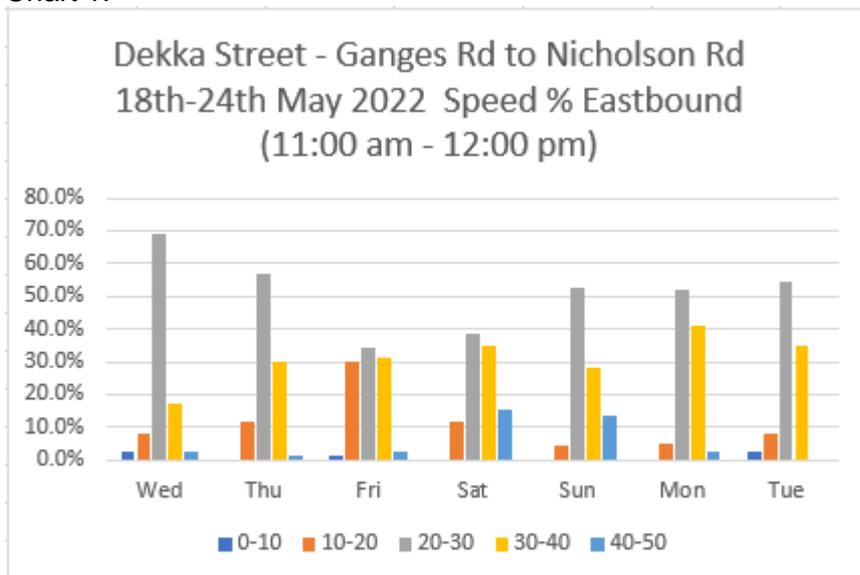
1. Westbound traffic volume is greater than Eastbound traffic volume (i.e., nearly three times). Primary direction is Westbound towards Nicholson Road.
2. The peak appears almost flat between 8:00 am to 5:00 pm.
3. This traffic volume pattern is very similar to the busy period in the New World supermarket.

The peak traffic volume is about 350 vehicle per hour on Dekka Street and that is on average.

Speed data:

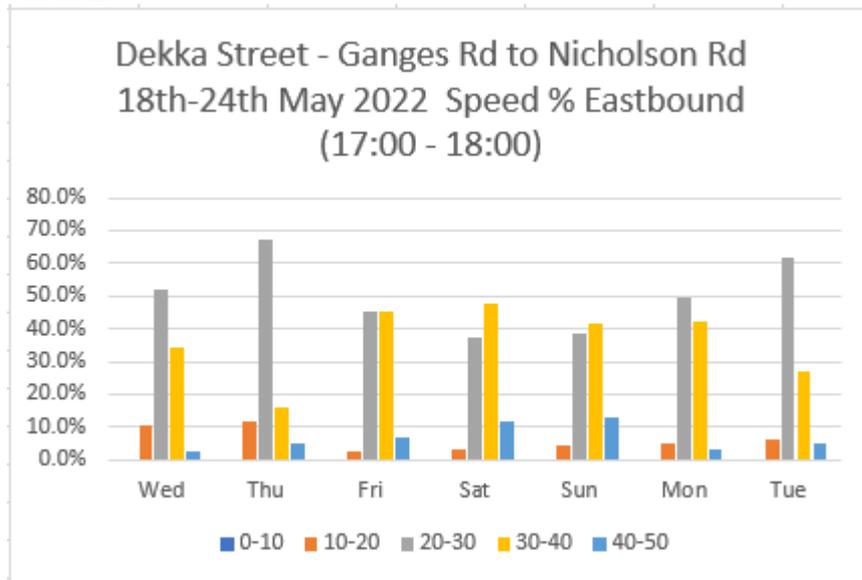
A few examples of speed data shown below.

Chart 1:



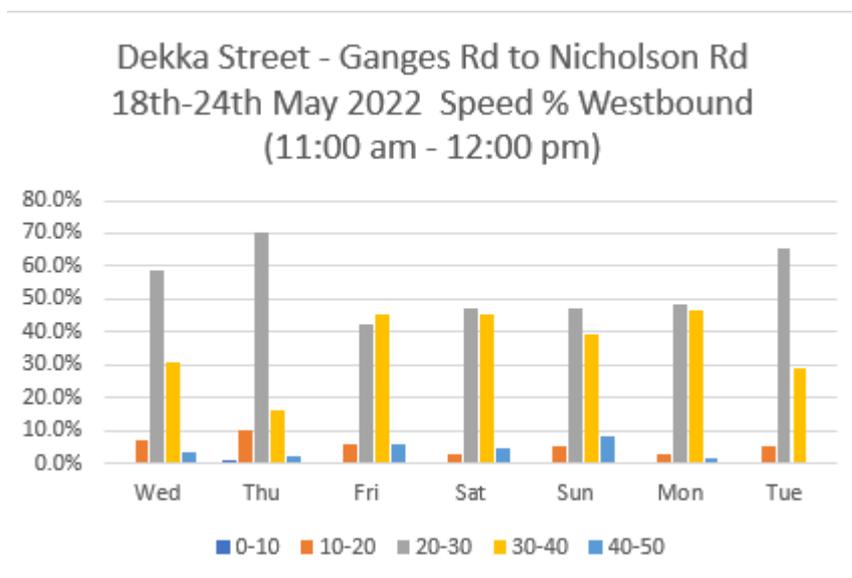
The above plot shows more than 50% of the vehicle speed for vehicles eastbound between 11:00am and 12:00pm is less than 30km/h throughout the week.

Chart 2:



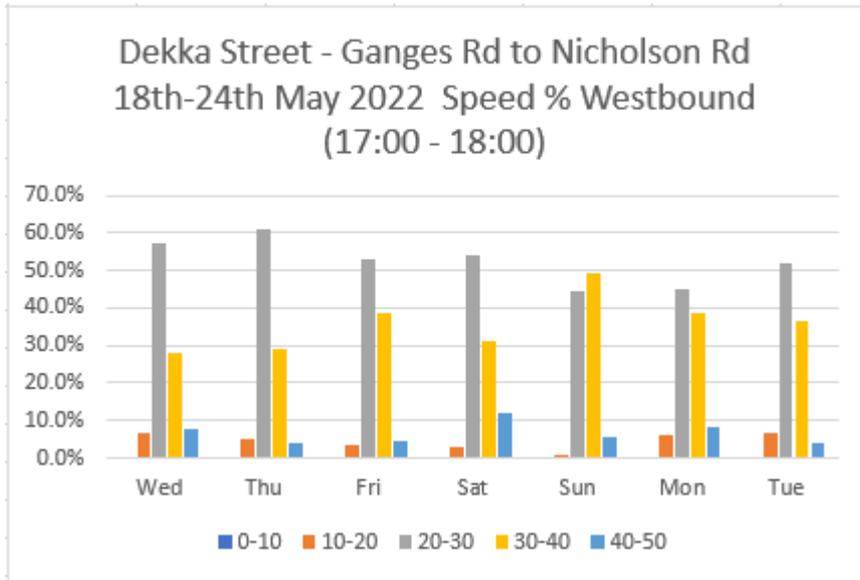
The above plot also shows more than 50% of the vehicle speed for eastbound vehicles between 17:00pm and 18:00pm is less than 30km/h throughout the week.

Chart 3:



The above plot also shows more than 50% of the vehicle speed for Westbound vehicles between 11:00am and 12:00pm is less than 30km/h throughout the week.

Chart 4:



All the above four charts show vehicles in both directions are operating with the speed considerably less than the speed limit more frequently. This is confirmed by the following two sources: Google typical traffic diagram and the site visits in March 2024. Note the count location is in near proximity to the speed limit changes from 30 km/hr to 50 km/hr. This explains why there are few vehicles still driving 40-50 km/hr at that location, but the vehicle speeds cannot be greater than 30km/hr at Dekka Street near the bus stop.

### 3.2.2. Ganges Road – Dekka St to Everest Street

The Ganges Road is local Road, about 11m carriageway width and on street parking available on both sides. The speed limit near the New World supermarket is 30 Km/hr. The tube counting location was near the entrance of the New World supermarket. The data is collected from RAMM database.

The traffic survey data is collected during 20th November 2021 to 26th November 2021. The 5-day northbound traffic volume is 1,423 ADT and Southbound is 1,915 ADT (total in both direction 3,338 ADT) and the percentage HCV is 5.1%. The 7-day Northbound traffic volume is 1,363 ADT and Southbound is 1,827 ADT (total in both direction 3,190 ADT).

The following plot shows the full week traffic volume in Ganges Road.

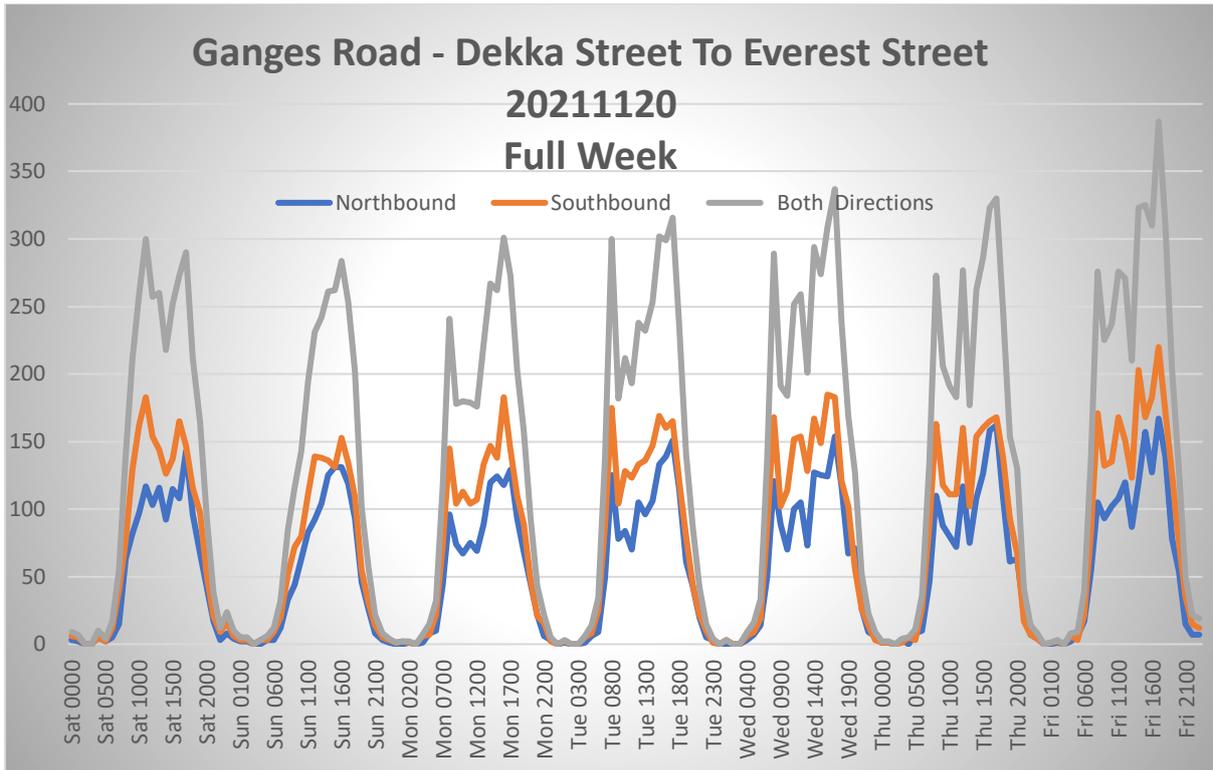


Figure 3.2.1: Ganges Road – Dekka Street to Everest Street (hourly traffic volume).

The following points can be obtained from the above plot. They are:

1. Northbound traffic volume is almost similar amount of Southbound traffic volume.
2. The peak appears almost flat between 8:00 am to 7:00 pm.
3. This traffic volume pattern is very similar to the busy period in the New World supermarket.

The total traffic in both direction of our consent section in Ganges Road and Dekka street is same.

Speed data:

A few examples of speed data shown below.

Chart 5:

Ganges Road Between Dekka Street to Everest Street 20th-26th November 2021  
Speed % Northbond (11:00 am - 12:00 pm)

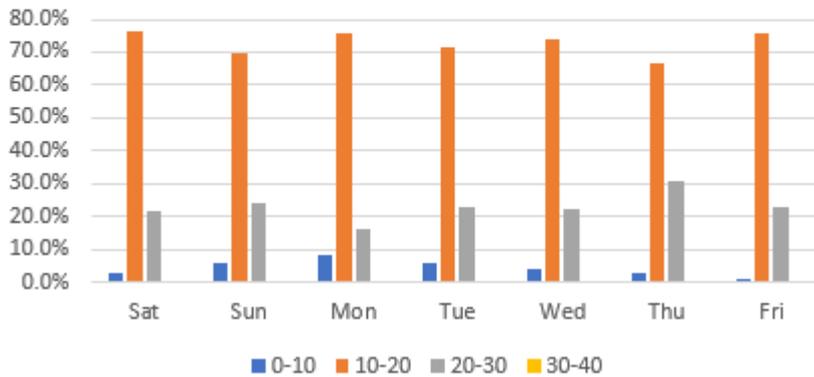
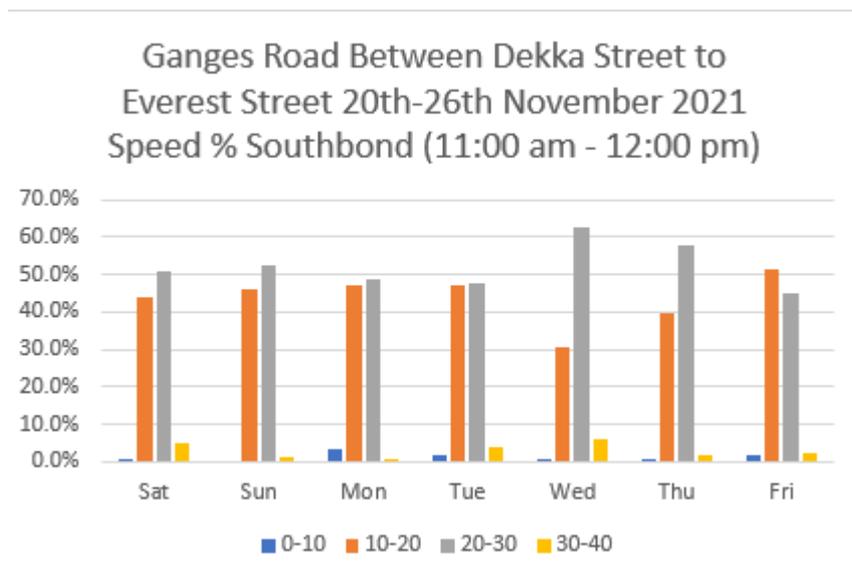


Chart6:



The above two examples of the speed distribution outside the peak also shows about 50% of vehicles speeds are less than 20km/hr.

The Chart 1 to 6 shows vehicles in Northbound directions are operating with the speed considerably less than the speed limit. This is confirmed by the following two sources: Google typical traffic diagram and the site visits in March 2024.

### 3.2.3. Nicholson Road between Dekka Street and Everest Street

Nicholson Road is a Collector Road, about 7m carriageway width and on street parking available on both sides. The speed limit between Dekka Street and Everest Street is 50 Km/hr. This data is collected from the RAMM database.

The available Council data is dated 2012, and not useful for this analysis. However, in Mike Nixon report noted the following.

5-day ADT volume is 1,585 vpd  
7-day ADT volume is 1,494 vpd  
Weekday morning peak is 234 vph  
Weekday midday peak is 124 vph  
Weekday evening peak is 141 vph

These numbers show that the traffic volume in Nicholson Road is less than Ganges Road or Dekka Street.

### 3.3 Safety:

Last ten years crash data collected from NZTA crash database (see the collision diagram in Figure 3.3.1).

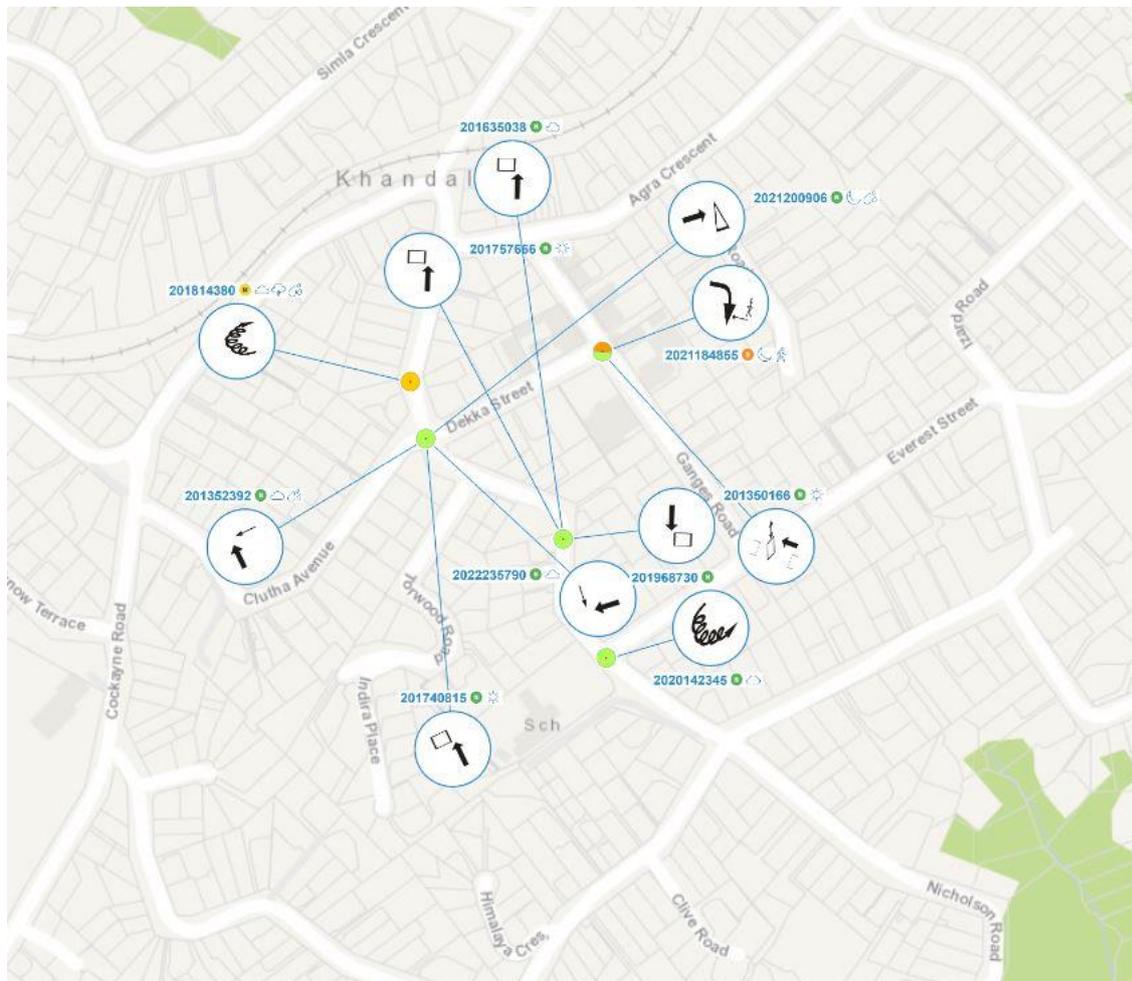


Figure 3.3.1: Collision diagram from last ten years crashes.

The following points are concluded from the above collision diagram.

1. Nicholson Road: five midblock crashes noted.
  - a. The concern section shows two loss of control, and three involving parked vehicle crashes which indicates speed is a concern along this section.
  - b. Three parked vehicles also indicate that approach speed is not appropriate for the environment.

Out of five crashes four crashes are non-injury crashes and one of the loss control crashes is minor injury for the 300m long section for the last ten years. No Safety work is necessary with the current situation. This situation will change if a proposed driveway with higher traffic volume than present driveway.

2. A serious pedestrian related crash across Dekka Street at the zebra crossing in 2021 showed driver error as the contributing factor. This is not related to the entrance of the supermarket.

By considering the ten-year data for all these concern sections of roads are operating safe except the 300m section noted above with the proposed driveway.

This 300m section of Nicholson Road increases the risk further when introducing a proposed driveway intersection in this section. There are pedestrians, which includes school children walking along the section of Nicholson Road and the proposed driveway expected to increase number of turning vehicle at this location. In addition, all the arms of this proposed intersection are in slope and a curve (the Northern approach to the corner with the proposed entrance is on a downhill approach around a blind bend). By considering all the above we must have a risk mitigation measure. That is a raised safety platform at the intersection of Nicholson Road and the proposed driveway to New World is as a suggested condition. This raised safety platform includes clear marking of pedestrian crossing. This suggested raised platform with pedestrian crossing reduce the safety risk from the following:

- The expected vehicle approach speed in all the arm will be reduced.
- Plenty of sight line available for the reduced speed
- The safety of pedestrian will be increased.

### 3.4 Cycle parking:

WCC promotes cycle usage, which has several benefits including greenhouse gas emission reduction, health and congestion issue etc. The New World carpark plan does not show increased number of cycle parking facility. The current number of cycle parking facility should be increased. The site visits show the current cycle parking is at capacity more frequently. We encourage the applicant to provide more cycle parking for their customers.

### 3.5 Earthworks:

The applicant advises that the maximum volume of earthworks to be removed from site will be approximately 2,450 m<sup>3</sup>. This exceed 200m<sup>3</sup> threshold under rule 30.2.1.1 of the district plan. There is potential impact on road network by transporting the earth work material. Therefore, a construction traffic plan (CTP) is required. Refer to suggested

condition. This was noted in the report: Advisor Type Assessment on Resource Consent Application dated 11<sup>th</sup> October 2022 (ref: SR517439).

#### 4) **Discussion**

All the above assessment shows:

##### 4.1. Traffic volume and speed:

- The traffic volumes in Ganges Road or Dekka Street are almost the same.
- The peak hour traffic count varies between 250 vph (vehicle per hour) to 350 vph during 8:00am and 18:00pm.
- Vehicles speed on Dekka Street and Ganges Road near the New World supermarket shows that most of the time operating about 20km/hr or less, which is less than the posted speed limit 30km/hr.
- The New World popular business time and the traffic volume peak or near peak are between 11:00am and 7:00am. However, the proposed new driveway in Nicholson Road will be expected to distribute the additional traffic from the proposed car park.
- Traffic flow on Nicholson Road section is less than the flow on Dekka Street or on the Ganges Road (i.e., nearly half most of the time and the speed limit is 50km/hr). This shows Nicholson Road (evening peak hour traffic 141vph) can accommodate traffic like the other two roads without experiencing congestion: Dekka Street (evening peak evening hour traffic 350vph) and in the Ganges Road (evening peak hour traffic about 350vph).
- Additional traffic generated from proposed parking is expected to be distributed to the proposed accesses on Nicholson Road and Dekka Street. The gap between vehicles will be reduced and the traffic density (number of vehicles within 100m per lane) can be increased. The impact of the generated trip by the additional parking is less than minor.

##### 4.2. Safety:

- The crashes indicates that the speed in Nicholson Road near the proposed driveway is not appropriate for that location (please see the section 3.3). School children are walking along Nicholson Road. Considering all of these the speed of the three approaches must be reduced. As it is, a raised safety platform should be considered at the intersection of Nicholson Road and the proposed driveway. The crashes shown at this location are non-injuries. However, by considering the safety of active mode of transport including pedestrian along Nicholson Road and the proposed driveway turning vehicles, a raised safety platform is suggested (ref: Austroads 2020 for more detail about raised safety platform). There is sufficient sight distance for the expected reduced speed at the Nicholson Road entrance, therefore the proposed driveway with raised safety platform will not be an issue when the raised safety platform in place.

##### 4.3. Active mode:

- The proposed New World car park plan does not provide additional cycle parking facility. We encourage the applicant to provide additional cycle parking for their customers. This will help to reduce peak hour congestion on adjacent roads by

switching users from car usage to cycle usage to and from the supermarket. This will help to reduce peak evening hour vehicular traffic generated by the development.

#### 4.4. Proposed parking area and accesses:

- There is no issue identified and it was previously assessed in the previous report: Advisor on Type Assessment on Resource Consent Application by Amit Kochar dated on 11th October 2022. The Commute Transport Consultant's "Traffic assessment report" also noted that:
  - "the number of accessible parking spaces complies with NZS4121", and
  - "all parking spaces are designed in accordance with AS/NZS2890.1 standards in terms of dimensions and maximum gradients. This satisfies District Plan standards.

#### 4.5. Transport assessment report by consultant:

Bar the following two exceptions (explained in section 2 and 3), I agree with the conclusions in the Traffic Assessment Report (i.e., New World Khandallah by Commute Transportation Consultants Mike Nixon dated on 26<sup>th</sup> April 2022):

- 1: Safety at the proposed driveway at Nicholson Road and the current arrangement
2. Bike parking.

These two are added in the suggested condition in the following section. The blind corner, the site distance (i.e., site line) and pedestrian safety, which are addressed by the raised safety platform at the proposed driveway intersection at Nicholson Road in this report. This proposed measure reduces the vehicle speed on all the three approaches to the intersection and is expected to minimise the risk by the proposed driveway.

#### 4.6. Location of the Bus stop:

- Please note, "While buses have priority under the Australian Road Rules (but not in New Zealand) to re-enter the traffic stream from the side of the road, this may be difficult in many situations" (ref: Austroads 2019). However, in our case at Dekka street bus stop entering traffic stream is not an issue to bus driver while considering the speed limit at this section is 30km/h. The operating speed at this location is far less than 30km/hr (i.e., estimated speed is between 10 and 20 km/h). There is no serious risk at this speed for vehicles at this speed.
- The current location of the bus stop is near the proposed driveway at Dekka Street near the corner of Dekka Street/Ganges Road. The commute's report highlights the concerns with the bus approximately to the driveway "Observations reveal this only occurs occasionally, and we do not anticipate a high number of right turning movements out of the site at this access".
- "Drivers are not permitted to obstruct a driveway. Specifically they may not stop, stand or park at or within 1m of a driveway", which is a Land Transport Road User Rule 2004 (refer: TCD 2007). Buses are parked greater than one meter away from the proposed driveway and it is acceptable for a driveway intersection with the estimated traffic volume. However, we will monitor the situation further to assess the proposed driveway traffic/pedestrian volume after the driveway in operation and check any needs to upgrade as a high-volume entrance as an intersection.

## 5) **Conclusion:**

The following points are noted from the above sections.

- The speed limit in Dekka Street and Ganges Road near the New World supermarket is 30 km/Hr. About 50% of vehicles are going less than 20 km/hr between 11:00am and 18:00pm.
- High number of pedestrian activities are closer to the shopping area. Pedestrian safety at the zebra crossing near the intersection of Dekka Street and Ganges Road with a posted speed limit of 20 km/hr is acceptable for the safety reason.
- The additional traffic generated from the proposed parking spaces is expected to distribute to the proposed driveway accesses in Nicholson Road and Dekka Street. The impact of the generated trip is acceptable.
- A raised safety platform will be a solution to improve the safety and smooth flow of turning traffic at the proposed intersection of Nicholson Road and the new driveway.
- Additional cycle parking is suggested, which will minimise the peak hour vehicular traffic.

By considering all the above, impact by the proposed development is acceptable and no objection by transport prospective.

## 6) **Suggested Changes to Proposal:**

The following items are suggested:

1. Provide a raised safety platform at the proposed intersection of the new driveway and Nicholson Road to mitigate the safety risk and minimise the turning traffic queue.
2. Provide additional cycle park to promote cycle users and minimise peak hour vehicular traffic and the delay.

The above two suggestions are in addition to the six suggested conditions and the advisory note provided in the report: Advisor Type Assessment on Resource Consent Application dated 11<sup>th</sup> October 2022 (ref: SR517439).

## 7) **Suggested Conditions:**

- Provide a raised safety platform at the proposed intersection of the new driveway and Nicholson Road (more detail please refer Section 3.3)
- The Construction Traffic Plan (CTP) and Traffic Management Plan (TMP) are necessary. Please refer CTP with other conditions in the report: Advisor Type Assessment on Resource Consent Application dated 11th October 2022 (ref: SR517439).

## **Appendix: Response to Submitters**

Residents have expressed concerns primarily related to traffic safety, including sightline issues at the Dekka Street entrance and Nicholson Road. While some residents have

apprehensions about potential increases in traffic volume, others emphasise the need for proper planning and management to mitigate any adverse impacts on the local community.

#### Summary of Issues Raised:

- i. Lack of provisions for bike parking, energy efficiency, and sustainability.
  - The proposal should include dedicated provisions for additional bike parking, as well as incorporate energy-efficient design principles and sustainable materials where feasible. Additionally, promoting alternative transportation modes such as cycling should be encouraged to reduce reliance on cars.
- ii. Concerns regarding access on Dekka Street, bus stops, sightlines, and safety on Nicholson Road.
  - Commute's assessment addresses concerns related to access on Dekka Street, interaction with existing bus stops, "Buses waiting within the bus stop adjacent to the proposed vehicle crossing affect visibility to the east. Observations reveal this only occurs occasionally, and we do not anticipate a high number of right turning movements out of the site at this access".
  - Buses are parked greater than one meter away from the proposed driveway and it is acceptable for a driveway intersection with the estimated traffic. However, we will monitor the situation further to assess the proposed driveway traffic/pedestrian volume after the driveway in operation and check any needs to upgrade as a high volume entrance as an intersection.
  - Commute's assessment identifies a visibility issue on Nicholson Road specifically for vehicles waiting to turn right into the proposed crossing points. They recommend vegetation removal to enhance sight lines, ensuring adequate visibility for vehicles approaching and entering the site.
- iii. Safety issues for pedestrians, cyclists, motorists, and school children.
  - Commute's assessment should prioritise safety enhancements for pedestrians, cyclists, motorists, and school children, proposing infrastructure improvements and educational initiatives.
  - The raised safety platform will mitigate the safety risk at Nicholson Road entrance. If this is not accepted by the applicant, then another option should be provided for our assessment and an independent auditing report may be required.
- iv. Submissions emphasising concerns about traffic, pedestrian safety, environmental impact, and community character.
  - Acknowledging and addressing concerns raised by residents through transparent communication, stakeholder engagement, and participatory decision-making processes are crucial. Incorporating community feedback into the planning and design phases can foster a sense of ownership and collaboration in the development process.

#### Traffic Assessment by Commute Transportation Consultants:

The traffic assessment conducted by Commute Transportation Consultants provides valuable insights into addressing the concerns raised by residents. Measures have been proposed to mitigate potential issues, such as vegetation management to improve sightlines at the Dekka

Street entrance and Nicholson Road. Additionally, the assessment highlights the importance of optimising traffic flow and ensuring pedestrian safety in the vicinity of the supermarket.

Summary:

The following points are noted from the above sections.

While we understand residents' concerns, it's important to recognise that progress often involves adjustments. The safety issues raised are minor and can be addressed through careful planning and implementing recommended measures. The expansion of the supermarket's car park is crucial to meet the growing demand in the area. Moving forward, continued collaboration, monitoring, and adaptive planning will be key to addressing any challenges and preserving Khandallah Village's integrity while accommodating necessary development. By utilising the insights from the Traffic Assessment Report and considering community feedback, we aim to pursue a balanced approach that promotes sustainable transportation practices and enhances safety while preserving the area's unique character.

**Written approval:**

This report is prepared for the Resource Consent Hearing - 26 Ganges Road, 3 Dekka Street, 31 and 33 Nicholson Road, Khandallah, and no written approval for any design or construction is given by Council.

**Prepared by:**

Haran Arampamoorthy  
Team Leader, Transport Consents  
Transport & Infrastructure  
Wellington City Council

Reference:

1. Austroads 2020: Austroads Research Report AP-R642-20., Effectiveness and Implementation of Raised Safety Platforms, Austroads Ltd.
2. Austroads 2019: Guide to Traffic Management Part 5 – Road Management., Austroads Ltd.
3. TCD 2007: Traffic Control Devices (TCD) manual, part13, Parking control, Land Transport New Zealand.
4. Land Transport (Road User) Rule 2004:  
<https://www.legislation.govt.nz/regulation/public/2004/0427/latest/whole.html>