



Warren Road Traffic Study 2019

Draft Report May 2019



Introduction

The Warren Road Traffic Study has been undertaken by Inner West Council in response to the safety and congestion issues in Warren Road, Marrickville between Illawarra Road and Carrington Road. Representations were received including a petition with signatures from Warren Road residents in early 2019. A site meeting was also held with residents and Council staff on 30 January 2019. Consequently a Notice of Motion from the Inner West Council Ordinary Council Meeting on 12 February 2019 resolved the following:

C0219(2) Item 15 Notice of Motion: Warren Road, Marrickville

Motion: (Macri/Hesse)

THAT Council:

- 1. Complete the necessary study and investigations for a proposed conversion of Warren Road, Marrickville from its current two-way traffic flow operation to one-way; and*
- 2. Recommendations be submitted to the Local Traffic Committee for consideration.*

This study will review the existing traffic conditions in Warren Road, including the surrounding road network and examine the impacts of a one way traffic flow westbound in Warren Road between Illawarra Road and Carrington Road. The report will also examine alternate options to improve traffic safety and congestion in Warren Road and surrounding areas. Considering potential future redevelopment at Carrington Road, recommendations will be put forward to the community for to gauge the level of support for the options, and following a review of submissions and results of the community survey, a final report containing Council's recommendation will be presented to the Local Traffic Committee.

The Inner West Community Strategic Plan (CSP) 'Our Inner West 2036' endorsed in June 2018 provides outcomes and strategies for the future of Inner West. By reviewing traffic safety and improving the transport network, the study addresses CSP strategic direction and outcomes: ensure transport infrastructure is safe, connected and well maintained.

Study Background

Warren Road forms part of the South Marrickville Local Area Traffic Management (LATM) precinct area 19, which was last reviewed in 2011. The LATM studies are undertaken in a precinct wide study in order to ensure that traffic changes in one street do not impact on neighbouring streets.

As illustrated in Figure 1, the adopted study area is bounded by Illawarra Road, Cooks River, T3 Bankstown and T8 South Suburban Rail Lines.

This report sets out an assessment of the traffic conditions within the Marrickville East study area and includes the following:

- Road Hierarchy
- Traffic survey data (including volumes, speeds and heavy vehicle percentages)
- Crash statistics
- Assessment of the one way proposal in Warren Road
- Future Developments
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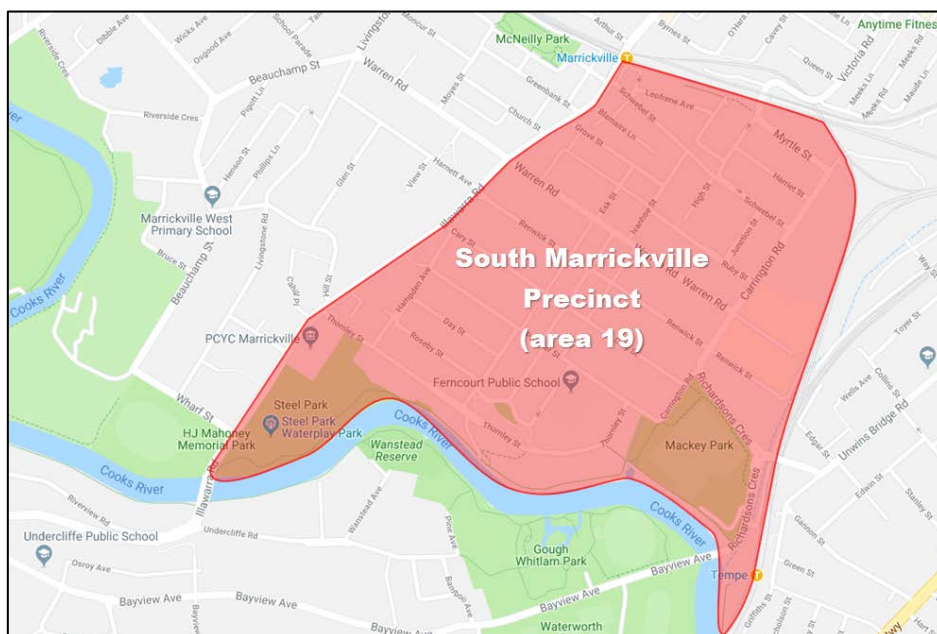


Figure 1: South Marrickville Precinct Study Area

Existing Conditions

The South Marrickville precinct study area is bounded by Illawarra Road, Carrington Road, Cooks River, the Sydenham-Bankstown railway line and South railway line. The predominant land use is low and medium density residential houses and apartments, industrial lands, shopfronts, recent mixed commercial and residential developments.

Significant developments include the Carrington Road creative industries, Woolworths Marrickville supermarket, Ferncourt Public School, McKay Park, and Marrickville railway station. The area has very good levels of access to Tempe and Marrickville railway stations. Bus stops are also positioned along Illawarra Road providing north-south connection to nearby suburbs.

Area Demographics

Census and Journey to Work datasets for 2011 and 2016 were examined to identify travel trends to and from the study area.

The 2016 Census data indicate an increasing proportion of those surveyed using public transport and walking as a main mode of travel to work since 2011. The survey also indicates there has been a slight increase in the number of people working from home. There is a higher rate of people riding a bicycle and walking to work compared to the NSW average.

South Marrickville Study Area Census and Journey to Work Datasets		
Source: 2016 Census and 2016 Journey to Work, Australian Bureau of Statistics		
	Study Areas	NSW Average
Dwelling with no car ownership	15.1%	9.2%
Proportion using public transport as a mode of travel to work	39.6%	16%
Proportion of bicycle riders as a mode of travel to work	3.2%	0.7%
Proportion of walking only as a mode of travel to work	3.4%	3.9%

Main Travel to Work by:	2011		2016		Change in %
	Number	Proportion	Number	Proportion	
Car	655	41.3%	727	39.0%	-1.3%
Public transport	484	33.1%	679	39.6%	+6.5%
Bicycle	53	3.3%	59	3.2%	-0.1%
Walk	53	3.3%	62	3.3%	0%
Working from home	60	3.3%	60	3.8%	0.5%

Table 1: South Marrickville SA1 areas Census and Journey to Work Datasets

Road Hierarchy

The RTA (Roads and Traffic Authority) Road Design Guide states that the purpose of a functional road hierarchy is to establish a logical integrated network in which roads of similar functional classifications. The road hierarchy comprises of State Roads, Regional Roads, Collector Roads and Local Roads.

There are 29 streets which were examined as part of the South Marrickville precinct. As shown in Figure 2: Road classification within the study area, the Illawarra Road and a section of Richardsons Crescent are regional roads. The remaining roads are local roads under Council control.



Figure 2: Road classification within the study area

Public Transport and Active Transport

The study area has access to two railway lines and within walking distance to Marrickville and Tempe stations. The T3 Bankstown line can be accessed from Marrickville Railway

Station, providing connections to the City CBD and to the Northern suburbs. The T4 Cronulla, Illawarra and Eastern Suburbs line can be accessed from Tempe Station south east of the study area. Both Marrickville and Tempe Railway stations can be access within a 15 minute walk.

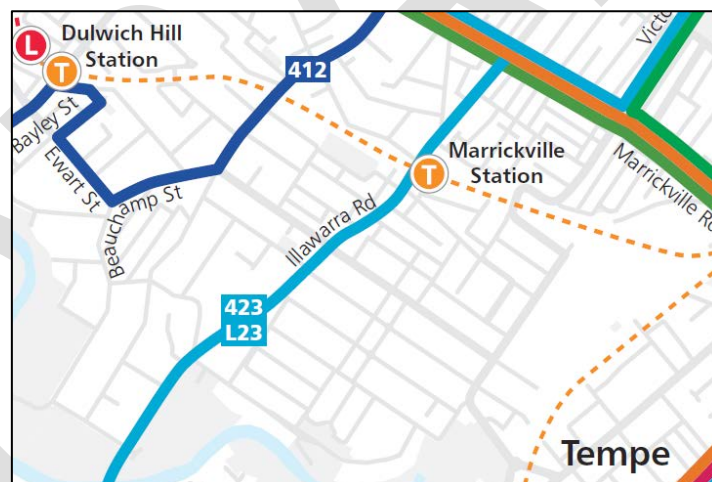
Marrickville Station has recently been upgraded as part of the Transport Access Program, a State Government initiative to provide better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure. Upgrades include a new raised concourse, platform extensions, new lifts, and taxi, kiss and ride, bicycle parking and accessible parking facilities. Both stations have some form of kiss and drop areas nearby. These stations do not have wheelchair access.

Work is currently underway for the Sydney Metro Sydenham to Bankstown line and Marrickville Station is expected to undergo upgrades to facilitate the Metro system.

There are two bus routes servicing this area through Illawarra Road, connecting the Sydney CBD and Kingsgrove. Both L23 and 423 routes connect to Marrickville Station, Enmore, Newtown, Camperdown and to the CBD.

Light Rail was introduced in the CBD in 1997 from Central Station to Wentworth Park. In 2000 the line was extended into Leichhardt North and subsequently further extended to Dulwich Hill in 2014. The nearest Light Rail station is at Dulwich Hill generally north west of the study area.

Figure 3: Public Bus and Light Rail Routes in near Morton Park Precinct (Map Source Transit Systems)



The Marrickville Bicycle Strategy was completed in 2007 and identifies Illawarra Road and Carrington Road as regional bicycle routes. There are a number of local roads such as Warren Road, Thornley Street, Excelsior Parade, and others identified as local routes.

In 2014 Council completed construction of kerbside bicycle lanes through Carrington Road, connecting existing off-road route from the Cooks River to Marrickville and Enmore.

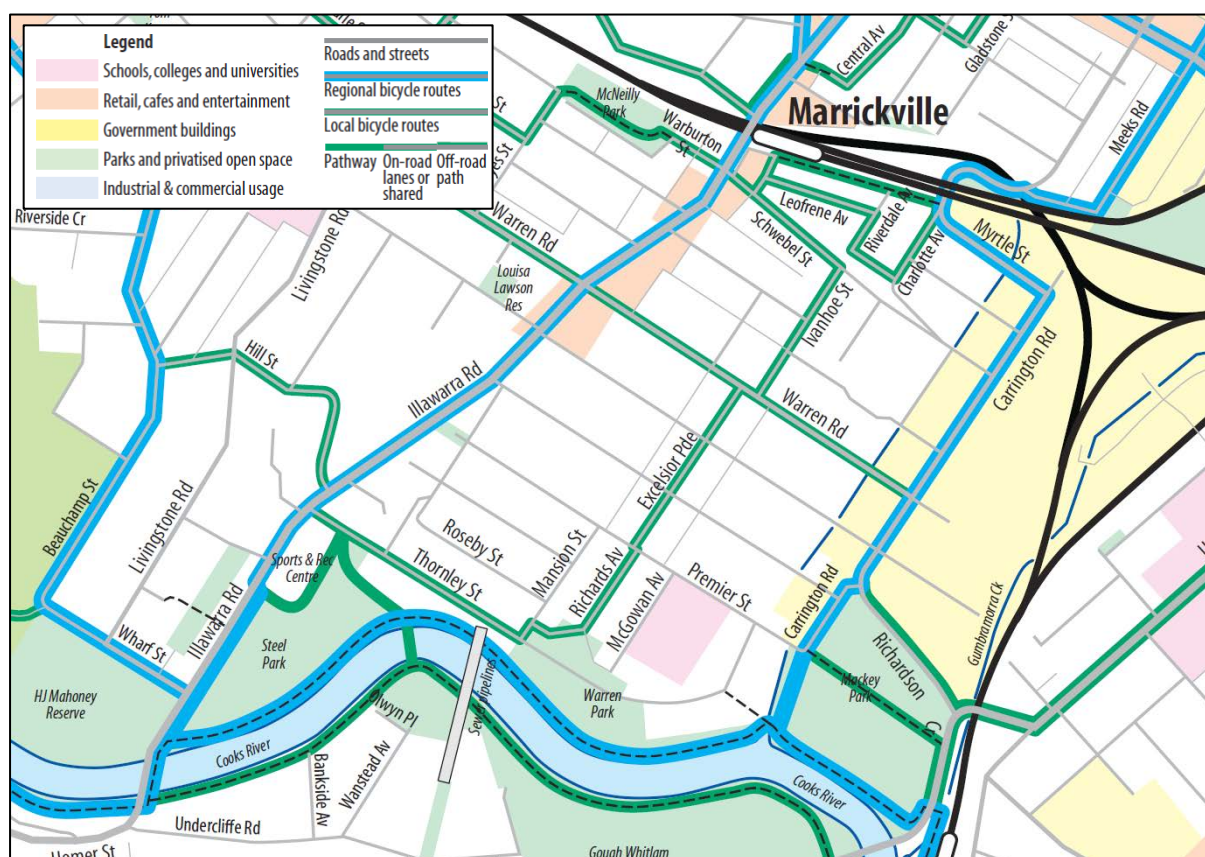


Figure 4: Bicycle routes identified by the Marrickville Bicycle Strategy 2007

Former Studies in the South Marrickville area

An initial study was completed covering the South Marrickville area in 1991 and two subsequent Local Area Traffic Management (LATM) reviews were completed in 2001 and 2011. Earlier reviews resulted in the installation of a number of devices throughout the area to manage traffic and improve safety.

The 2011 review considered a number of proposals to improve safety and amenity in the local area. One of the significant proposals examined included a one way westbound traffic flow in Warren Road between Illawarra Road and Carrington Road, and a one way eastbound traffic flow in Schwebel Street between Leofrene Avenue and Carrington Road. At the time Council undertook negotiations with Woolworths regarding the possibility of changing the size of truck and the delivery times to the loading dock located in Warren Road, east of Illawarra Road. Subsequent discussions with Woolworths representatives concluded that changing the size of trucks to rigid trucks would almost increase the truck movements from 14 to 27 deliveries per week. Woolworths did not favour trucks using Schwebel Street as a truck route due to the narrow width of the carriageway.

Although there was support from Warren Road residents for the one way scheme, residents in the adjoining streets were generally not in favour of the proposal as the traffic loads will be dispersed in these streets. At the time Council resolved not to support the one way westbound traffic proposal in Warren Road and eastbound traffic in Schwebel Street.

Existing Traffic Devices and Parking

Existing traffic management devices in the area consist of roundabouts, speed humps, coloured surface treatment, pedestrian refuge islands, entry 'local traffic area 50' signs, concrete medians to prevent turning movements, and permanent road closures. Truck load limit restrictions have been established in some roads.

Existing parking is generally unrestricted throughout the area, with sections of Leofrene Avenue and Schwebel Street marked with '2P 8.30am-6pm Mon-Fri, 8.30am-12.30pm Sat, Permit Holders Excepted' restriction. Commercial areas in Illawarra Road comprise of a combination of 1/2P, 1P to encourage parking turnover during business hours.

Face of kerb road carriageway widths for local streets providing connections from Illawarra Road and Carrington Road are provided in Table 2.

Road name	At/between	Carriageway width	Speed limit	Existing Traffic Calming
Schwebel Street	Station Street and High Street	7.3m	50km/h	None
	High Street and Junction Street	6.8m	50km/h	None
	Junction Street and Carrington Road	12.8m	50km/h	None
Warren Road	Illawarra Road and Carrington Road	8.3m	50km/h	5 'watts profile' speed humps
Renwick Street	Illawarra Road and Carrington Road	12.8m	50km/h	Roundabout and speed cushions at Excelsior Parade
Cary Street	Illawarra Road and Carrington Road	12.8m	50km/h	4 raised thresholds and roundabout at Excelsior Parade

Table 2: Local Road Width and Speed Limit

Both Schwebel Street and Warren Road are inadequate for simultaneous two way traffic with parking on both sides. Both roads operate as a two way however drivers are expected to utilise driveways and parking areas to pass oncoming vehicles in these streets.

Parking occupancy rates in general are moderate to high in unrestricted areas of Schwebel Street, most likely due to the daytime employee and commuter parking. In Warren Road there are moderate to high levels of parking between Illawarra Road and Excelsior Parade, as there are several older medium density apartments positioned nearby. The eastern half of Warren Road exhibits mild to moderate on-street parking levels throughout the day, with a 'No Parking 8am-4.30pm Mon-Fri' established on the south side between Excelsior Parade and Carrington Road to assist two way traffic.

In Grove Street, parking demand is particularly high due to its close proximity to Marrickville Station and the retail and commercial areas along Illawarra Road. Currently there are unrestricted parking along Grove Street.

Developments in the Study Area

Ferncourt Public School is located at the corner of McGowan Avenue and Premier Street. The K-6 school currently has approximately 440 students enrolled and its catchment area is generally the same as the South Marrickville LATM study area, which is accessible through local streets and within a 12 minute walk. The school has a wombat crossing at its main entrance in Premier Street and approach areas are marked and signposted with 40km/h School Zone speed restrictions.

Between 2015 and 2016 Marrickville Station was upgraded with improved accessibility streetscape works in Station Street. Council together with Transport for NSW undertook works commencing from Schwebel Street to Leofrene Avenue. Wider footpaths and a new accessible entrance from Station Street are available for commuters and this is expected to encourage the use of public transport in the area with the upcoming Sydney Metro Sydenham to Bankstown line.

The Woolworths Marrickville Supermarket is situated in 459-463 Illawarra Road, Marrickville and comprises of a single storey commercial building with undercroft parking for about 120 spaces. The store has been operating since 1977 and the current hours of operation are 7.30am to midnight Mondays to Fridays, 7.30am-10pm Saturdays and 8am to 10pm on Sundays and Public Holidays.

Loading dock operating hours are 7am-8pm Mondays to Fridays, 7am-5pm Saturdays, 10am-noon Sundays. Access to the loading dock is through Warren Road. Delivery trucks approach from Carrington Road and travel westbound in Warren Road to the Woolworths loading dock. Once unloading is complete, the trucks complete a U-turn and travel eastbound in Warren Road and exit onto Carrington Road. Management has advised that the drivers will radio the store prior to entering Warren Road to prevent a situation with multiple trucks along this street.

Traffic Data Review

The RTA Guide to Traffic Generating Developments and the RMS NSW Classification review paper assist in determining the acceptable environmental limit for each road classification. These guidelines are based on research undertaken by the RMS relating to residential safety and amenity and consider issues such as ease of crossing the road, consideration of noise and delay. This has been used as the basis for identifying traffic speed and volume issues along urban areas of NSW including the Inner West Council local government areas.

Road Classification	Road Type	Maximum Speed (km/h)	Max Peak Hour volume (veh/hr)	Daily Volume (ADT)
Local	Access way	25	100	1,000
	Street	40	200 desirable 300 maximum	2,000 Residential area 4,000 Other
Collector	Street	50	300 desirable 500 maximum	5,000 Residential area 10,000 Other
Regional (Sub-arterial)	Main Road	60-80	1,500-2,500	15,000-25,000

Table 3: Environmental Capacity and Speed Performance

Existing traffic conditions were reviewed by examining traffic data from recent traffic counters installed on site. Additional site observations including peak hour vehicle counts and turning movements were included in the review. Traffic speed, volume and vehicle classification were collected however data was not collected on all streets as only the data from essential areas were used in the study.

Under the above environmental limits for a local road, it is acknowledged that Warren Road and Renwick Street exceed the daily traffic limit for a local road status. As the area does not feature any regional or collector roads providing an east-west connection, traffic is shared amongst 3 main local streets (Warren Road, Renwick Street, Cary Street) between Illawarra

Road and Carrington Road. Both Warren Road and Renwick Street operate as a collector road as it provides a connection to Richardsons Crescent.

Traffic data collected in Warren Road west of the study area between Roach Street and Illawarra Road was found to be higher than the other sections of Warren Road.

The results of the traffic count data are displayed in Table 4.

Street	At/Between	Road Classification	Year Count Taken	Volume (AADT)	85 th Percentile Speed (km/h)	Proportion of HV %
Carrington Road	Richardsons Crescent and Renwick Street	Collector	2019	14,563	41.6	5.4
Carrington Road	Ruby Street and Schwebel Street	Collector	2019	11,146	53.5	6.1
Cary Street	Carrington Road and Excelsior Parade	Local	2006	1,517	45.7	1.5
Excelsior Parade	Warren Road and Renwick Street	Local	2018	1,684	38.9	2.2
Grove Street	Illawarra Road and Ivanhoe Street	Local	2019	706	49	3.9
Harriet Street	Mid block	Local	2017	352	47.9	4.2
Illawarra Road	Wharf Street and Cooks River	Regional	2017	14,511	52.2	3.1
Ivanhoe Street	Warren Road and Ruby Street	Local	2019	485	18.1	1.0
Renwick Street	Illawarra Road and Excelsior Parade	Local	2018	4,629	51.5	2.3
Renwick Street	Ivanhoe Street and Carrington Road	Local	2018	4,407	57.2	3.7
Richardsons Crescent	Between Unwins Bridge Road and Roundabout	Regional	2018	12,717	50.4	4.5
Ruby Street	Carrington Road and Junction Street	Local	2017	580	43.6	3.5
Schwebel Street	Leofrene Avenue and Ivanhoe Street	Local	2015	1,679	44.3	2.6
Schwebel Street	High Street and Junction Street	Local	2015	1,634	50.0	2.4
Warren Road	Illawarra Road and Excelsior Parade	Local	2018	3,853	34.1	3.2
Warren Road	Ivanhoe Street and Carrington Road	Local	2018	2,930	44.3	6.1
Warren Road	Roach Street and Illawarra Road	Local	2019	5,759	47.3	5.0

Table 4: Traffic data of roads within the study area

Traffic flow maps expressed in peak AM (8.00am-9.00am) and PM (5.00pm-6.00pm) hour for each direction are shown in Appendix A.

Based on site observations and traffic count data, the following movements are noted in the peak hours.

Weekday AM Peak hour (8.00am-9.00am):

- There is a distinct eastbound traffic movement through the study area. Recent traffic counts in Warren Road west of the study area between Illawarra Road and Roach Street revealed an annual average daily traffic volume (AADT) of 5,759 vehicles and an AM peak hour volume eastbound of 380vph (vehicles per hour).
- There is a significant right turning movement from Warren Road to Illawarra Road (170vph) southbound and left turn into Renwick Street eastbound (210vph)
- Right turn from Illawarra Road into Cary Street eastbound (240vph)
- Heavy traffic flow northbound on Carrington Road

Weekday PM Peak hour (5.00pm-6.00pm):

- Significant westbound traffic in Warren Road and Renwick Street, similarly distributed
- Significant southbound traffic flow on regional roads (Carrington & Illawarra Roads)

Weekend Peak hour (Saturday & Sunday 11am-1pm)

- Comparable traffic volume (80-90%) in Warren Road to a weekday peak hour
- More traffic travelling westbound during the weekend (58% westbound, 42% eastbound)

With the exception of Renwick Street, vehicle speeds within the local streets in the study area with wider roads showing higher speeds.

Accident History

Traffic accident data collected from the Roads and Maritime Service (RMS) for the 5 year period ending in June 2017 and are shown in Table 5 and crash locations are provided in appendix A. From October 2014 the NSW Police has ceased reporting tow away accidents with the exception where there are any persons killed or injured, or where a driver fails to swap details, or where a driver is suspected to be under the influence of drug or alcohol.

Street	Between	Total crashes	Injury	Tow away	Notes
Illawarra Road	Schwebel Street and Cooks River	41	29	12	3 crashes at Thornley Street 7 crashes at Cary Street 2 crashes at Renwick Street 6 crashes at Warren Road 3 accidents at Schwebel Street
Carrington Road	Myrtle Street and Richardson Crescent	20	13	7	6 crashes at Renwick Street 5 crashes at Warren Road 2 crashes at Schwebel Street 2 crashes at Myrtle Street
Richardson Crescent	Carrington Road and railway line	12	7	5	
Schwebel Street	Illawarra Road and Carrington Crescent	6	4	2	
Grove Street	Illawarra Road and Ivanhoe Street	1	1	0	
Ivanhoe Street	Schwebel Street and Warren Road	0	0	0	
Excelsior Parade	Warren Road and Premier Street	0	0	0	
Warren Road	Illawarra Road and Carrington Crescent	6	3	3	
Renwick Street	Illawarra Road and Carrington Crescent	2	1	1	
Cary Street	Illawarra Road and Carrington Crescent	2	0	2	
Thornley Street	Illawarra Road and Premier Street	1	1	0	

Table 5: Traffic accidents for the 5 year period ending in June 2017

Amongst local roads Schwebel Street and Warren Road were found with higher recorded accidents. Illawarra and Carrington Roads were found with accident levels comparable to other regional roads in Inner West.

Accidents at intersections were found to be higher at the following intersections:

- Illawarra Road and Cary Street (7 crashes)
- Illawarra Road and Warren Road (6 crashes)
- Carrington Road and Warren Road (5 crashes)
- Carrington Road and Renwick Street (6 crashes)

Traffic management options for Warren Road

Three traffic management options are presented to address the traffic and safety issues in Warren Road. All three options aim to improve the current situation, and are achievable options not requiring a significant capital to implement. Any options could be implemented within weeks of approval through Roads and Maritime Services and Local Council.

A 'do nothing' option is not supported as the current level of reported crashes and poor residential amenity will not achieve the strategies and outcomes set by the Inner West Council Community Strategic Plan.

Option A: One Way Traffic Proposal in Warren Road

The one way westbound traffic proposal in Warren Road between Illawarra Road and Carrington Road was the subject of a petition received in early 2019. Figure 5 illustrate the one way system concept.

In general converting a two way road to one way traffic would result in an improvement to congestion and a likely reduction of traffic volume. However the change will have wider impacts as existing traffic movements in opposing direction of the one way will be diverted to adjacent streets. Impacts to local residents include increased travel distances for residents and visitors under this arrangement. The wider carriageway for one way travel could slightly increase vehicle speeds, however this could be marginal as the existing four speed humps would be retained. It is also possible that there could be some non-compliance of the one way rule for drivers travelling to and from properties positioned at each end of the street.

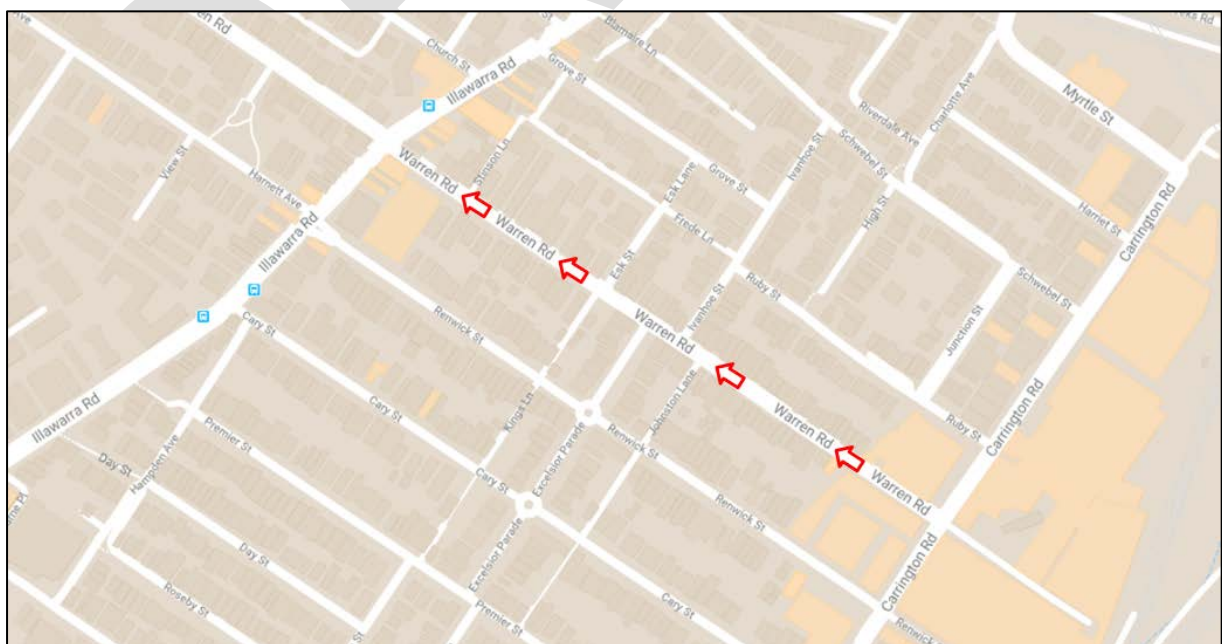


Figure 5: One Way Option in Warren Road

In recent years Woolworths has introduced smaller sized articulated trucks for deliveries to their stores. With a smaller length truck it would be possible for a right/left turn out of Warren Road into Illawarra Road, potentially reducing truck deliveries in Warren Road. However further truck deliveries to and from the industrial sites will be forced to travel through the one way arrangement.

Further communication with Woolworths Marrickville has indicated that they continue to occasionally utilise a smaller articulated truck for deliveries however due to their lower load capacity they cannot confirm that all future deliveries will be made with the smaller semi-trailers. As the truck route include both west and east travel along Warren Road, the one way proposal would force trucks to exit Warren Road at Illawarra Road. Due to the tight intersections throughout Marrickville, trucks would be required to turn left at Warren Road and Illawarra Road, and returning to Carrington Road via Renwick Street. An initial truck swept path assessment requires changes to the traffic signals layout in order to facilitate turning movements. Currently the smaller 2 axle articulated semi-trailers have been sighted turning right from Warren Road into Illawarra Road.

Other changes to facilitate the one way proposal would be:

- Changes to the traffic signal intersection at Warren Road/Illawarra Road TCS 1315 layout, including a No Entry and No Left Turn restriction
- Installation of approximately 10 'One Way' signs throughout Warren Road
- A Traffic Management Plan for the one way proposal to be approved by the RMS
- Public advertisement of the one way as required by the Roads Act for 28 days
- Truck turning assessment at the intersection of Warren Road and Illawarra Road

An examination of the peak hour traffic flow and the road network indicate that with a one way westbound arrangement Warren Road, the eastbound traffic flow would be diverted to Renwick Street during the AM peak hour. In the PM peak hour westbound traffic would operate with Renwick Street and Warren Road sharing the westbound traffic loads.

Current peak hour observations indicate an eastbound traffic volume in the order of 160vph (vehicles per hour) in Warren Road during the AM Peak hour. Under the one way arrangement, the majority would be diverted to Renwick Street, and will likely reach 450vph and 480vph which are approaching the upper limit for a collector road according to the RMS guidelines. Once traffic volume has exceeded 500vph on a local street, residents are likely to experience a significant reduction in amenity. During the PM peak the eastbound traffic volume in Renwick Street would be in the order of 300vph, which is comparable to the AM peak hour conditions.

Experience during the previous study and community consultation in 2011 revealed that residents living in streets surrounding Warren Road at the time generally did not support the one way proposal as it would increase traffic in their street.

Figure 5 shows the current AM peak hour traffic in Warren Road and surrounding road network.

Currently Renwick Street is controlled by a Stop sign at Carrington Road, and two pedestrian refuge islands and a kerbside bicycle lane were built some years ago. Crash records at the intersection suggest that further detailed investigation would be required and an upgrade of the intersection to traffic signals would be required to improve road safety.

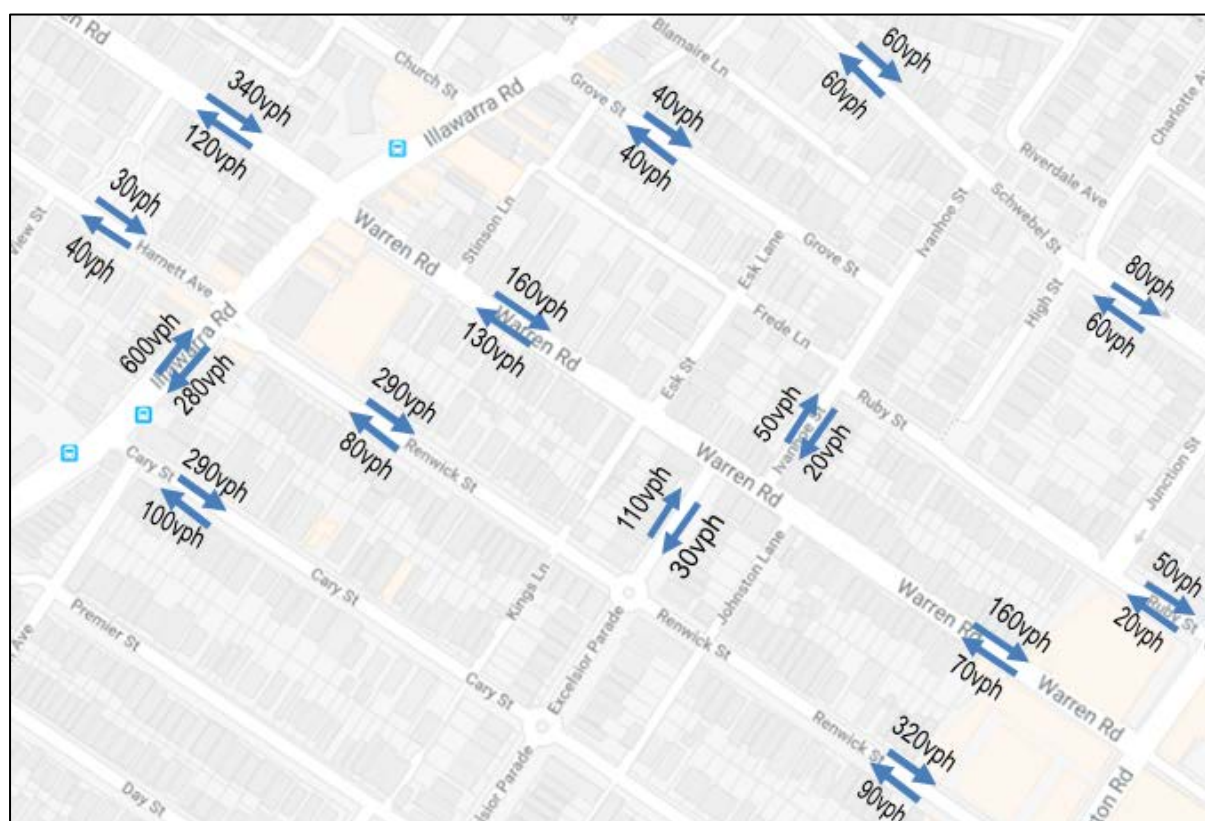


Figure 6: AM Peak hour traffic volume in Warren Road and surrounding roads

Option A: One Way Traffic Westbound in Warren Road between Illawarra Road and Carrington Road	
Advantages	Disadvantages
<ul style="list-style-type: none"> Localised congestion is minimised compared to a two way traffic through narrow roadscape Possible restoration of parking on south side of Warren Road between Excelsior Road and Carrington Road Woolworth truck movements in Warren Road could possibly be reduced Overall traffic volume may decrease 	<ul style="list-style-type: none"> Residents will travel longer distances to travel to and from their homes Prevailing traffic flow will be diverted to adjacent streets, likely Renwick Street Vehicles speeds could increase Drivers could illegally drive against the one way to avoid travelling around, particularly to and from destinations at each end of the street Truck volume from industrial area will increase Eastbound bicycle route will be diverted Truck load limit in Renwick Street will need to be lifted to enable Woolworth truck access back to Carrington Road

Table 6: Option A Factors for consideration

Option B: Part-Time Parking restrictions on south side of Warren Road between Illawarra Road and Excelsior Parade, Angle parking in Grove Street

In order to improve two way traffic flow, a part time parking restriction along the south side of Warren Road between Illawarra Road and Excelsior Parade could improve the situation. The subject area proposed is about 200m in length and a 'No Parking 8am-4.30pm Mon-Fri' zone will enable approximately 6.2m width for two way passing. The proposal would displace approximately 21 spaces in the street and would require support from affected residents. To

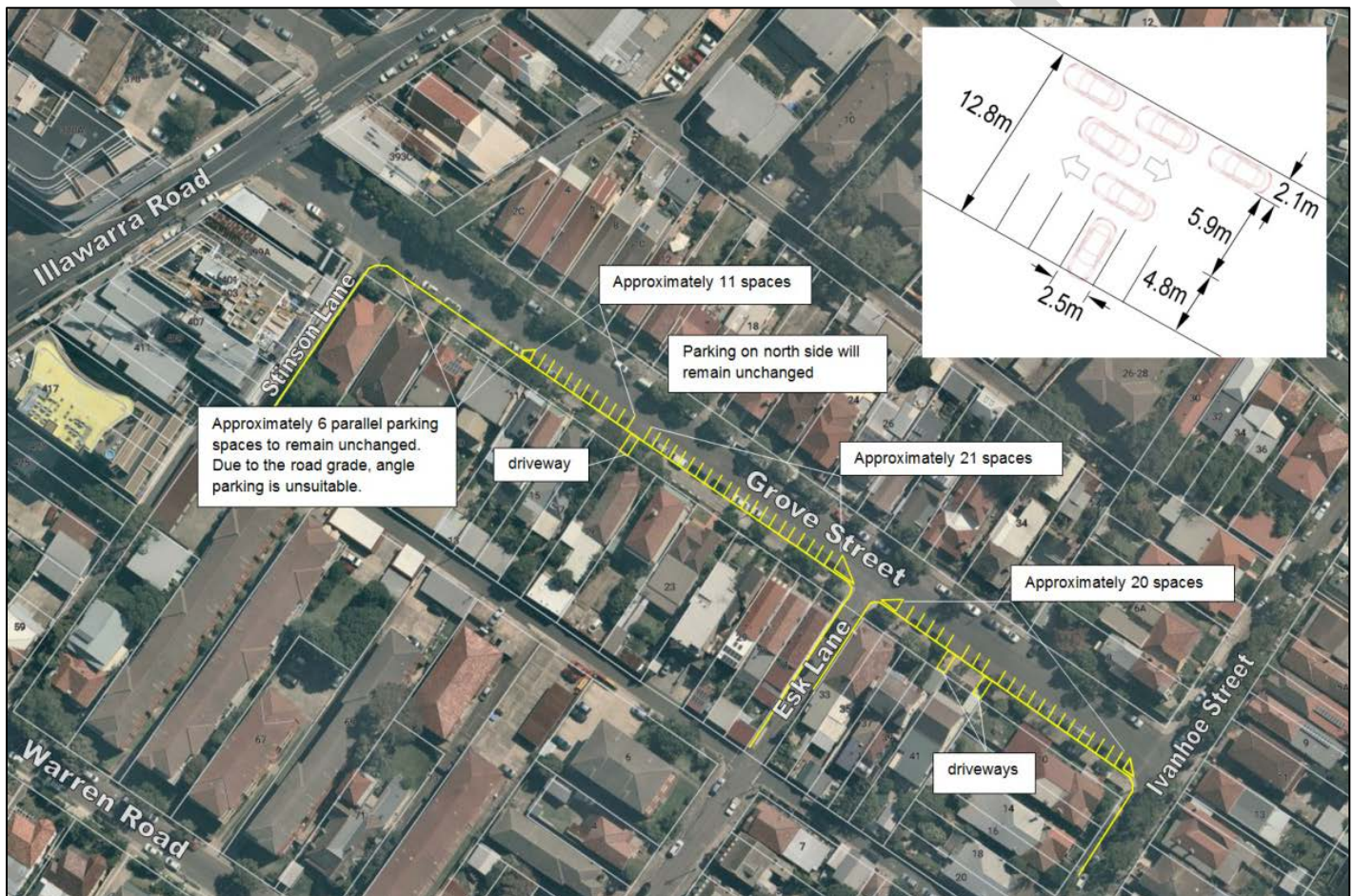
offset the reduction of on-street parking, it is proposed to establish 90 degree angle parking in Grove Street between Stinson Lane and Ivanhoe Street. The conversion of parallel parking to angle parking should increase the parking supply on the south side from 31 spaces to 52 spaces, matching the reduction of parking in Warren Road. The exact number of parking spaces will be determined during the detail design stage of the project should this option be supported.

Grove Street is approximately 250m from Warren Road which is within a 3 minute walk and can be accessed via Stinson Lane or Esk Lane.

Under this arrangement truck deliveries to Woolworths would remain unchanged. A scenario with two trucks passing in opposing directions would not be desirable and retain the existing operation with one truck accessing Warren Road at a time.

Concept plans showing the proposed parking restrictions on Warren Road and angle parking arrangements in Grove Street are shown in Figure 7 and Figure 8.

Figure 7: Angle parking concept plan in Grove Street



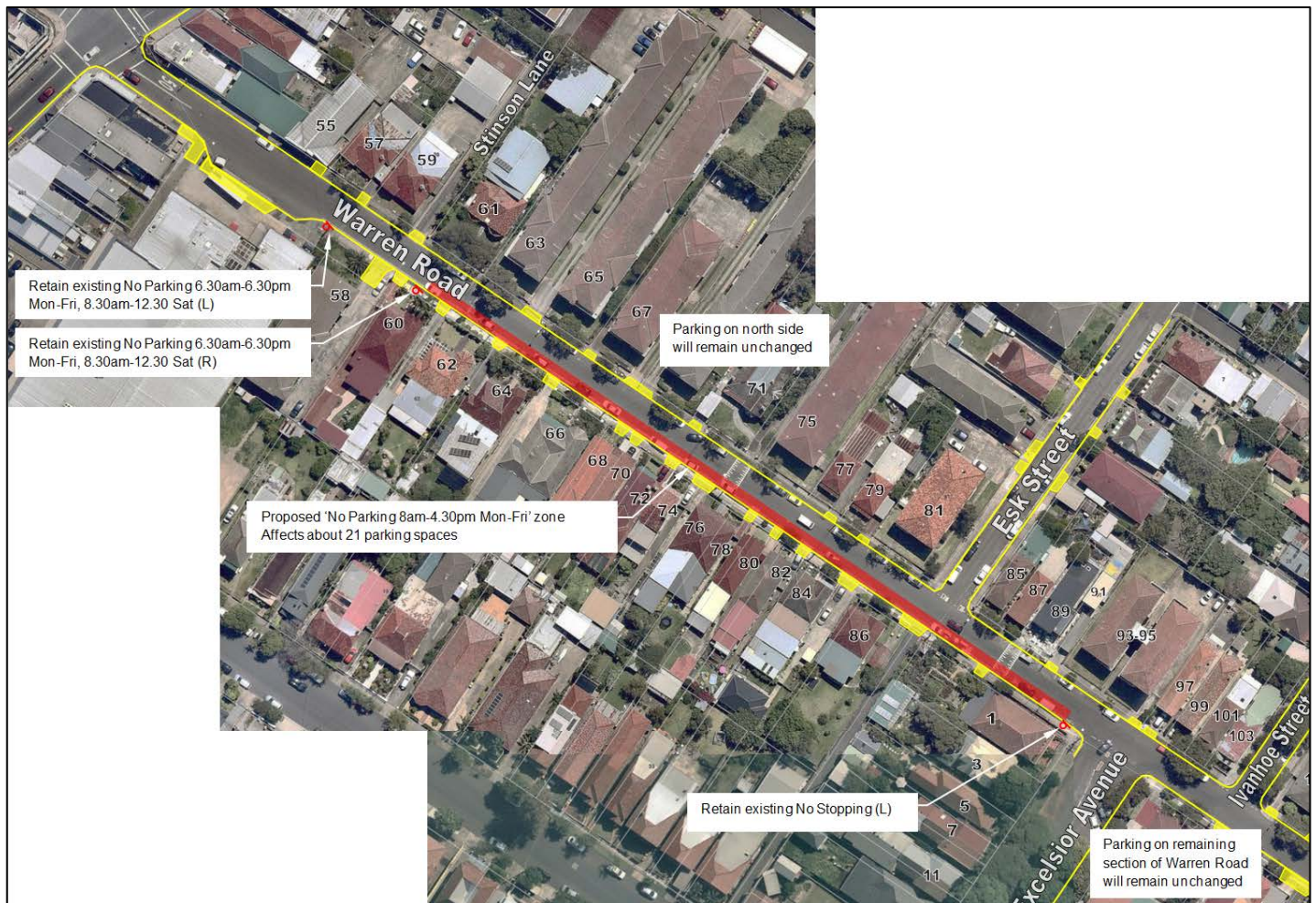


Figure 8: Part time parking restrictions in Warren Road

Table 7: Option B Factors for consideration

Option B: Part Time Parking Restrictions in South Side of Warren Road, Angle Parking in Grove Street	
Advantages	Disadvantages
<ul style="list-style-type: none"> Improved traffic flow and configuration consistent with remaining sections of Warren Road Minimal traffic diverted to neighbouring streets Expected lower traffic speeds, appropriate for pedestrians and cyclists in a residential road Traffic speeds in Grove Street should decrease 	<ul style="list-style-type: none"> Loss of 21 on-street parking spaces in Warren Road during daytime Monday to Friday Woolworths deliveries and truck movements will remain unchanged Warren Road could be a more attractive option for bypass traffic Weekend traffic conditions will remain unchanged

Option C: Provide Passing Bays in Warren Road between Illawarra Road and Excelsior Parade

The arrangement in Warren Road proposes short sections of No Parking zone in regular spacing to provide two way passing opportunities for vehicles approaching in opposing directions. This option provides a balance between traffic flow and resident's need to retain on-street parking in Warren Road.

The passing bays would be signposted as a full time No Parking with an option for a part time 'No Parking 8am-4.30pm Mon-Fri' zone consistent with the eastern section of Warren Road. Under both options, the reduction of parking supply would be 6 spaces.

As illustrated in Figure 8, the passing bays utilise existing driveways and kerbside parking areas and have been considered with minimal loss of on-street parking spaces. These vary in length from 11m providing space for 2 small vehicles, and up to 29.5m with capacity for a single articulated semi-trailer truck or 4 small vehicles to be occupying the passing bay at a time.

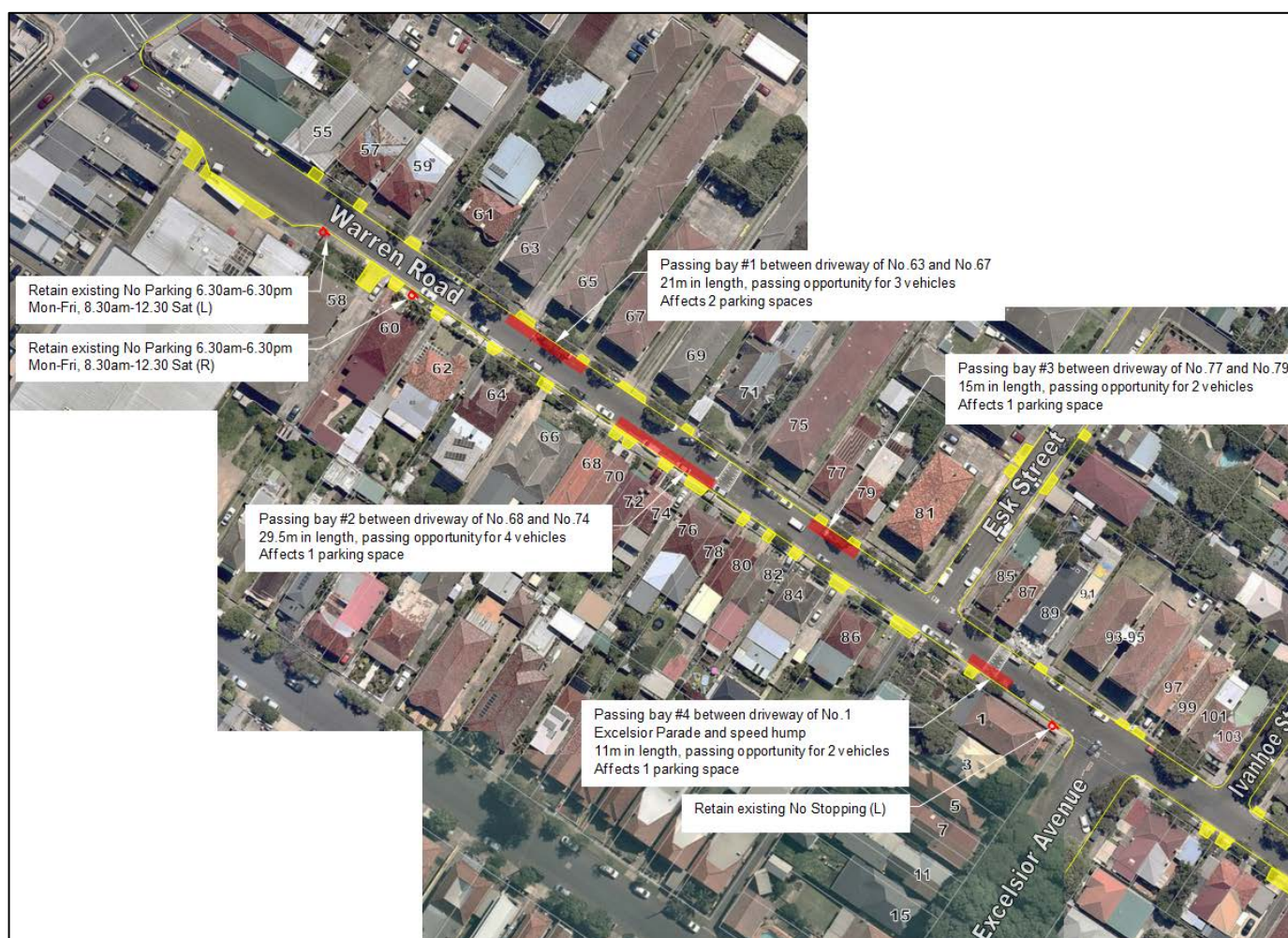


Figure 9: Passing bays in Warren Road

Table 8: Option C Factors for consideration

Option C: Provide Passing Bays in Warren Road between Illawarra Road and Excelsior Parade	
Advantages	Disadvantages
<ul style="list-style-type: none"> Some improvement to two-way traffic flow in Warren Road Minimal traffic diverted to neighbouring streets Vehicle speeds should remain low or unchanged, appropriate for pedestrians and cyclists in a residential road 	<ul style="list-style-type: none"> Loss of 6 on-street parking spaces in Warren Road Woolworths deliveries and truck movements will remain unchanged Warren Road could be perceived to be an attractive option for bypass traffic

Comparison of Warren Road, Renwick Street & Cary Street

A comparison of the local streets providing connections between Illawarra Road and Carrington Road is outlined in Table 2, page 7. Factors determining driver route choices would include the road environment, driver perception and the speed limit. In Renwick Street the absence of mid-block traffic calming devices and the wider road carriageway would be the reason drivers would prefer to utilise Renwick Street over Warren Road or Cary Street.

Reviewing the wider road network beyond the study area, there is a need to establish an east-west connection from Wardell Road, Beauchamp Street and Ewart Street, connecting to Carrington Road. With Warren Road, Cary Street and Renwick Street currently sharing these roles, it would be appropriate to undertake further study of the road function of the local road network in this area. A feasibility study should include changes to support transport and traffic needs for the local area, including:

- Upgrade intersection of Renwick Street and Carrington Road, remove existing pedestrian refuge islands and install traffic signals
- Upgrade intersection of Renwick Street and Illawarra Road, remove existing concrete median and install traffic signals
- Change Renwick Street and Harnett Avenue road classification to 'collector road' status, intersection safety improvements at the intersection of Harnett Avenue and Livingstone Road.
- Improve walking and pedestrian crossing opportunities around Illawarra Road and Carrington Road commercial/industrial areas. Investigate walking routes leading to Ferncourt Public School.

Other recommendations

As there is a speeding issue with 51.5km/h and 57.2km/h 85th percentile speeds in Renwick Street, it is recommended that the road be marked with edge lines on both sides between Illawarra Road and Carrington Road, reducing the carriageway to a 6.0m width for two-way traffic. The treatment has been effective in other locations reducing speeds by visually reducing the road carriageway.

Maintenance work identified at the time of the report:

- Remark missing chevrons and centrelines in Renwick Street east of Illawarra Road
- Remark faded Stop/Give Way lines at Warren/Esk, Warren/Excelsior, Warren/Ivanhoe, Warren/Carrington, Renwick/Carrington intersections

Community Engagement on draft proposals

To be completed upon completion of engagement

Future Developments

Council's Local Environmental Plan (LEP) and Development Control Plan (DCP) provide a direction on the size of potential developments in the Marrickville area. Based on future employment target from 'Marrickville Section 94/94A Contribution Plan 2014', a simplified mid-block assessment on the traffic generation has been made for the growth areas south of the railway line in Marrickville. Figure 10 highlights the projected 2031 residential growth areas along Illawarra Road and in total is in the order of 302 dwellings.

Table 9 shows the following non-residential population and change in Gross Floor Area (GFA) in Marrickville for the 2031 target.

Suburb	Commercial	Industrial	Retail
Marrickville	+305 workers 6,100m ²	-37 workers -3,700m ²	+231 workers 4,620m ²
Totals	+1,143 workers	-458 workers	+1,085 workers

Table 9: Non-residential change in population for Marrickville

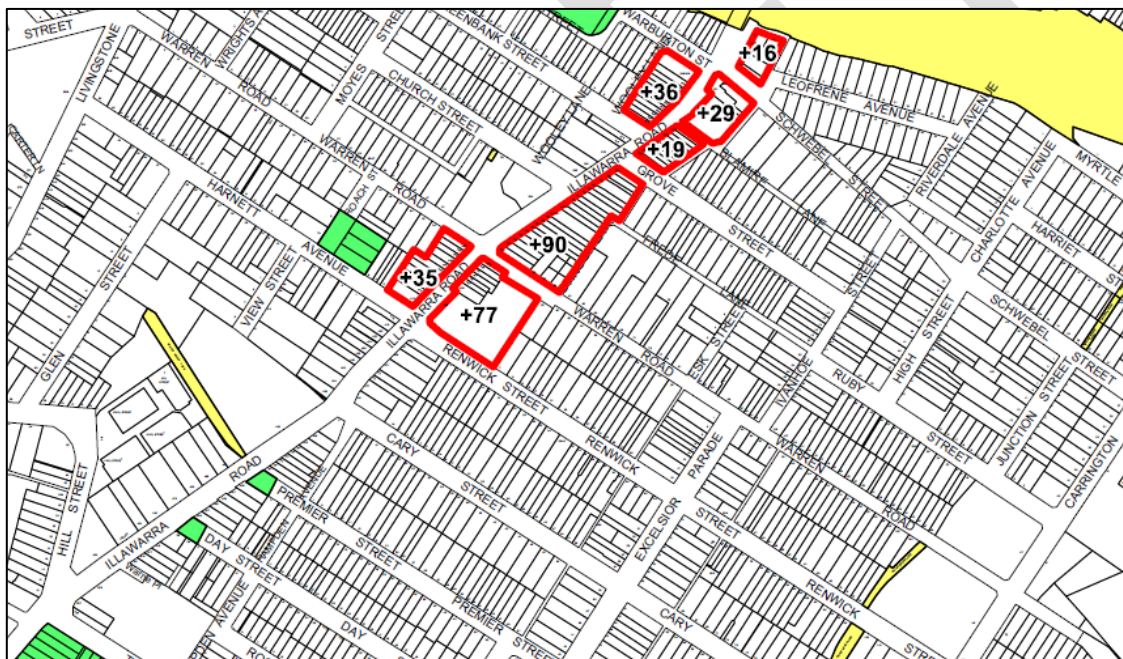


Figure 10: Potential additional dwellings along Illawarra Road

The calculation of change in worker population is based upon the assumption of retail and commercial occupancy of 1 worker per 20m² of GFA and 1 worker per 100m² of industrial GFA.

For this assessment the growth areas have been divided into 4 zones (A to D) shown in Figure 11 and applying the traffic generation rates set in the RMS Guide to Traffic Generating Developments (4 residential trips per day per dwelling, 11 office trips per 100m² GFA, 55 retail trips per 100m² GFA) the anticipated vehicle movements along the Illawarra Road development area are calculated in Table 10.

Anticipated developments				Additional trips vehicles per day(vpd)			
	Number of residential dwellings	Office floor area (GFA m ²)	Retail floor area (GFA m ²)	Residential	Office	Retail	Total
Zone A	81	244.1	184.9	324.0	26.9	101.7	452.5
Zone B	64	192.9	146.1	256.0	21.2	80.3	357.6
Zone C	100	301.4	228.3	400.0	33.2	125.5	558.7
Zone D	57	171.8	130.1	228.0	18.9	71.6	318.5
Total Marrickville (south)	302	910	689	1,208	100.1	379.1	1,687.3

Table 10: Additional trips from developments along Illawarra Road

Taking into consideration existing right turn restrictions in place at Illawarra Road/ Warren Road/Renwick Street, the westbound and eastbound traffic loading onto the 4 local streets are show in Figure 11 and the impact of additional traffic loading is shown in Table 11.

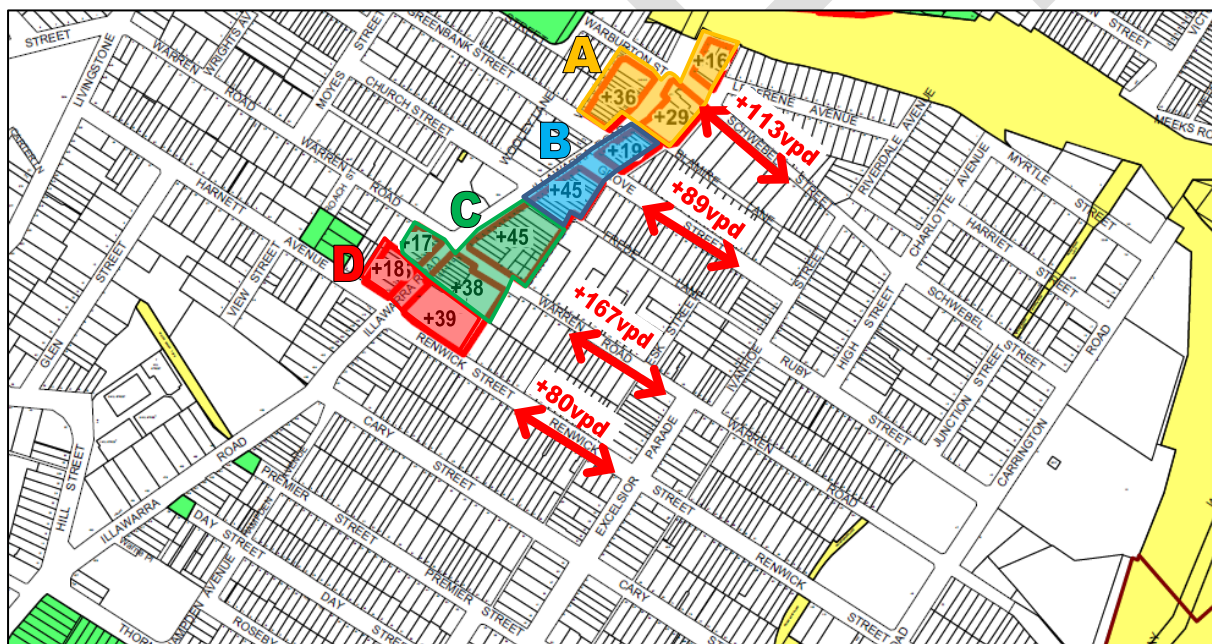


Figure 11: Anticipated traffic from additional developments along Illawarra Road

Street	At/Between	Current Volume (vpd)	Additional Volume (vpd)	Future Volume (vpd)	Traffic increase (%)
Schwebel Street	Leofrene Avenue and Ivanhoe Street	1,679	113	1,792	6.7%
Grove Street	Illawarra Road and Ivanhoe Street	706	89	795	12.6%
Warren Road	Illawarra Road and Excelsior Parade	3,853	167	4,020	4.3%
Renwick Street	Illawarra Road and Excelsior Parade	4,629	80	4,709	1.7%

Table 11: Additional traffic loading from developments

As illustrated, the relative traffic increase from the Illawarra Road development areas do not appear to be significant compared to the existing volume levels as some streets such as Renwick Street carry high levels of traffic for a local road. An increase of 80-140 vehicles per day on a local street is not considered detrimental; however an increase of vehicle trips will put additional pressure on intersections, increasing delays along the surrounding road network.

The inclusion of green travel plans, end of trip facilities for bicycle riders, minimum bicycle parking provisions and car share vehicles would contribute to lowering the vehicle trips generated from new developments. These would be worth considering in the review of Council's LEP, DCP, and the Integrated Transport Plan (ITP).

Planning Proposal 4-38 Carrington Road

In 2017 a Planning Proposal was submitted for 4-38 Carrington Road, where approximately 78,700m² General Industrial IN1 zoned land was proposed to be changed to a B2 Local Centre zoning, comprising of the following mixed uses:

- 2,616 residential units
- Commercial 10,257m² GFA
- Retail (supermarket) 2,000m² GFA and specialty retail 5,049m² GFA

Figure 12 show the subject site in context of the surrounding road network.



Figure 12: Carrington Road Planning proposal site location

Initial assessments provided by the developer's traffic consultant indicated a net traffic generation of 556 trips and 762 trips in the AM and PM peak hour respectively resulting from the development site. Council and RMS subsequently advised that this would need to be revised in further detail including additional intersection analysis at Warren Road/Illawarra Road, Renwick Street/Illawarra Road, Schwebel Street/Illawarra Road, Carrington Road/Warren Road, Carrington Road/Renwick Street, Carrington Road/Schwebel Street, and roundabout intersection of Richardsons Crescent near Mackay Park.

Other options include road widening of Richardsons Crescent from Carrington Road to its signalised intersection at Unwins Bridge Road. Also, investigate the option of road widening

of Unwins Bridge Road between Edgar Street and Gannon Street. These investigations are in relation to providing additional road capacity.

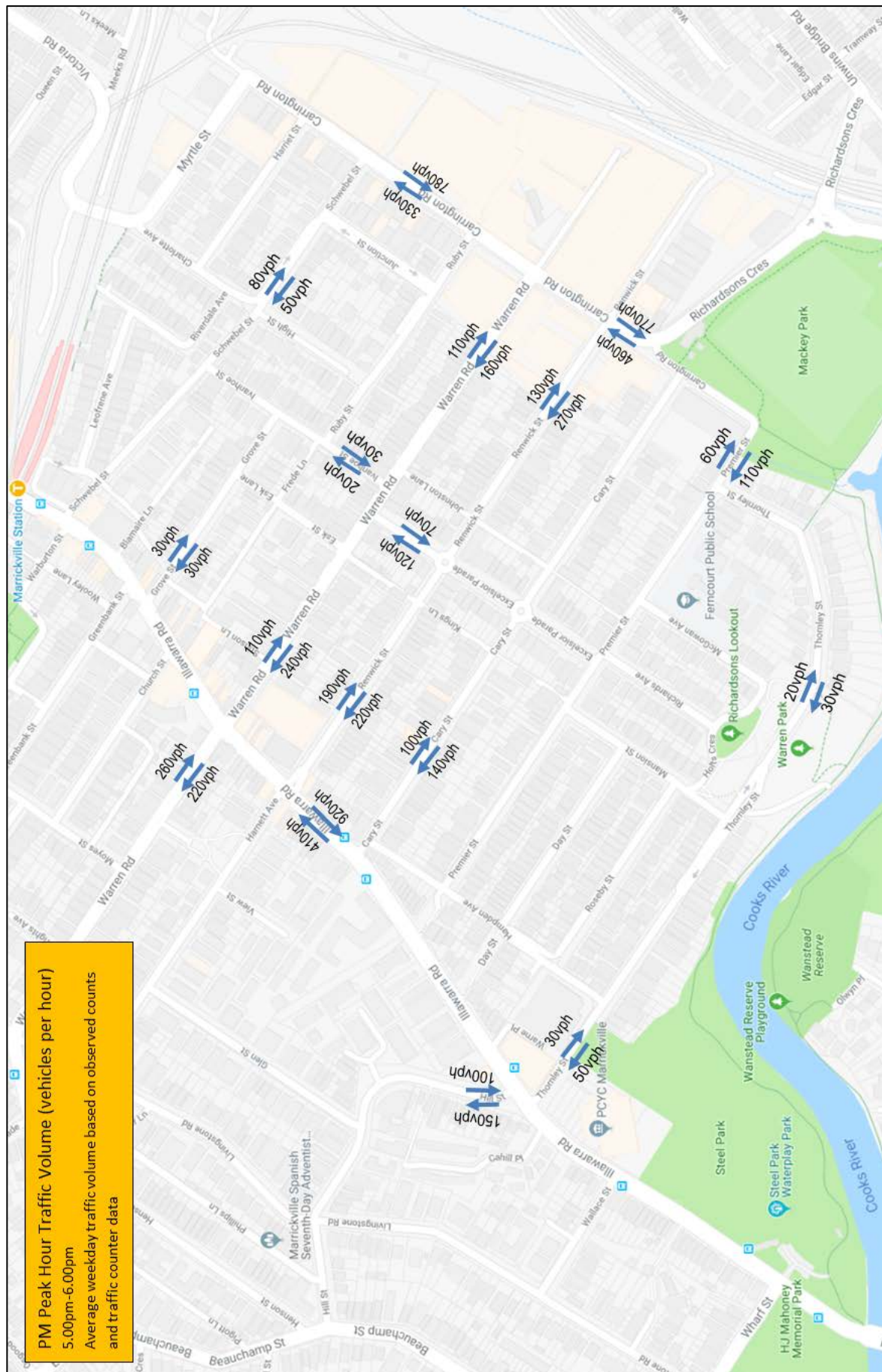
At the time of this report, the Planning Proposal application for this development was deferred pending Council's release of the Local Strategic Planning Statement (LSPS) and Council's LEP.

Recommendation

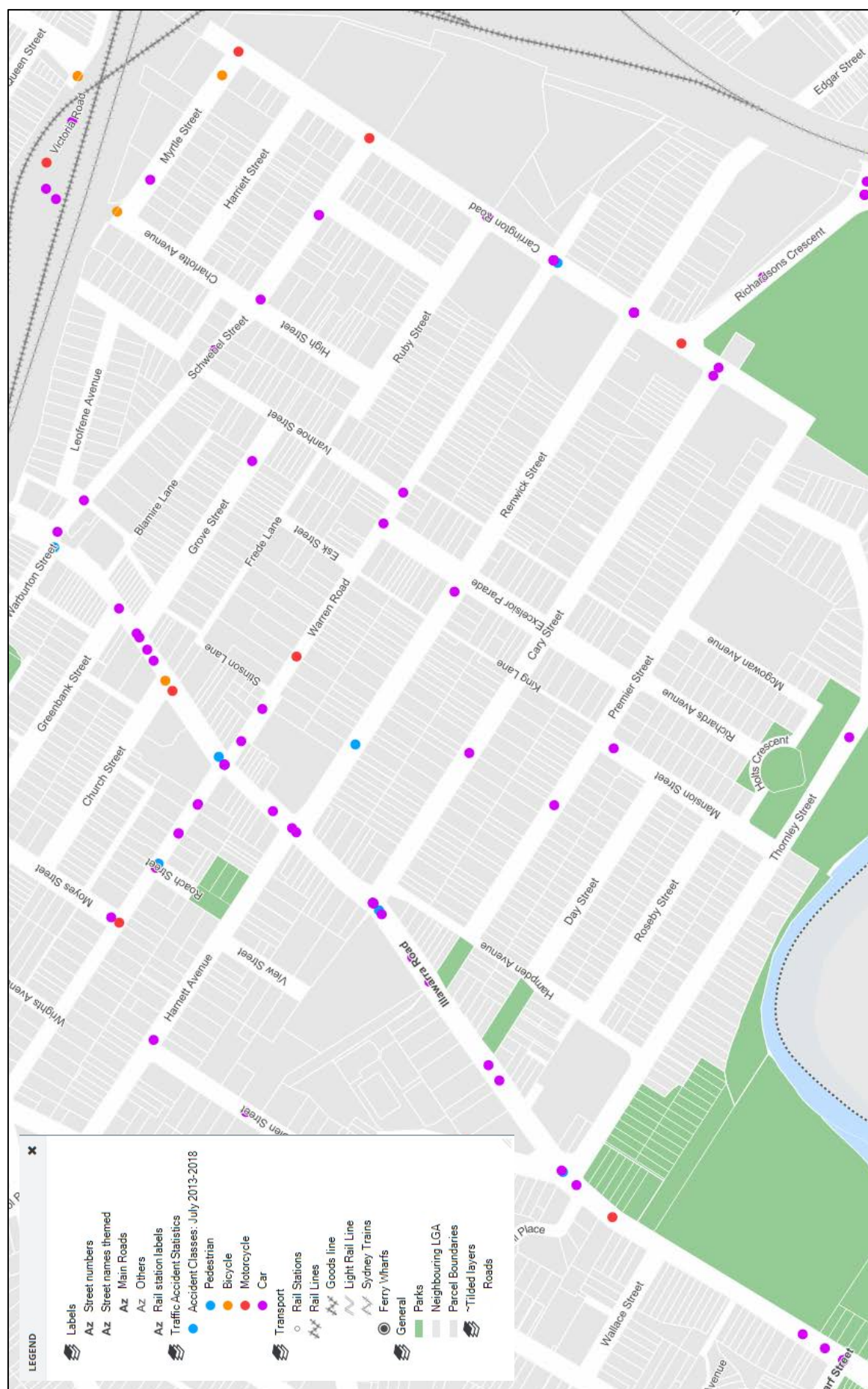
To be completed upon completion of community engagement.

Woolworths management be requested to implement a more equitable spread of delivery times to the loading dock.

[illegible]



Appendix B: Traffic Accident Locations



Appendix C: Renwick Street Edge Line Treatment

