

Proposed Mixed Use Development

**280-298 Railway Parade,
Carlton**

TRAFFIC AND PARKING ASSESSMENT REPORT

28 August 2020

Ref 18516

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1. INTRODUCTION

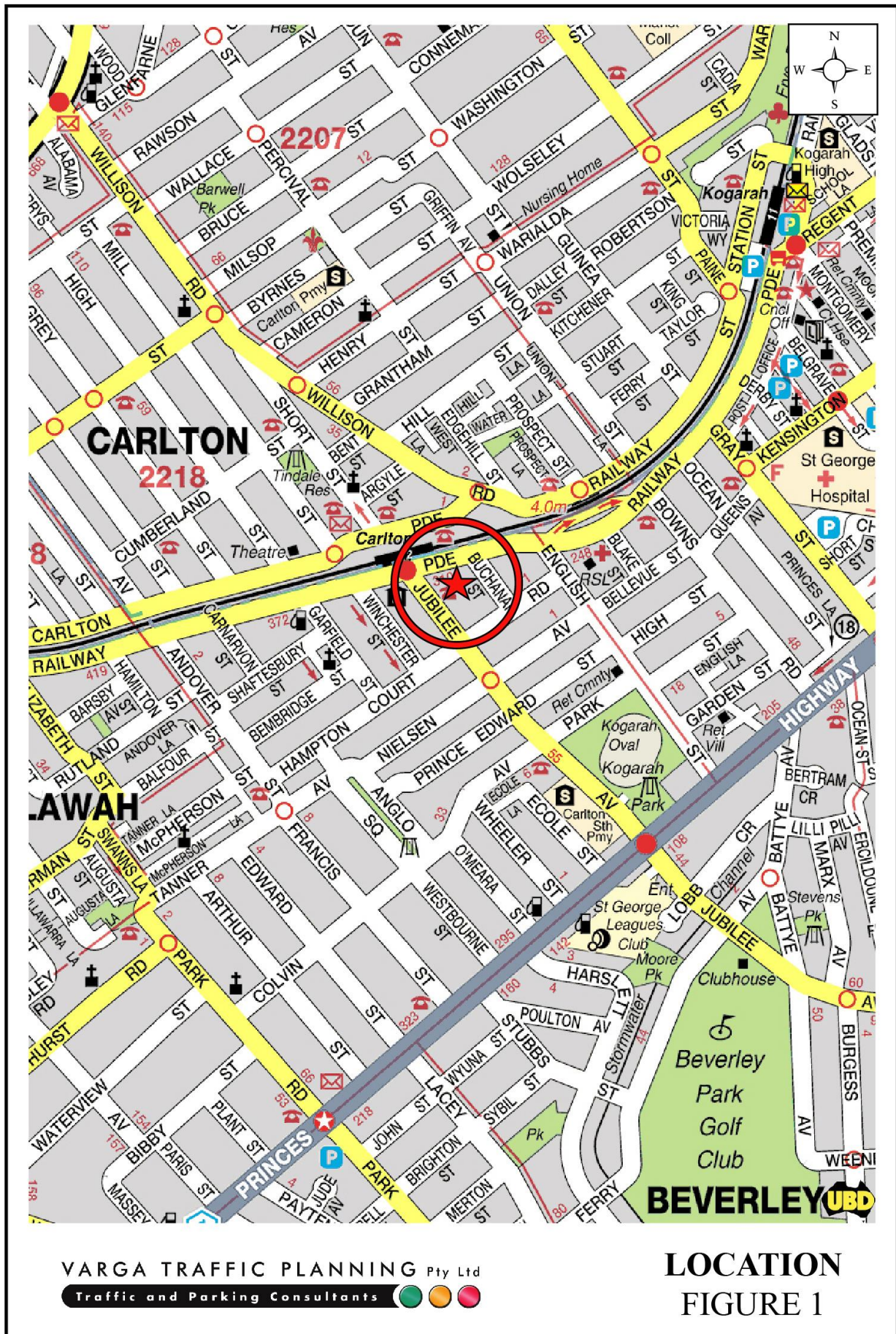
This report has been prepared to accompany a development application to Council for a mixed use development proposal to be located at 280-298 Railway Parade, Carlton (Figures 1 and 2).

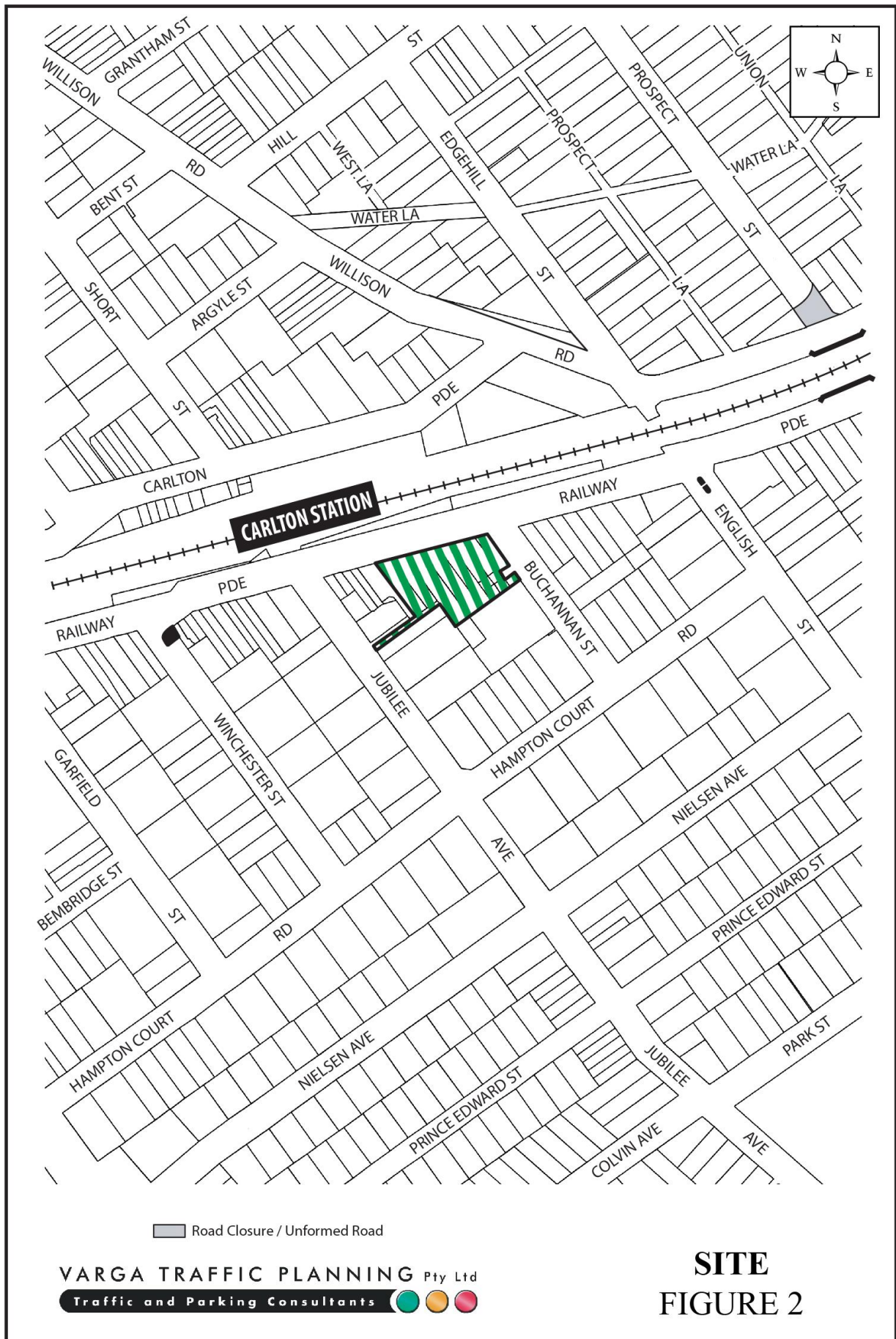
The proposed development involves the demolition of the existing buildings on the site to facilitate the staged construction of a new mixed use development.

Off-street car parking is to be provided in basement and at-grade car parking areas in accordance with Council and *SEPP 65* requirements. Vehicular access to the site is to be provided via a new entry/exit driveway located off Buchanan Street. An internal roadway also leads through the ground floor level to an exit-only driveway connecting to the existing battle-axe driveway and easement off Jubilee Avenue.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network and public transport services in the vicinity of the site
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





2. PROPOSED DEVELOPMENT

Site

The subject site is located on the south-western corner of the Railway Parade and Buchanan Street intersection, with an existing battle-axe driveway plus an easement off Jubilee Avenue. The site has street frontages of approximately 78m in length to Railway Parade, approximately 3m in length to Jubilee Avenue and a combined street frontage of approximately 32m in length to Buchanan Street. The site occupies an area of approximately 3,512m².

The site lies within the Carlton Local Centre, is zoned *B2 Local Centre* and is situated approximately 100m walking distance west of the Carlton Railway Station pedestrian entrance.

A recent aerial image of the site and its surroundings is reproduced below.



No. 280-286 Railway Parade are currently occupied by four buildings used for commercial/retail purposes. The cumulative floor area of the existing buildings is estimated to be approximately 800m². Off-street parking is provided at the rear of the site, within an at-grade car parking area for each of the respective building.

No. 288-296 Railway Parade is currently occupied by a 24/7 gymnasium operated by *Hardcore Gym*, comprising a floor area of approximately 2,000m². The first floor level of the gymnasium also extends across the adjacent site above No.296-298 Railway Parade. Off-street parking is provided along the access driveway and in an at-grade car parking area located at the rear of the building.

No. 296-298 is currently occupied by a commercial tenancy, comprising a floor area of approximately 250m², with a rear at-grade car parking area. Vehicular access to the car parking area is provided via a shared access driveway off Jubilee Avenue

Proposed Development

The proposed development involves the demolition of the existing buildings on the site to facilitate the staged construction of a new mixed use development on the site.

Stage 1 will comprise the construction of a new five-storey commercial building on the northern portion of the site, whilst Stage 2 will comprise the construction of a new mixed used building along the southern portion of the site comprising a commercial component on the ground floor level, with residential apartments on the levels above.

A total of 50 residential apartments are proposed in Stage 2 of the development, as follows:

| | |
|-----------------------|-----------|
| 1 bedroom apartments: | 20 |
| 2 bedroom apartments: | 30 |
| TOTAL: | 50 |

The entire development comprises a cumulative gross floor area of approximately 4,132m² for the commercial component, as well as a cumulative gross leasable floor area of 888m² for the retail component.

Off-street car parking is proposed for a total of 207 cars, with all but 38 spaces provided in a new part-two/part-three level basement car parking area. The remaining 38 parking spaces are proposed in an at-grade parking area.

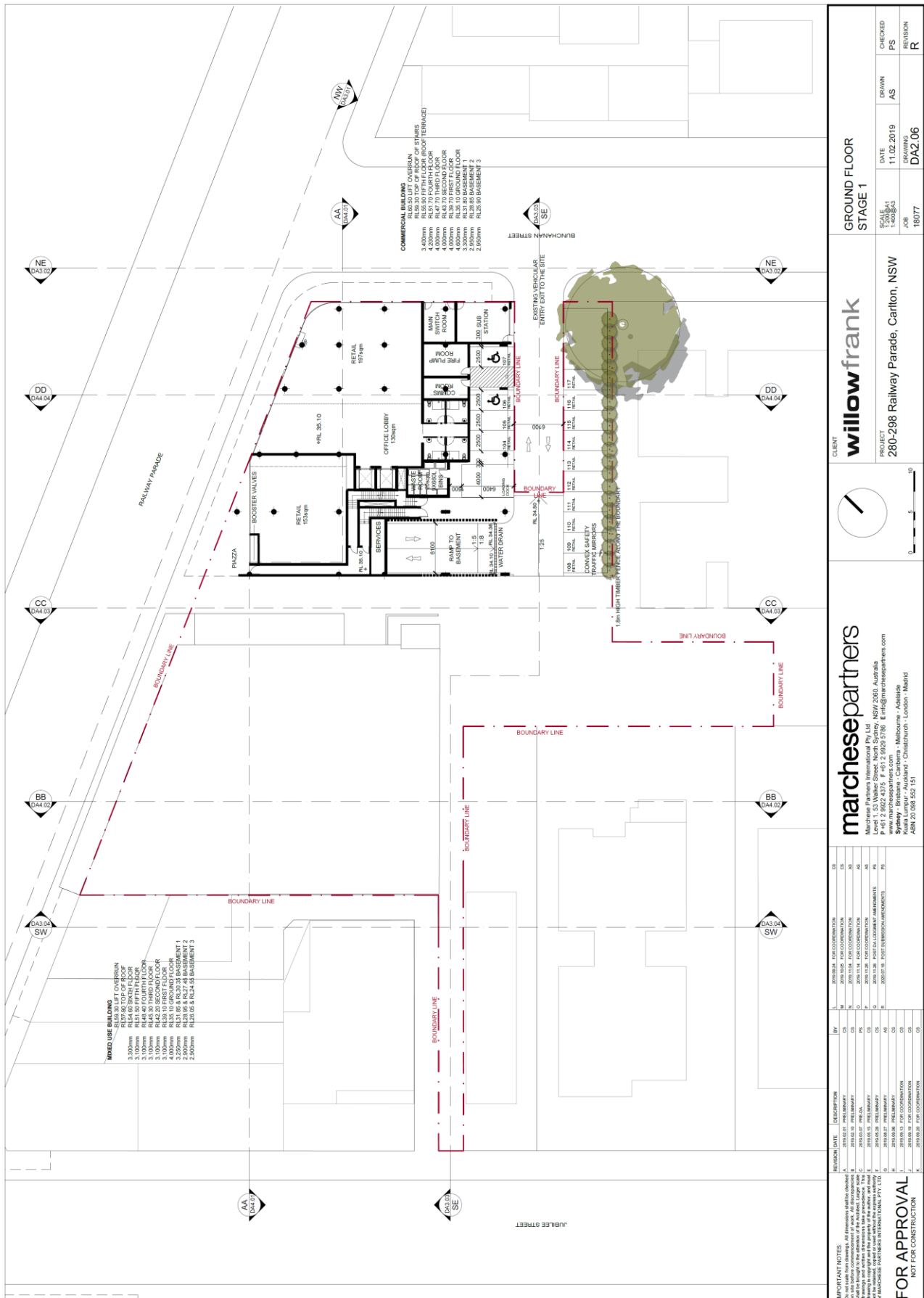
Vehicular access to the site is to be provided via a new entry/exit driveway located off Buchanan Street. An internal roadway also leads through the ground floor level to an exit-only driveway connecting to the existing battle-axe driveway and easement off Jubilee Avenue.

Loading/servicing for the proposed development is expected to be undertaken by a variety of light commercial vehicles such as vans, utilities and the like, up to and including 6.4m long SRV trucks. In this regard, given the size of the commercial suites, the proposed commercial component is expected to be serviced by a variety of light commercial vehicles such as vans, utilities and wagons, which are capable of fitting into a conventional parking space.

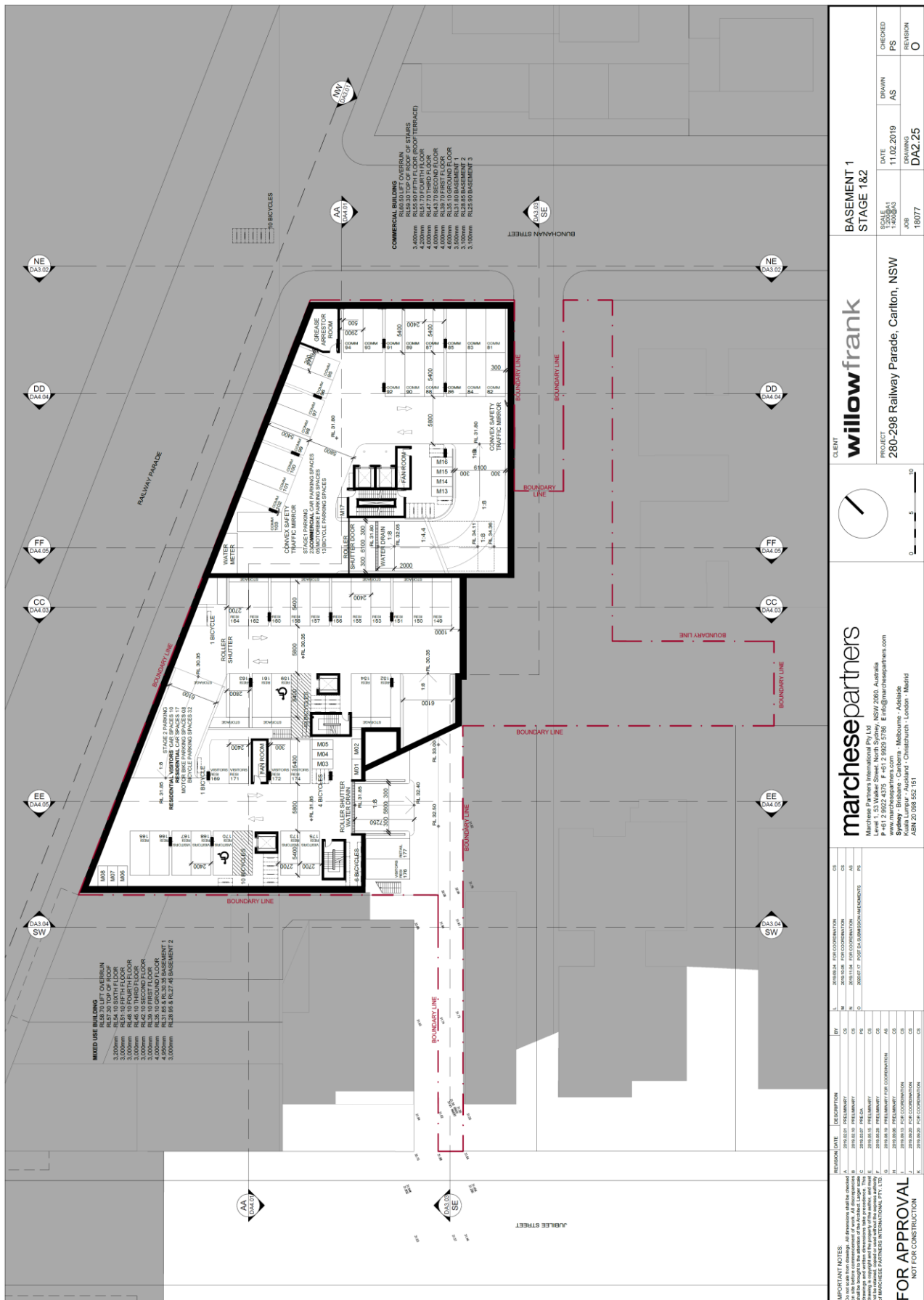
A temporary loading bay area is proposed in Stage 1, directly adjacent the garbage holding and will be capable of accommodating a 6.4m long SRV truck.

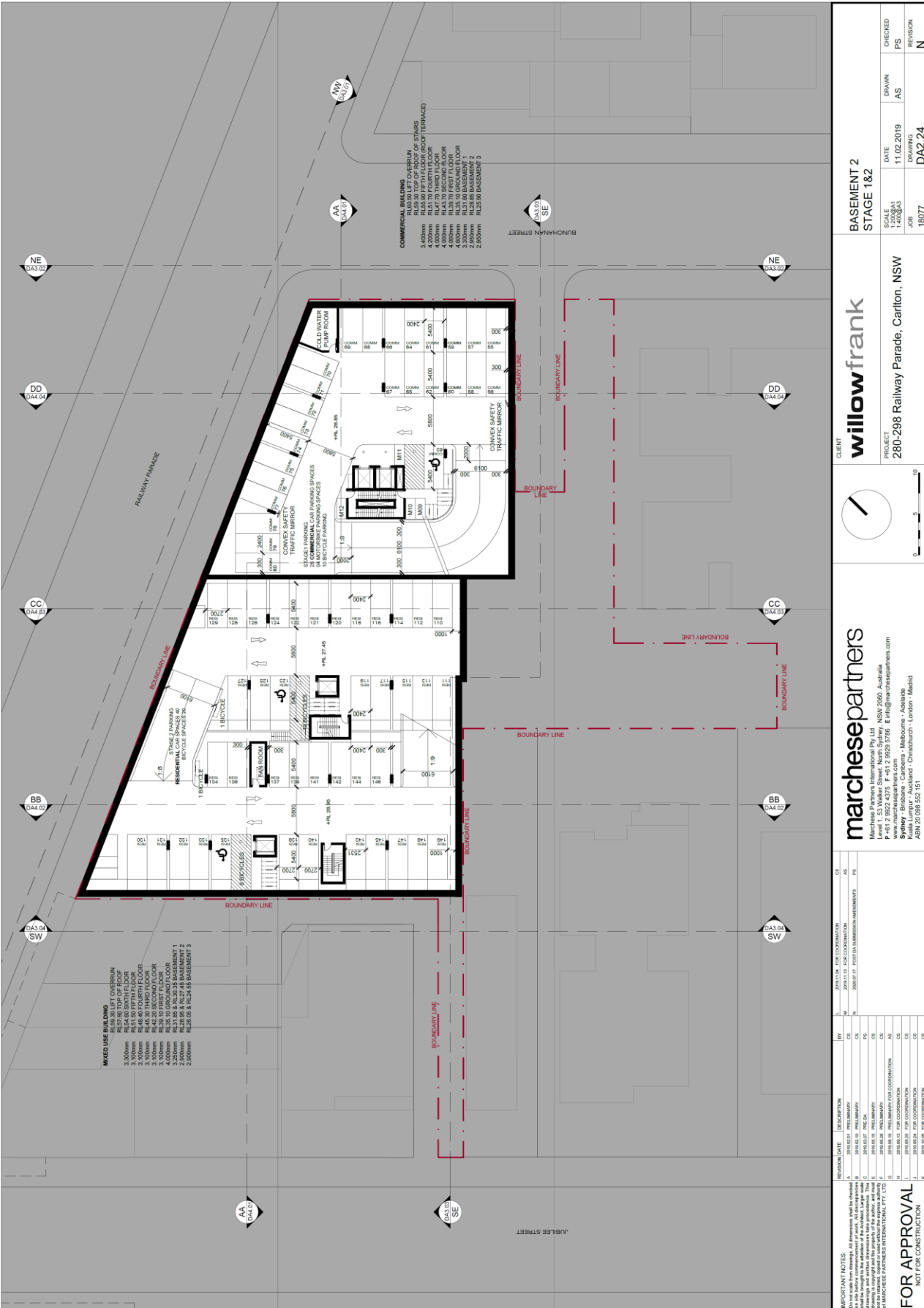
Once the Stage 2 development is completed, the service area will be relocated between the two buildings, near the garbage room areas for both the buildings. The Stage 2 loading dock will again be capable of accommodating commercial vehicles up to and including 6.4m long SRV trucks. Vehicular access to the loading dock is to be provided via the abovementioned site access driveway located at the southern end of the Buchanan Street site frontage.

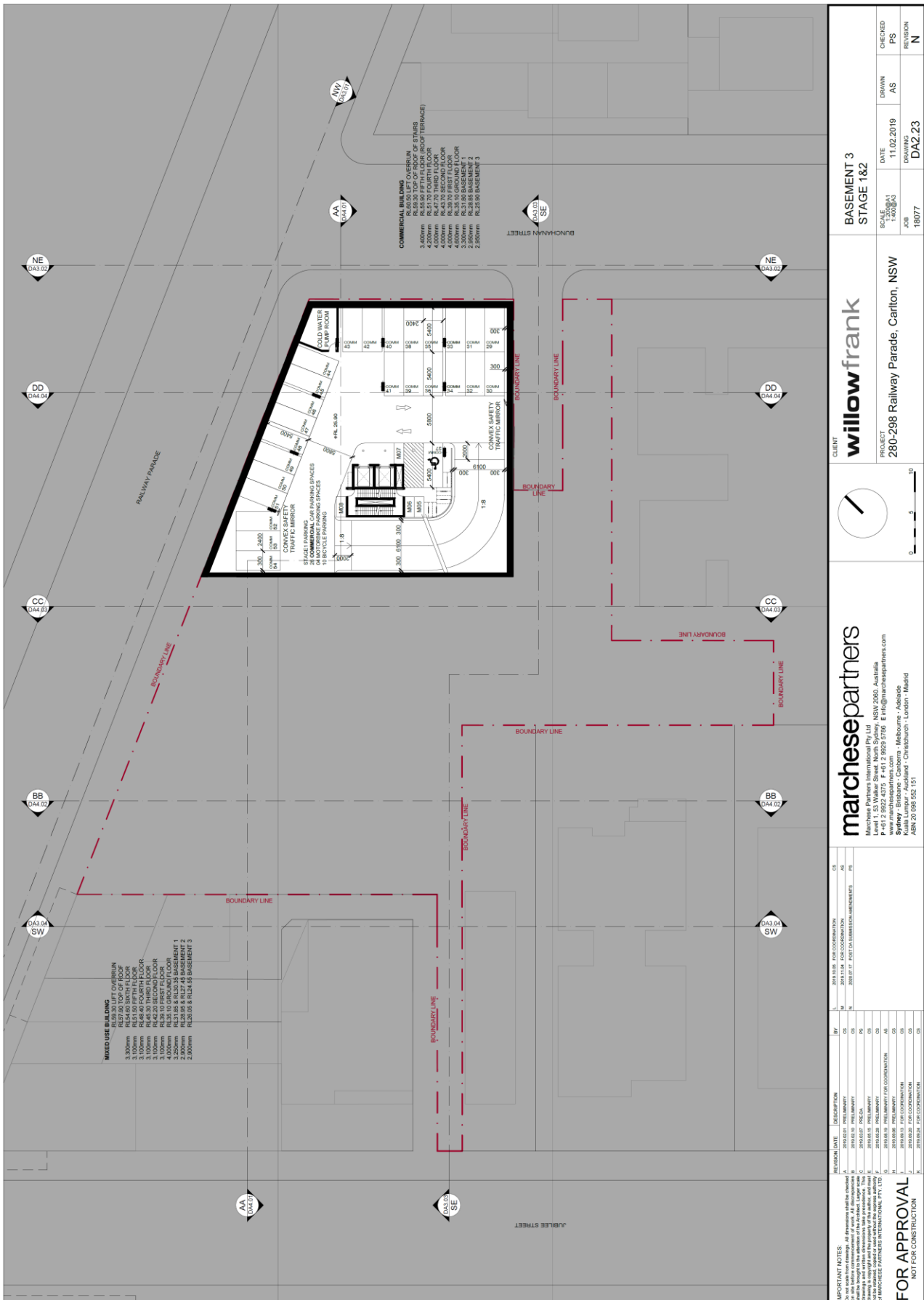
Plans of the proposed development have been prepared by *Marchese Partners International Pty Ltd* and are reproduced in the following pages.

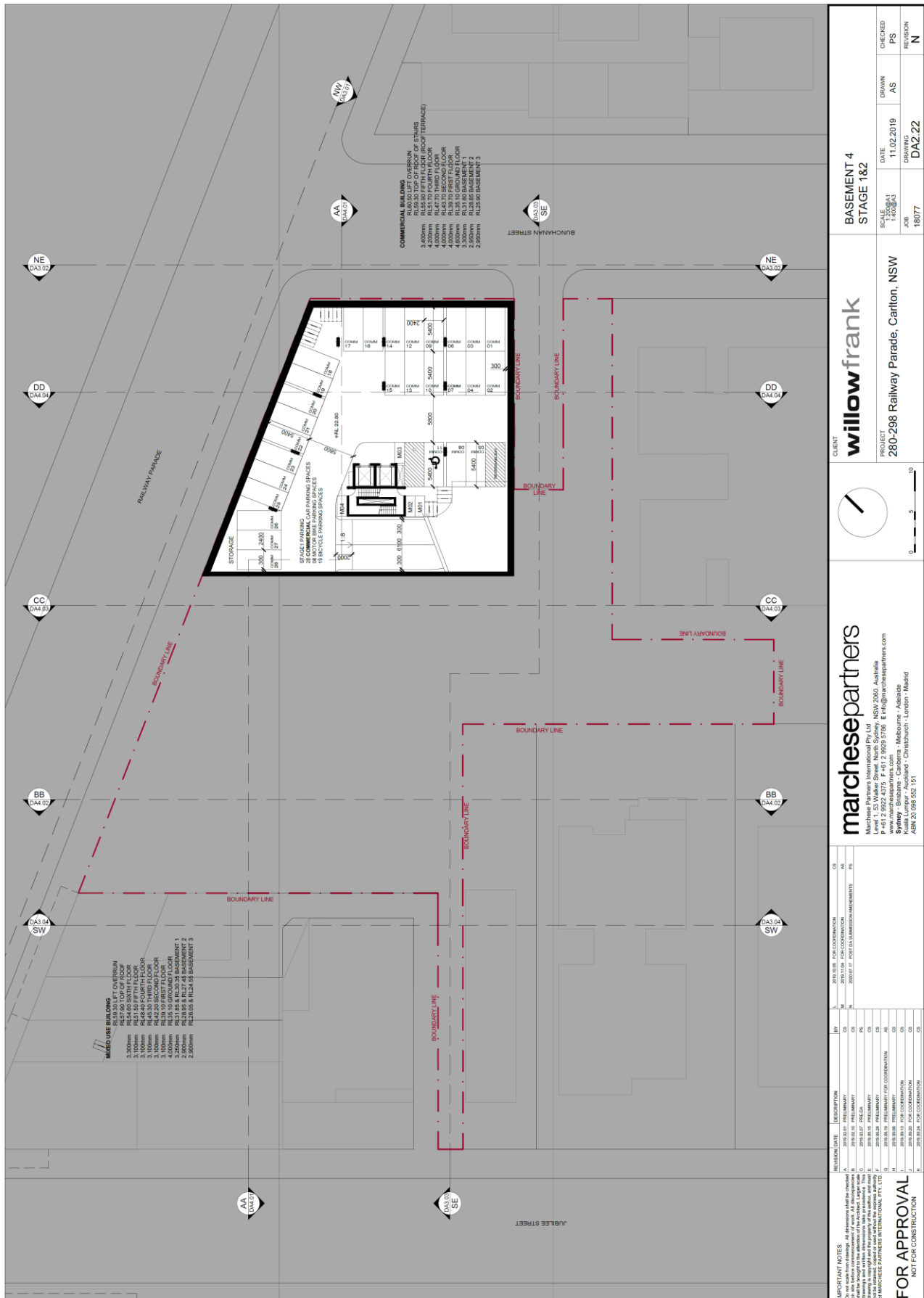












3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

The Princes Highway is classified by the RMS as a *State Road* and provides the key north-south road link in the area. It typically carries three traffic lanes in each direction, with opposing traffic flows separated by a central concrete median island. Clearway restrictions apply during commuter peak periods.

Railway Parade is classified by the RMS as a *Regional Road*, linking Harrow Road to Woniora Road. It typically carries one traffic lane in each direction in the vicinity of the site with kerbside parking generally permitted, subject to sign posted restrictions.

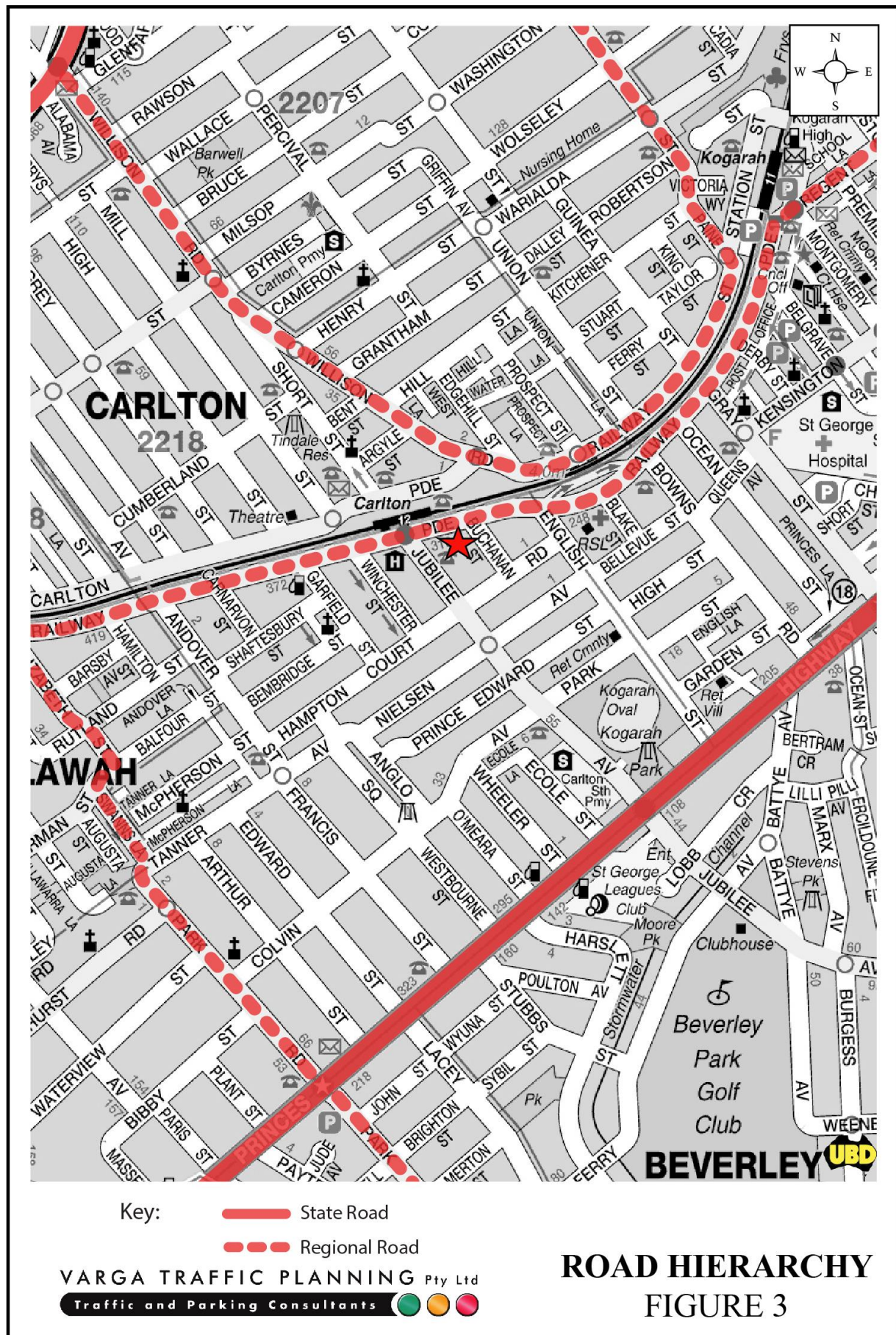
Elizabeth Street / Swanns Lane / Park Road are also classified by the RMS as *Regional Roads*, linking Bexley to Sans Souci. The route also typically carries one traffic lane in each direction, with kerbside parking generally permitted, subject to sign posted restrictions.

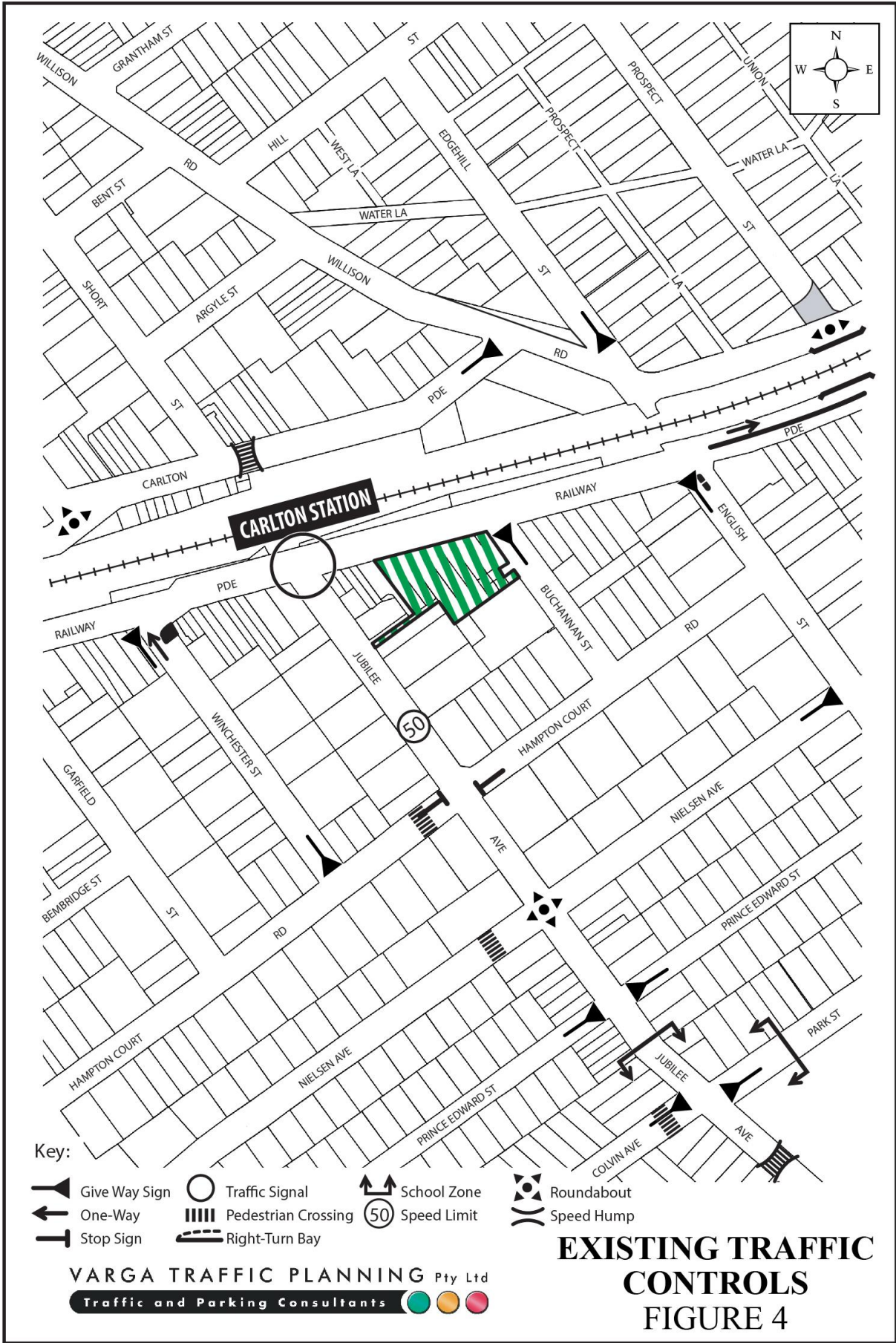
Buchanan Street and Jubilee Avenue are local, unclassified roads which are primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of both these roads.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 50 km/h SPEED LIMIT which applies to Railway Parade, Buchanan Street, Jubilee Avenue and all other local roads in the surrounding area





- TRAFFIC SIGNALS in Railway Parade where it intersects with Jubilee Avenue
- GIVE WAY SIGNS located on English Street, Buchanan Street and Winchester Street where they intersect with Railway Parade
- STOP SIGNS located along Hampton Court Road where it intersects with Jubilee Avenue
- a MID-BLOCK ROAD CLOSURE in Winchester Street, which precludes one-way northbound traffic movements
- PEDESTRIAN CROSSING located along Hampton Court Road, just west of the Jubilee Avenue intersection
- a ROUNDABOUT located in Jubilee Avenue where it intersects with Nielsen Avenue
- BLISTER ISLANDS located at various locations along Railway Parade to provide safety measures for pedestrian movements within the local area.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by detailed peak period traffic surveys undertaken as part of this traffic study.

The detailed traffic surveys were undertaken at the 4 intersections located around the perimeter of the site on 8th August 2019 as follows:

- Railway Parade/Buchanan Street
- Railway Parade/Jubilee Avenue
- Jubilee Avenue/Hampton Circuit Road
- English Street/Hampton Circuit Road

The results of the traffic surveys are reproduced in full in Appendix A and reveal that:

- two-way traffic flows in Railway Parade in the vicinity of the Buchanan Street intersection are typically in the order of 1200-1400 vph during the peak periods
- two-way traffic flows in Railway Parade in the vicinity of the Jubilee Avenue intersection are typically in the order of 1000 vph during peak periods
- two-way traffic flows in Jubilee Avenue are typically in the order of 600 vph during the AM peak period, increasing to 650 vph during the PM peak period
- two-way traffic flows in Hampton Circuit Road in the vicinity of the Jubilee Avenue intersection are typically in the order of 200 vph during the AM peak period, decreasing to 150 vph during the PM peak period
- two-way traffic flows in Hampton Circuit Road in the vicinity of the English Street intersection are significantly lower, typically in the order of 40-50 vph during the peak periods
- two-way traffic flows in English Street in the vicinity of the Hampton Circuit Road are typically in the order of 100-150 vph during peak periods.
- two-way traffic flows in Buchanan Street in the vicinity of the site are typically in the order of 20-30 vph during peak periods.

Projected Traffic Generation

The traffic implications of the development proposal primarily concern the effects of the *additional* traffic flows generated as a result of the development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of the proposed development is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the recently published RMS *Technical Direction (TDT 2013/04a)* document.

The *TDT 2013/04a* document specifies that it replaces those sections of the *RMS Guidelines* indicated, and that it must be followed when RMS is undertaken trip generation and/or parking demand assessments.

The *RMS Guidelines* and the updated *TDT 2013/04a* are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

Office Blocks

AM: 1.6 peak hour vehicle trips per 100m² GFA

PM: 1.2 peak hour vehicle trips per 100m² GFA

High Density Residential Flat Dwellings

AM: 0.19 peak hour vehicle trips unit

PM: 0.15 peak hour vehicle trips unit

The *RMS Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

The *RMS Guidelines* do not nominate a traffic generation rate for small, local shops, referring only to major regional shopping centres incorporating supermarkets and department stores. For the purpose of this assessment therefore, the traffic generation rate nominated in the *RMS Guidelines* for *office blocks* has been adopted in respect of the retail component of the development proposal.

Application of the above traffic generation rates to various components of the development proposal yields a traffic generation potential of approximately 90 vehicle trips per hour (vph) during the AM commuter peak period and approximately 66 vph during the PM commuter peak period, as set out below:

| Projected Future Traffic Generation Potential of the Site | | |
|--|-----------------|-----------------|
| | AM | PM |
| Residential (50 apartments): | 9.5 vph | 6.0 vph |
| Commercial/Retail Premises (~5,020m ²): | 80.3 vph | 60.2 vph |
| TOTAL TRAFFIC GENERATION POTENTIAL: | 89.8 vph | 66.2 vph |

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential of the site which is expected to occur as a consequence of the development proposal.

The RMS guidelines and the updated *TDT 2013/04a* nominates the following *gymnasiums* traffic generation rate and the abovementioned *office premises* traffic generation rate to the existing buildings on the site.

Gymnasiums (Metropolitan sub-regional centres)

9 peak hour vehicle trips per 100m² GFA

Application of the above traffic generation rates to the existing buildings on the site yields a traffic generation potential of approximately 197 vph during the *morning* commuter peak period and approximately 193 vph during the *afternoon* commuter peak period, as set out below:

| Existing Traffic Generation Potential of the Site | | | |
|--|---|------------------|------------------|
| | Existing Landuse | AM | PM |
| No. 280-286 & No.296-298 Railway Parade | Commercial building (~1,050m ²) | 16.8 vph | 12.6 vph |
| No. 290-296 Railway Parade | 24/7 Gymnasium (~2,000m ²) | 180.0 vph | 180.0 vph |
| TOTAL: | | 196.8 vph | 192.6 vph |

Accordingly, it is likely that the proposed development will result in a *reduction* in the traffic generation potential of the site during the *morning* and *afternoon* commuter peak periods, as set out below:

| Projected Nett Increase in Peak Hour Traffic Generation Potential of the site as a consequence of the development proposal | | |
|---|-------------------|--------------------|
| | AM | PM |
| Projected Future Traffic Generation Potential: | 89.8 vph | 66.2 vph |
| Less Existing Traffic Generation Potential: | -196.8 vph | -192.6 vph |
| NETT INCREASE IN TRAFFIC GENERATION POTENTIAL: | -107.0 vph | - 126.4 vph |

That projected increase in the traffic generation potential of the site as a consequence of the development proposal will not have any unacceptable traffic implications in terms of road network capacity, as is demonstrated by the following section of this report.

Traffic Implications - Road Network Capacity

The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA program which is widely used by the RMS and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages.

The results of the SIDRA capacity analysis of the 4 surrounding intersections are summarised on Tables 3.1, 3.2 3.3 and 3.4 on the following pages, revealing that:

Railway Parade/Buchanan Street Intersection

- the Railway Parade and Buchanan Street intersection currently operates at *Level of Service "A"* under the existing traffic demands with total average vehicle delays in the order of approximately 0.4 seconds/vehicle
- under the projected future traffic demands expected to be generated by the development proposal, the intersection would continue to operate at a *Level of Service "A"* during the commuter peak periods as well as the afternoon school peak being

between 2:30pm and 3:30pm, with increases in average vehicle delays of *less than* 1 second/vehicle.

Railway Parade/Jubilee Avenue Intersection

- the Railway Parade and Jubilee Avenue intersection currently operates at *Level of Service “C”* during the *morning* commuter peak period and at a *Level of Service “B”* during the *afternoon* school peak and commuter peak periods under the existing traffic demands, with total average vehicle delays in the order of approximately 25.1 seconds/vehicle
- under the projected future traffic demands expected to be generated by the development proposal, the intersection would continue to operate at *Level of Service “C”* during the AM peak period and at a *Level of Service “B”* during the PM peak period as well as the *afternoon* school peak being between 2:30pm and 3:30pm, with increases in average vehicle delays of *less than* 1 second/vehicle.

Jubilee Avenue/Hampton Circuit Road Intersection

- the Jubilee Avenue and Hampton Circuit Road intersection currently operates at *Level of Service “A”* under the existing traffic demands with total average vehicle delays in the order of approximately 2.8 seconds/vehicle
- under the projected future traffic demands expected to be generated by the development proposal, the intersection would continue to operate at a *Level of Service “A”* during the commuter peak periods as well as the afternoon school peak being between 2:30pm and 3:30pm, with increases in average vehicle delays of *less than* 1 second/vehicle.

English Street/Hampton Circuit Road Intersection

- the English Street and Hampton Circuit Road intersection currently operates at *Level of Service “A”* under the existing traffic demands with total average vehicle delays in the order of approximately 1.9 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the intersection would continue to operate at a *Level of Service “A”* during the commuter peak periods as well as the afternoon school peak being between 2:30pm and 3:30pm, with increases in average vehicle delays of *less than* 1 second/vehicle.

In the circumstances, it is clear that the proposed development will not have any unacceptable traffic implications in terms of road network capacity.

| TABLE 3.1 – RESULTS OF SIDRA ANALYSIS OF RAILWAY PARADE & BUCHANAN STREET | | | | | | | |
|--|---|-------------------------|-------------------------------|-------|--------------------------------------|-------------------------------|-------|
| Key Indicators | | Existing Traffic Demand | | | Projected Development Traffic Demand | | |
| | | AM | SCHOOL PEAK (Afternoon) | PM | AM | SCHOOL PEAK (Afternoon) | PM |
| Level of Service | | A | A | A | A | A | A |
| Degree of Saturation | | 0.538 | 0.346 | 0.368 | 0.610 | 0.383 | 0.407 |
| Average Vehicle Delay (secs/veh) | | | | | | | |
| Buchanan Street (south) | L | 5.9 | 7.4 | 7.7 | 6.1 | 8.0 | 8.4 |
| | R | 19.2 | 14.3 | 13.8 | 26.4 | 17.4 | 16.8 |
| Railway Parade (east) | L | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Railway Parade (west) | T | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.4 |
| | R | 7.9 | 9.4 | 9.6 | 9.2 | 10.8 | 11.0 |
| TOTAL AVERAGE VEHICLE DELAY | | 0.4 | 0.4 | 0.5 | 0.9 | 0.8 | 0.8 |

RAI_BUCX

RAI_BUCP

| TABLE 3.2 – RESULTS OF SIDRA ANALYSIS OF RAILWAY PARADE & JUBILEE AVENUE | | | | | | |
|---|--------------------------------|--|--------------|---|--|--------------|
| Key Indicators | Existing Traffic Demand | | | Projected Development Traffic Demand | | |
| | AM | SCHOOL PEAK (Afternoon) | PM | AM | SCHOOL PEAK (Afternoon) | PM |
| Level of Service | C | B | B | C | B | B |
| Degree of Saturation | 0.868 | 0.608 | 0.615 | 0.868 | 0.587 | 0.623 |
| Average Vehicle Delay (secs/veh) | | | | | | |
| Jubilee Avenue (south) | L R | 10.4 43.8 | 29.7 43.9 | 28.0 41.2 | 10.5 44.6 | 29.9 42.8 |
| Railway Parade (east) | L T | 41.1 50.8 | 17.0 16.1 | 18.7 18.3 | 41.1 50.8 | 17.0 16.1 |
| Railway Parade (west) | T R | 22.0 29.7 | 11.3 18.3 | 13.8 22.6 | 22.0 29.7 | 11.8 18.9 |
| TOTAL AVERAGE VEHICLE DELAY | 32.8 | 20.2 | 22.2 | 32.9 | 20.3 | 22.3 |

RAI_JUBX

RAI_JUBP

| TABLE 3.3 – RESULTS OF SIDRA ANALYSIS OF JUBILEE AVENUE & HAMPTON CIRCUIT ROAD | | | | | | |
|---|--------------------------------|--|------------|---|--|------------|
| Key Indicators | Existing Traffic Demand | | | Projected Development Traffic Demand | | |
| | AM | SCHOOL PEAK (Afternoon) | PM | AM | SCHOOL PEAK (Afternoon) | PM |
| Level of Service | A | A | A | A | A | A |
| Degree of Saturation | 0.287 | 0.040 | 0.255 | 0.341 | 0.050 | 0.287 |
| Average Vehicle Delay (secs/veh) | | | | | | |
| Jubilee Avenue (south) | | | | | | |
| L | 5.3 | 5.2 | 5.3 | 5.6 | 5.3 | 5.5 |
| T | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 |
| R | 5.7 | 5.2 | 6.0 | 5.9 | 5.3 | 6.2 |
| Hampton Circuit Road (east) | | | | | | |
| L | 8.5 | 8.1 | 8.8 | 8.6 | 8.2 | 8.9 |
| T | 12.8 | 8.1 | 12.8 | 14.6 | 8.3 | 14.1 |
| R | 14.4 | 8.1 | 13.0 | 16.6 | 8.3 | 14.4 |
| Jubilee Avenue (north) | | | | | | |
| L | 7.6 | 5.6 | 7.1 | 7.9 | 5.6 | 7.4 |
| T | 0.4 | 0.0 | 0.3 | 0.5 | 0.0 | 0.4 |
| R | 7.8 | 5.7 | 7.5 | 8.2 | 5.7 | 7.8 |
| Hampton Circuit Road (west) | | | | | | |
| L | 10.8 | 8.3 | 9.9 | 11.7 | 8.3 | 10.4 |
| T | 13.3 | 8.2 | 12.6 | 15.7 | 8.3 | 14.0 |
| R | 14.8 | 8.1 | 14.0 | 17.8 | 8.3 | 15.9 |
| TOTAL AVERAGE VEHICLE DELAY | 3.3 | 1.8 | 3.2 | 3.7 | 1.9 | 3.4 |

JUB_HAMX

JUB_HAMP

| TABLE 3.4 – RESULTS OF SIDRA ANALYSIS OF ENGLISH STREET & HAMPTON CIRCUIT ROAD | | | | | | |
|---|--------------------------------|--|------------|---|--|------------|
| Key Indicators | Existing Traffic Demand | | | Projected Development Traffic Demand | | |
| | AM | SCHOOL PEAK (Afternoon) | PM | AM | SCHOOL PEAK (Afternoon) | PM |
| Level of Service | A | A | A | A | A | A |
| Degree of Saturation | 0.038 | 0.049 | 0.053 | 0.048 | 0.054 | 0.059 |
| Average Vehicle Delay (secs/veh) | | | | | | |
| English Street (south) L | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| English Street (north) T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| R | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| Hampton Circuit Road (west) L | 4.6 | 4.6 | 4.6 | 4.7 | 4.6 | 4.6 |
| R | 4.9 | 5.0 | 5.0 | 4.9 | 5.0 | 5.0 |
| TOTAL AVERAGE VEHICLE DELAY | 1.9 | 1.8 | 1.9 | 2.1 | 2.1 | 2.2 |

ENG_HAMX

ENG_HAMP

Criteria for Interpreting Results of Sidra Analysis

1. Level of Service (LOS)

| LOS | Traffic Signals and Roundabouts | Give Way and Stop Signs |
|-----|--|---|
| 'A' | Good operation. | Good operation. |
| 'B' | Good with acceptable delays and spare capacity. | Acceptable delays and spare capacity. |
| 'C' | Satisfactory. | Satisfactory but accident study required. |
| 'D' | Operating near capacity. | Near capacity and accident study required. |
| 'E' | At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode. | At capacity and requires other control mode. |
| 'F' | Unsatisfactory and requires additional capacity. | Unsatisfactory and requires other control mode. |

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

| Level of Service | Average Delay per Vehicle (secs/veh) | Traffic Signals, Roundabout | Give Way and Stop Signs |
|------------------|--------------------------------------|--|--|
| A | less than 14 | Good operation. | Good operation. |
| B | 15 to 28 | Good with acceptable delays and spare capacity. | Acceptable delays and spare capacity. |
| C | 29 to 42 | Satisfactory. | Satisfactory but accident study required. |
| D | 43 to 56 | Operating near capacity. | Near capacity and accident study required. |
| E | 57 to 70 | At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode. | At capacity and requires other control mode. |

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹ The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.

4. PARKING IMPLICATIONS

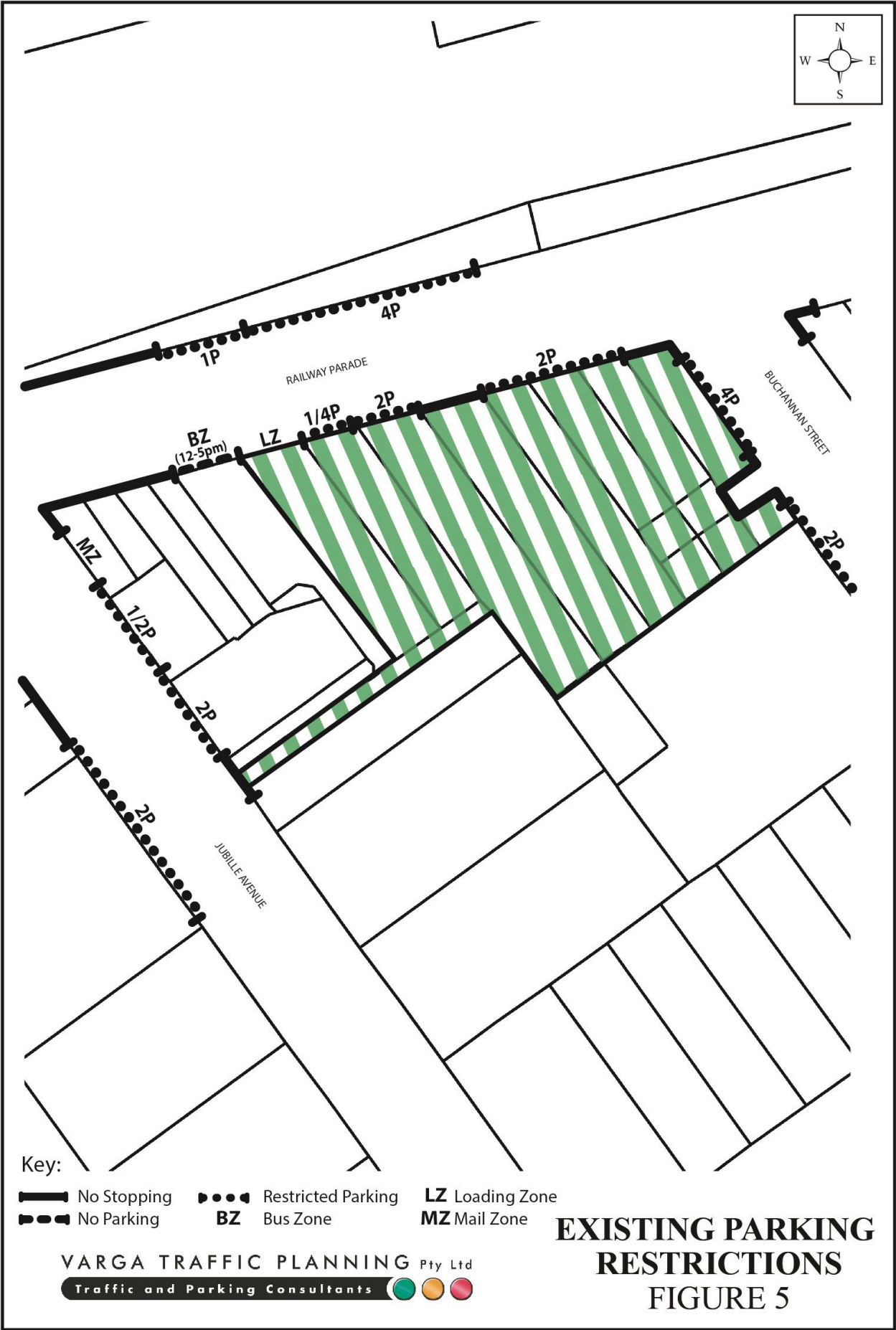
Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 5. Key features of those parking restrictions are:

- 2 HOUR PARKING / ¼ HOUR PARKING along the southern side of Railway Parade, in the vicinity of the site
- 4 HOUR PARKING / 1 HOUR PARKING along the northern side of Railway Parade, in the vicinity of the site
- a LOADING ZONE located on the southern side of Railway Parade, on the western portion of the site frontage
- BUS ZONES located at regular intervals along both sides of Railway Parade, including immediately west of the site frontage, between 12PM – 5PM
- ½ HOUR PARKING / 2 HOUR PARKING along both sides of Jubilee Avenue, in the vicinity of the Carlton Local Centre
- 4 HOUR PARKING / 2 HOUR PARKING along the western side of Buchanan Street, in the vicinity of the Carlton Local Centre
- generally UNRESTRICTED kerbside parking elsewhere along both sides of Jubilee Avenue, Buchanan Street and throughout the local area

Off-Street Car Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in Council's *Development Control Plan 2013: Part B4 – Parking and Traffic* document in the following terms:



Shop Top Housing/Mixed Use Development

| | |
|--|----------------------|
| 1 bedroom apartments: | 1 space per unit |
| 2 bedrooms apartments: | 1.5 spaces per unit |
| Visitors: | 1 space per 5 units* |
| *1 designated car wash bay which may also be a visitor space | |

Retail Premises – Shops

| |
|---|
| 1 space per 25m ² GLA |
| *Floor area >500m ² to 1,500m ² - 2 bays required |

Offices/commercial

| |
|---|
| 1 space per 40m ² GFA |
| *Floor area 1,000m ² to 5,000m ² - 1 bay required |

Application of the above parking requirements to the various components outlined in the development proposal yields an off-street parking requirement of 218 parking spaces as set out below:

| | |
|------------------------------------|---|
| Residential (50 apartments): | 65.0 spaces |
| Visitors: | 10.0 spaces (including a car wash bay) |
| Retail (888m ²): | 35.5 spaces |
| Commercial (4,132m ²): | 103.3 spaces |
| Loading Bay: | 3.0 spaces (including 2 courier spaces) |
| TOTAL: | 217.8 spaces |

Notwithstanding, the subject site is located approximately 100m walking distance of a railway station in the Sydney metropolitan area, and therefore the residential component of the development is also subject to the parking requirements specified in the *State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development (Amendment No 3), 2015* in the following terms:

30 Standards that cannot be used to refuse development consent or modification of development consent

- (1) If an application for the modification of a development consent or a development application for the carrying out of development to which this Policy applies satisfies the following design criteria, the consent authority must not refuse the application because of those matters:
 - a) if the car parking for the building will be equal to, or greater than, the recommended minimum amount of car parking specified in Part 3J of the Apartment Design Guide.

Reference is therefore made to the *Apartment Design Guide 2015, Section 3J – Bicycle and Car Parking* document which nominates the following car parking requirements:

Objective 3J-1

Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas

For development in the following locations:

- on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or
- on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre

the minimum car parking requirements for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less.

The car parking needs for a development must be provided off street.

Comparison therefore needs to be drawn between the off-street car parking requirements for residential flat buildings outlined in the Council's *DCP 2013* and also the *RMS Guidelines* to determine the *lesser* requirement. The relevant car parking rates outlined in the *RMS Guidelines* are reproduced below:

RMS Guidelines – High Density Residential Flat Buildings in Metropolitan Sub-Regional Centres

0.6 spaces per 1 bedroom unit

0.9 spaces per 2 bedroom unit

1 space per 5 units for visitor parking

Accordingly, the minimum off-street car parking requirement applicable to the residential component of the development is 49 spaces, comprising 39 residential spaces and 10 visitor spaces, as set out below:

| | Kogarah DCP 2013 | RMS Guidelines |
|--|-------------------------|-----------------------|
| Residents: | 65 spaces | 39 spaces |
| Visitors: | 10 spaces | 10 spaces |
| Total: | 75 spaces | 49 spaces |
| Lesser car parking requirement: 49 spaces | | |

The total minimum off-street parking requirement applicable to the proposed development is therefore 188 spaces as set out below:

Minimum Off-Street Parking Requirement

| | |
|------------------------------------|--|
| Residential (50 apartments): | 39.0 spaces (RMS) |
| Visitors: | 10.0 spaces (RMS/DCP – including a car wash bay) |
| Retail (888m ²): | 35.5 spaces (DCP) |
| Commercial (4,132m ²): | 103.3 spaces (DCP – including 2 courier bays) |
| TOTAL: | 187.8 spaces |

The proposed development makes provision for a total of 207 off-street car parking spaces, comprising 57 residential spaces, 10 residential visitor spaces (including a shared car wash bay), 105 commercial spaces (including 2 courier bays) and 35 retail spaces, thereby satisfying both Council's parking requirement for the commercial component, and the *SEPP* 65 parking requirements for the residential component of the development proposal.

The geometric design layout of the proposed car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6* in respect of ramp gradients and widths, parking bay dimensions, aisle widths and overhead clearances.

Furthermore, it is noted that the residential car parking areas have been separated from the commercial/retail parking spaces, with all retail spaces provided at-grade, in accordance with Council's *DCP* requirements.

Off-Street Bicycle Parking Provisions

The off-street bicycle parking requirements applicable to the development proposal are also specified in Council's *Development Control Plan 2013 – Part B4 –Parking and Traffic* document in the following terms:

Residential

| | |
|------------|--------------------------|
| Residents: | 1 space per 3 dwellings |
| Visitors: | 1 space per 10 dwellings |

Commercial

1 space per 5 car parking spaces

Application of the above bicycle parking requirements to the 50 residential apartments and 140 commercial/retail parking spaces outlined in the development proposal yields an off-street bicycle parking requirement of 50 spaces.

The proposed development makes provision for a total of 104 off-street bicycle parking spaces located across the basement levels, thereby *comfortably* satisfying Council's bicycle parking requirements.

Loading/Service Provisions

The proposed development is expected to be serviced by a variety of light commercial vehicles such as white vans and utilities, and trucks up to and including 6.4m long SRV trucks.

A temporary loading bay area is proposed in Stage 1 adjacent the bin holding area, which will be capable of accommodating a 6.4m long SRV truck. Once Stage 2 is completed, the service area will be relocated between the two buildings, near the garbage room areas for both buildings.

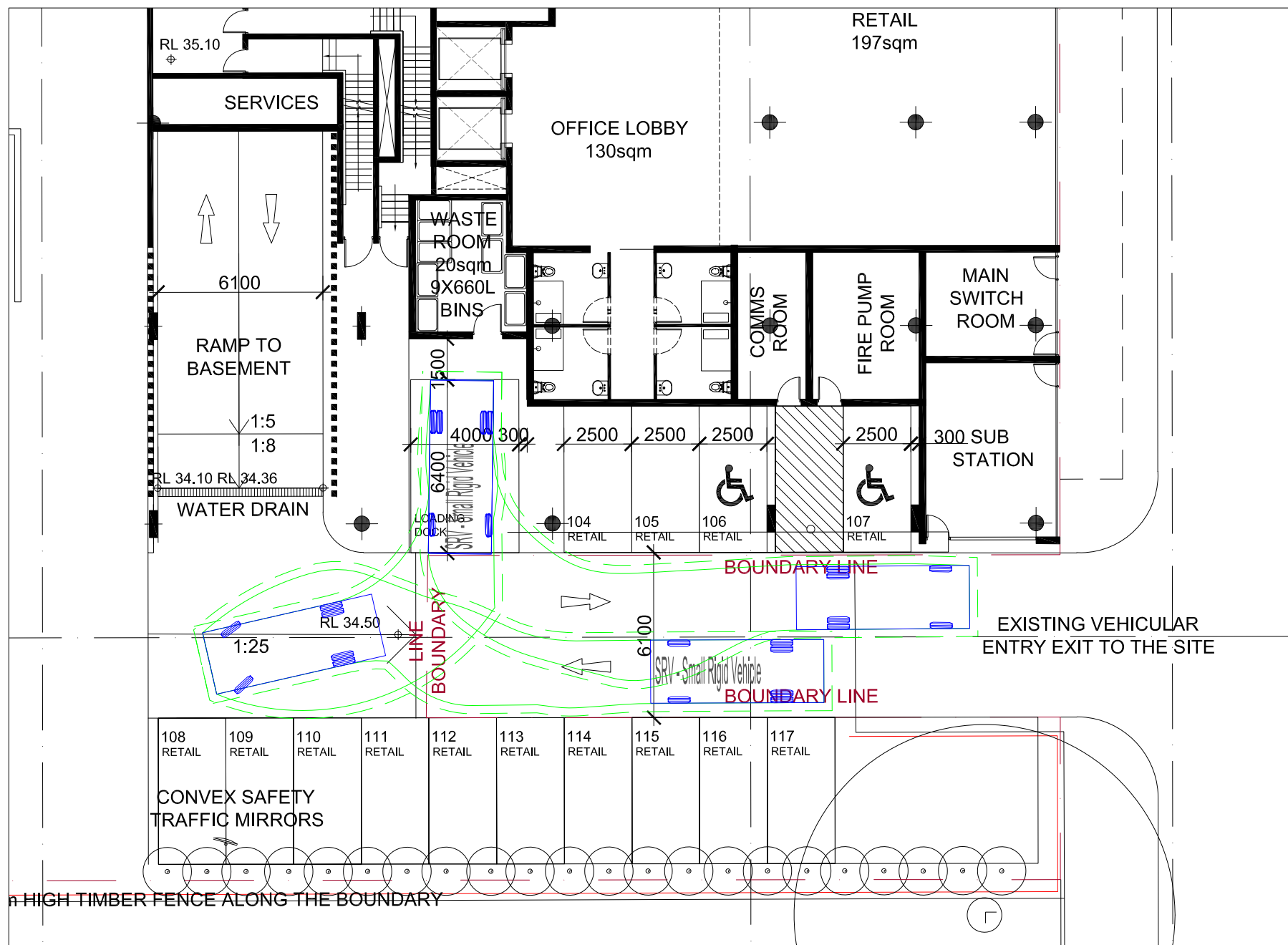
The manoeuvring areas has been designed to accommodate the swept turning path requirements of these service vehicles, allowing them to enter and exit the site whilst travelling in a forward direction at all times as demonstrated by the attached *swept turning path* diagrams.

The geometric design layout of the proposed upper parking level loading facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of loading bay dimensions, overhead clearances and service area requirements for the SRV trucks.

In summary, the proposed parking facilities satisfy the relevant requirements specified in both Council's *DCP 2013* as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking implications.

BUCHANAN

S



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www.vargatrafic.com.au
Sydney, Australia

PROJECT
MIXED USE DEVELOPMENT



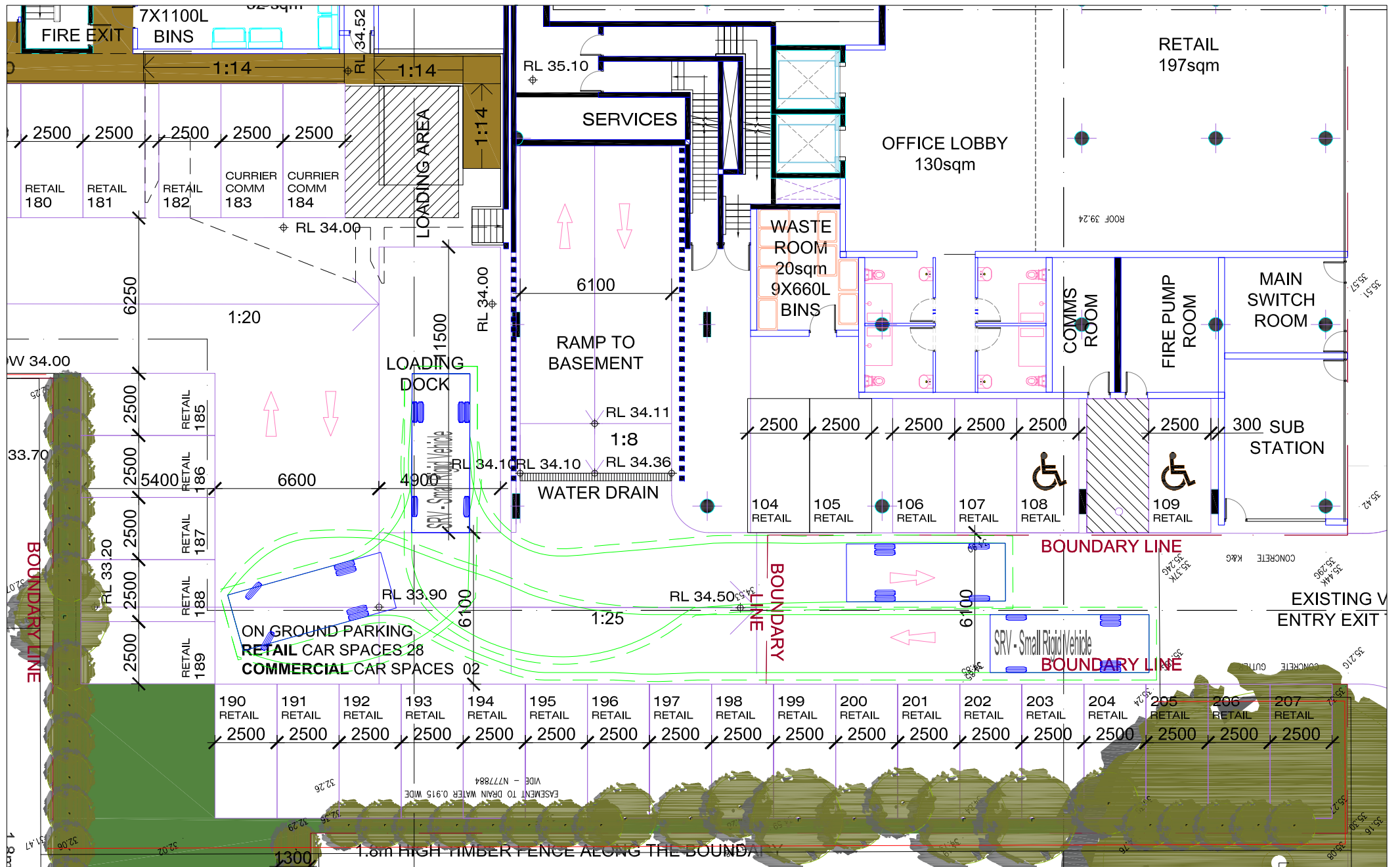
DRAWING TITLE
6.4M SRV TRUCK TURNING PATH - STAGE 1
Entering / Exiting Loading Bay Area
ADDRESS
280-298 Railway Parade, Carlton

PROJECT NO.
18516
REVIEWED
CHRIS PALMER

1:200 @ A4
DATE DRAWN
2020-8-28
PREPARED
DONALD LEE

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants





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 www.vargatrafic.com.au
 Sydney, Australia

PROJECT
 MIXED USE DEVELOPMENT



DRAWING TITLE
 6.4M SRV TRUCK TURNING PATH - STAGE 2
 Entering / Exiting Loading Bay Area
 ADDRESS
 280-298 Railway Parade, Carlton

PROJECT NO.
 18516
 REVIEWED
 CHRIS PALMER

1:200 @ A4
 DATE DRAWN
 2020-8-28
 PREPARED
 DONALD LEE

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APPENDIX A

TRAFFIC SURVEY DATA



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mobile.0418239019

Client : Varga Traffic Planning
 Job No/Name : 7155 CARLTON 298 Railway Pde
 Day/Date : Thursday / 8th August 2019

| <u>PEDS</u> | WEST | SOUTH | EAST | |
|-------------|-------------|-------------|-------------|-----|
| Time Per | Railway Pde | Buchanan St | Railway Pde | TOT |
| 0630 - 0645 | 1 | 9 | 0 | 10 |
| 0645 - 0700 | 6 | 14 | 0 | 20 |
| 0700 - 0715 | 2 | 15 | 1 | 18 |
| 0715 - 0730 | 4 | 22 | 0 | 26 |
| 0730 - 0745 | 6 | 21 | 6 | 33 |
| 0745 - 0800 | 1 | 19 | 4 | 24 |
| 0800 - 0815 | 3 | 16 | 0 | 19 |
| 0815 - 0830 | 2 | 18 | 0 | 20 |
| 0830 - 0845 | 0 | 24 | 2 | 26 |
| 0845 - 0900 | 2 | 10 | 0 | 12 |
| 0900 - 0915 | 2 | 19 | 0 | 21 |
| 0915 - 0930 | 2 | 13 | 0 | 15 |
| Per End | 31 | 200 | 13 | 244 |

| <u>PEDS</u> | WEST | SOUTH | EAST | |
|-------------|-------------|-------------|-------------|-----|
| Peak Per | Railway Pde | Buchanan St | Railway Pde | TOT |
| 0630 - 0730 | 13 | 60 | 1 | 74 |
| 0645 - 0745 | 18 | 72 | 7 | 97 |
| 0700 - 0800 | 13 | 77 | 11 | 101 |
| 0715 - 0815 | 14 | 78 | 10 | 102 |
| 0730 - 0830 | 12 | 74 | 10 | 96 |
| 0745 - 0845 | 6 | 77 | 6 | 89 |
| 0800 - 0900 | 7 | 68 | 2 | 77 |
| 0815 - 0915 | 6 | 71 | 2 | 79 |
| 0830 - 0930 | 6 | 66 | 2 | 74 |
| PEAK HR | 6 | 77 | 6 | 89 |

| <u>Lights</u> | WEST | | SOUTH | | EAST | | |
|---------------|-------------|----|-------------|----|-------------|------|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 153 | 1 | 1 | 0 | 0 | 49 | 204 |
| 0645 - 0700 | 176 | 1 | 2 | 2 | 3 | 42 | 226 |
| 0700 - 0715 | 198 | 4 | 0 | 1 | 0 | 51 | 254 |
| 0715 - 0730 | 200 | 2 | 2 | 3 | 1 | 64 | 272 |
| 0730 - 0745 | 220 | 1 | 0 | 0 | 6 | 109 | 336 |
| 0745 - 0800 | 265 | 2 | 2 | 3 | 2 | 68 | 342 |
| 0800 - 0815 | 278 | 4 | 2 | 1 | 2 | 92 | 379 |
| 0815 - 0830 | 268 | 1 | 2 | 6 | 5 | 103 | 385 |
| 0830 - 0845 | 219 | 3 | 3 | 5 | 5 | 125 | 360 |
| 0845 - 0900 | 201 | 5 | 2 | 0 | 3 | 104 | 315 |
| 0900 - 0915 | 212 | 2 | 3 | 1 | 3 | 107 | 328 |
| 0915 - 0930 | 190 | 3 | 2 | 2 | 4 | 88 | 289 |
| Per End | 2580 | 29 | 21 | 24 | 34 | 1002 | 3690 |

| <u>Heavies</u> | WEST | | SOUTH | | EAST | | |
|----------------|-------------|---|-------------|---|-------------|---|-----|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0645 - 0700 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0700 - 0715 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 0715 - 0730 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0730 - 0745 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0745 - 0800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0815 - 0830 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0830 - 0845 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0845 - 0900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0900 - 0915 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0915 - 0930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Per End | 7 | 0 | 0 | 0 | 1 | 3 | 11 |

| <u>Combined</u> | WEST | | SOUTH | | EAST | | |
|-----------------|-------------|----|-------------|----|-------------|------|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 154 | 1 | 1 | 0 | 0 | 50 | 206 |
| 0645 - 0700 | 177 | 1 | 2 | 2 | 3 | 42 | 227 |
| 0700 - 0715 | 198 | 4 | 0 | 1 | 1 | 52 | 256 |
| 0715 - 0730 | 201 | 2 | 2 | 3 | 1 | 64 | 273 |
| 0730 - 0745 | 221 | 1 | 0 | 0 | 6 | 109 | 337 |
| 0745 - 0800 | 265 | 2 | 2 | 3 | 2 | 68 | 342 |
| 0800 - 0815 | 278 | 4 | 2 | 1 | 2 | 92 | 379 |
| 0815 - 0830 | 268 | 1 | 2 | 6 | 5 | 104 | 386 |
| 0830 - 0845 | 220 | 3 | 3 | 5 | 5 | 125 | 361 |
| 0845 - 0900 | 201 | 5 | 2 | 0 | 3 | 104 | 315 |
| 0900 - 0915 | 214 | 2 | 3 | 1 | 3 | 107 | 330 |
| 0915 - 0930 | 190 | 3 | 2 | 2 | 4 | 88 | 289 |
| Per End | 2587 | 29 | 21 | 24 | 35 | 1005 | 3701 |

| <u>Lights</u> | WEST | | SOUTH | | EAST | | |
|---------------|-------------|----|-------------|----|-------------|-----|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 727 | 8 | 5 | 6 | 4 | 206 | 956 |
| 0645 - 0745 | 794 | 8 | 4 | 6 | 10 | 266 | 1088 |
| 0700 - 0800 | 883 | 9 | 4 | 7 | 9 | 292 | 1204 |
| 0715 - 0815 | 963 | 9 | 6 | 7 | 11 | 333 | 1329 |
| 0730 - 0830 | 1031 | 8 | 6 | 10 | 15 | 372 | 1442 |
| 0745 - 0845 | 1030 | 10 | 9 | 15 | 14 | 388 | 1466 |
| 0800 - 0900 | 966 | 13 | 9 | 12 | 15 | 424 | 1439 |
| 0815 - 0915 | 900 | 11 | 10 | 12 | 16 | 439 | 1388 |
| 0830 - 0930 | 822 | 13 | 10 | 8 | 15 | 424 | 1292 |

| <u>Heavies</u> | WEST | | SOUTH | | EAST | | |
|----------------|-------------|---|-------------|---|-------------|---|-----|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 3 | 0 | 0 | 0 | 1 | 2 | 6 |
| 0645 - 0745 | 3 | 0 | 0 | 0 | 1 | 1 | 5 |
| 0700 - 0800 | 2 | 0 | 0 | 0 | 1 | 1 | 4 |
| 0715 - 0815 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 0730 - 0830 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0745 - 0845 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0800 - 0900 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0815 - 0915 | 3 | 0 | 0 | 0 | 0 | 1 | 4 |
| 0830 - 0930 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |

| <u>Combined</u> | WEST | | SOUTH | | EAST | | |
|-----------------|-------------|----|-------------|----|-------------|-----|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 730 | 8 | 5 | 6 | 5 | 208 | 962 |
| 0645 - 0745 | 797 | 8 | 4 | 6 | 11 | 267 | 1093 |
| 0700 - 0800 | 885 | 9 | 4 | 7 | 10 | 293 | 1208 |
| 0715 - 0815 | 965 | 9 | 6 | 7 | 11 | 333 | 1331 |
| 0730 - 0830 | 1032 | 8 | 6 | 10 | 15 | 373 | 1444 |
| 0745 - 0845 | 1031 | 10 | 9 | 15 | 14 | 389 | 1468 |
| 0800 - 0900 | 967 | 13 | 9 | 12 | 15 | 425 | 1441 |
| 0815 - 0915 | 903 | 11 | 10 | 12 | 16 | 440 | 1392 |
| 0830 - 0930 | 825 | 13 | 10 | 8 | 15 | 424 | 1295 |

| | | | | | | | |
|---------|------|----|---|----|----|-----|------|
| PEAK HR | 1030 | 10 | 9 | 15 | 14 | 388 | 1466 |
|---------|------|----|---|----|----|-----|------|

| | | | | | | | |
|---------|---|---|---|---|---|---|---|
| PEAK HR | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
|---------|---|---|---|---|---|---|---|

| | | | | | | | |
|---------|------|----|---|----|----|-----|------|
| PEAK HR | 1031 | 10 | 9 | 15 | 14 | 389 | 1468 |
|---------|------|----|---|----|----|-----|------|



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

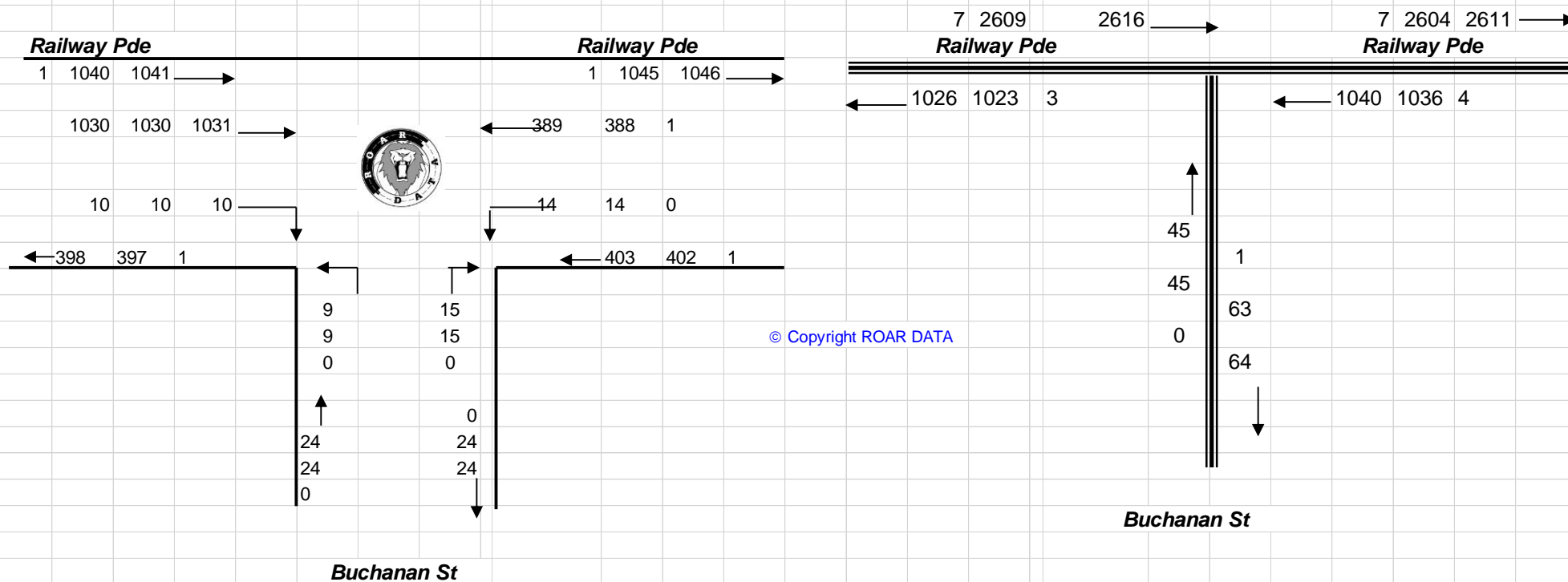
Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

AM PEAK
0745 - 0845



**TOTAL VOLUMES
FOR COUNT
PERIOD**





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| Lights | WEST | | SOUTH | | EAST | | | Heavies | WEST | | SOUTH | | EAST | | | Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|----|-------------|----|-------------|------|------|-------------|-------------|---|-------------|---|-------------|---|-----|-------------|-------------|----|-------------|----|-------------|------|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | | | Railway Pde | | Buchanan St | | Railway Pde | | | | Railway Pde | | Buchanan St | | Railway Pde | | |
| Time Per | T | R | L | R | L | T | TOT | Time Per | T | R | L | R | L | T | TOT | Time Per | T | R | L | R | L | T | TOT |
| 1430 - 1445 | 142 | 1 | 0 | 2 | 6 | 137 | 288 | 1430 - 1445 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1430 - 1445 | 142 | 1 | 0 | 2 | 6 | 137 | 288 |
| 1445 - 1500 | 174 | 2 | 3 | 1 | 4 | 151 | 335 | 1445 - 1500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1445 - 1500 | 174 | 2 | 3 | 1 | 4 | 151 | 335 |
| 1500 - 1515 | 144 | 5 | 4 | 0 | 4 | 169 | 326 | 1500 - 1515 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1500 - 1515 | 145 | 5 | 4 | 0 | 4 | 169 | 327 |
| 1515 - 1530 | 170 | 5 | 8 | 2 | 9 | 193 | 387 | 1515 - 1530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1515 - 1530 | 170 | 5 | 8 | 2 | 9 | 193 | 387 |
| 1530 - 1545 | 128 | 1 | 2 | 2 | 9 | 184 | 326 | 1530 - 1545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1530 - 1545 | 128 | 1 | 2 | 2 | 9 | 184 | 326 |
| 1545 - 1600 | 115 | 3 | 1 | 1 | 6 | 147 | 273 | 1545 - 1600 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1545 - 1600 | 116 | 3 | 1 | 1 | 6 | 147 | 274 |
| 1600 - 1615 | 125 | 3 | 5 | 1 | 1 | 143 | 278 | 1600 - 1615 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1600 - 1615 | 125 | 3 | 5 | 1 | 1 | 144 | 279 |
| 1615 - 1630 | 131 | 3 | 3 | 0 | 4 | 161 | 302 | 1615 - 1630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1615 - 1630 | 131 | 3 | 3 | 0 | 4 | 161 | 302 |
| 1630 - 1645 | 118 | 0 | 0 | 1 | 5 | 151 | 275 | 1630 - 1645 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 1630 - 1645 | 119 | 0 | 0 | 1 | 5 | 153 | 278 |
| 1645 - 1700 | 135 | 1 | 3 | 4 | 5 | 164 | 312 | 1645 - 1700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1645 - 1700 | 135 | 1 | 3 | 4 | 5 | 164 | 312 |
| 1700 - 1715 | 133 | 4 | 5 | 1 | 5 | 169 | 317 | 1700 - 1715 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1700 - 1715 | 134 | 4 | 5 | 1 | 5 | 169 | 318 |
| 1715 - 1730 | 135 | 1 | 2 | 0 | 2 | 156 | 296 | 1715 - 1730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1715 - 1730 | 135 | 1 | 2 | 0 | 2 | 156 | 296 |
| 1730 - 1745 | 120 | 1 | 0 | 1 | 14 | 193 | 329 | 1730 - 1745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1730 - 1745 | 120 | 1 | 0 | 1 | 14 | 193 | 329 |
| 1745 - 1800 | 142 | 0 | 2 | 3 | 3 | 151 | 301 | 1745 - 1800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1745 - 1800 | 142 | 0 | 2 | 3 | 3 | 151 | 301 |
| 1800 - 1815 | 127 | 3 | 0 | 3 | 8 | 161 | 302 | 1800 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1800 - 1815 | 127 | 3 | 0 | 3 | 8 | 161 | 302 |
| 1815 - 1830 | 148 | 4 | 6 | 7 | 6 | 180 | 351 | 1815 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1815 - 1830 | 148 | 4 | 6 | 7 | 6 | 180 | 351 |
| Per End | 2187 | 37 | 44 | 29 | 91 | 2610 | 4998 | Per End | 4 | 0 | 0 | 0 | 0 | 3 | 7 | Per End | 2191 | 37 | 44 | 29 | 91 | 2613 | 5005 |

| Lights | WEST | | SOUTH | | EAST | | | Heavies | WEST | | SOUTH | | EAST | | | Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|----|-------------|----|-------------|-----|------|-------------|-------------|---|-------------|---|-------------|---|-----|-------------|-------------|----|-------------|----|-------------|-----|------|
| | Railway Pde | | Buchanan St | | Railway Pde | | | | Railway Pde | | Buchanan St | | Railway Pde | | | | Railway Pde | | Buchanan St | | Railway Pde | | |
| Peak Per | T | R | L | R | L | T | TOT | Peak Per | T | R | L | R | L | T | TOT | Peak Per | T | R | L | R | L | T | TOT |
| 1430 - 1530 | 630 | 13 | 15 | 5 | 23 | 650 | 1336 | 1430 - 1530 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1430 - 1530 | 631 | 13 | 15 | 5 | 23 | 650 | 1337 |
| 1445 - 1545 | 616 | 13 | 17 | 5 | 26 | 697 | 1374 | 1445 - 1545 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1445 - 1545 | 617 | 13 | 17 | 5 | 26 | 697 | 1375 |
| 1500 - 1600 | 557 | 14 | 15 | 5 | 28 | 693 | 1312 | 1500 - 1600 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1500 - 1600 | 559 | 14 | 15 | 5 | 28 | 693 | 1314 |
| 1515 - 1615 | 538 | 12 | 16 | 6 | 25 | 667 | 1264 | 1515 - 1615 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1515 - 1615 | 539 | 12 | 16 | 6 | 25 | 668 | 1266 |
| 1530 - 1630 | 499 | 10 | 11 | 4 | 20 | 635 | 1179 | 1530 - 1630 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1530 - 1630 | 500 | 10 | 11 | 4 | 20 | 636 | 1181 |
| 1545 - 1645 | 489 | 9 | 9 | 3 | 16 | 602 | 1128 | 1545 - 1645 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 1545 - 1645 | 491 | 9 | 9 | 3 | 16 | 605 | 1133 |
| 1600 - 1700 | 509 | 7 | 11 | 6 | 15 | 619 | 1167 | 1600 - 1700 | 1 | 0 | 0 | 0 | 0 | 3 | 4 | 1600 - 1700 | 510 | 7 | 11 | 6 | 15 | 622 | 1171 |
| 1615 - 1715 | 517 | 8 | 11 | 6 | 19 | 645 | 1206 | 1615 - 1715 | 2 | 0 | 0 | 0 | 0 | 2 | 4 | 1615 - 1715 | 519 | 8 | 11 | 6 | 19 | 647 | 1210 |
| 1630 - 1730 | 521 | 6 | 10 | 6 | 17 | 640 | 1200 | 1630 - 1730 | 2 | 0 | 0 | 0 | 0 | 2 | 4 | 1630 - 1730 | 523 | 6 | 10 | 6 | 17 | 642 | 1204 |
| 1645 - 1745 | 523 | 7 | 10 | 6 | 26 | 682 | 1254 | 1645 - 1745 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1645 - 1745 | 524 | 7 | 10 | 6 | 26 | 682 | 1255 |
| 1700 - 1800 | 530 | 6 | 9 | 5 | 24 | 669 | 1243 | 1700 - 1800 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1700 - 1800 | 531 | 6 | 9 | 5 | 24 | 669 | 1244 |
| 1715 - 1815 | 524 | 5 | 4 | 7 | 27 | 661 | 1228 | 1715 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1715 - 1815 | 524 | 5 | 4 | 7 | 27 | 661 | 1228 |
| 1730 - 1830 | 537 | 8 | 8 | 14 | 31 | 685 | 1283 | 1730 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1730 - 1830 | 537 | 8 | 8 | 14 | 31 | 685 | 1283 |
| PEAK HR | 616 | 13 | 17 | 5 | 26 | 697 | 1374 | PEAK HR | 1 | 0 | 0 | 0 | 0 | 0 | 1 | PEAK HR | 617 | 13 | 17 | 5 | 26 | 697 | 1375 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

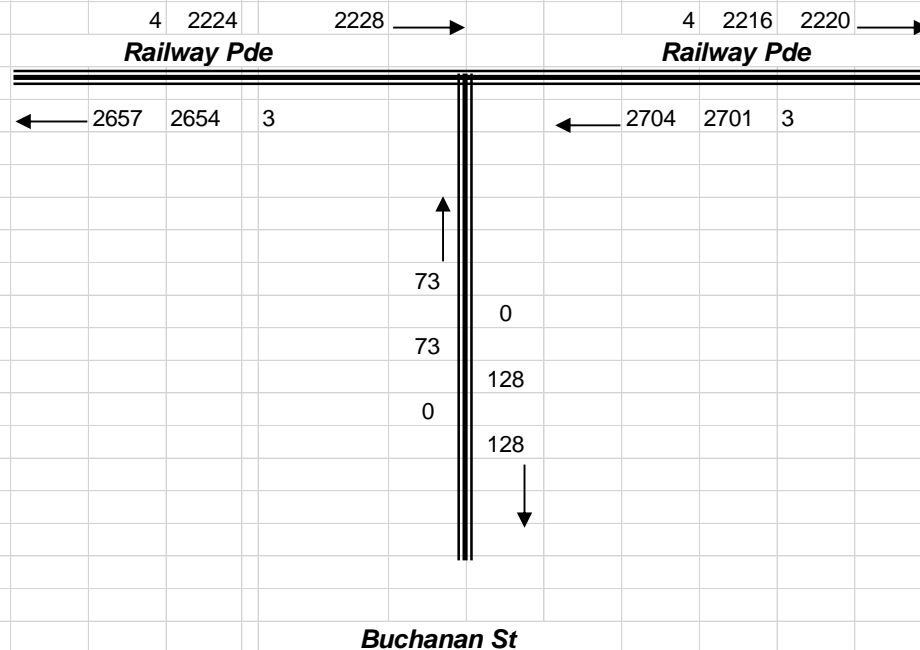
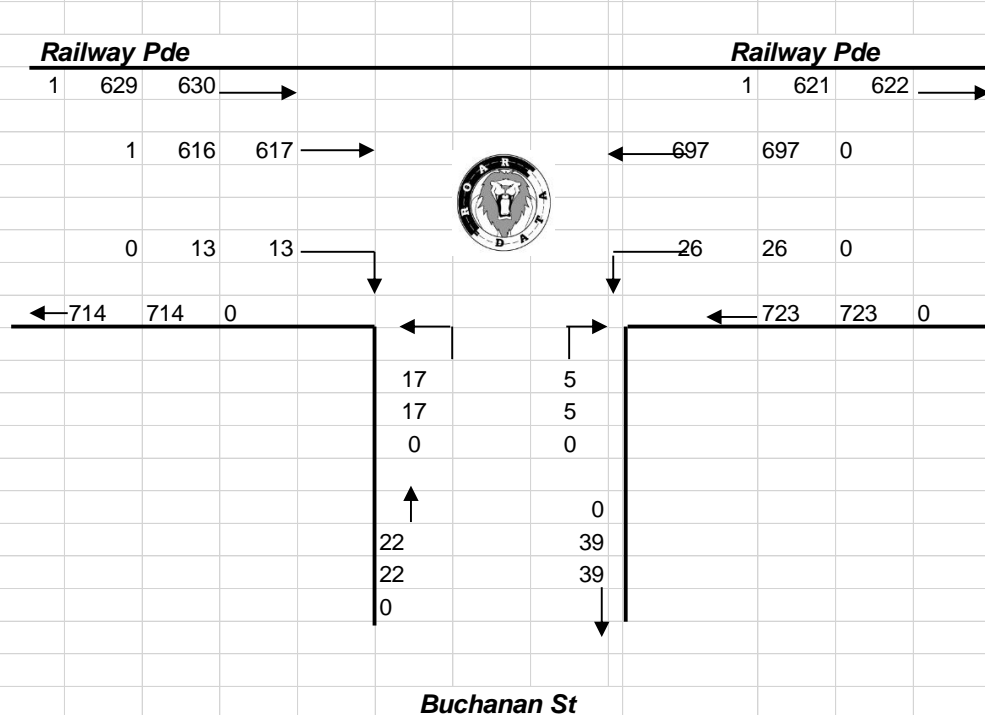
Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

PM PEAK HOUR
1445 - 1545



TOTAL VOLUMES
FOR COUNT
PERIOD





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 7155 CARLTON 298 Railway Pde

Day/Date : Thursday / 8th August 2019

PM PEAK HR

1445 - 1545

PEDS

| | WEST | SOUTH | EAST | | | WEST | SOUTH | EAST | |
|-------------|-------------|-------------|-------------|-----|-------------|-------------|-------------|-------------|-----|
| Time Per | Railway Pde | Buchanan St | Railway Pde | TOT | Peak Per | Railway Pde | Buchanan St | Railway Pde | TOT |
| 1430 - 1445 | 1 | 10 | 0 | 11 | 1430 - 1530 | 13 | 40 | 1 | 54 |
| 1445 - 1500 | 6 | 11 | 1 | 18 | 1445 - 1545 | 13 | 41 | 1 | 55 |
| 1500 - 1515 | 5 | 14 | 0 | 19 | 1500 - 1600 | 15 | 106 | 1 | 122 |
| 1515 - 1530 | 1 | 5 | 0 | 6 | 1515 - 1615 | 14 | 109 | 1 | 124 |
| 1530 - 1545 | 1 | 11 | 0 | 12 | 1530 - 1630 | 18 | 124 | 1 | 143 |
| 1545 - 1600 | 4 | 18 | 0 | 22 | 1545 - 1645 | 17 | 122 | 1 | 140 |
| 1600 - 1615 | 0 | 12 | 0 | 12 | 1600 - 1700 | 16 | 126 | 2 | 144 |
| 1615 - 1630 | 0 | 16 | 0 | 16 | 1615 - 1715 | 24 | 132 | 2 | 158 |
| 1630 - 1645 | 3 | 15 | 1 | 19 | 1630 - 1730 | 26 | 128 | 2 | 156 |
| 1645 - 1700 | 1 | 15 | 0 | 16 | 1645 - 1745 | 10 | 61 | 0 | 71 |
| 1700 - 1715 | 4 | 17 | 0 | 21 | 1700 - 1800 | 12 | 68 | 1 | 81 |
| 1715 - 1730 | 5 | 20 | 0 | 25 | 1715 - 1815 | 16 | 69 | 1 | 86 |
| 1730 - 1745 | 0 | 9 | 0 | 9 | 1730 - 1830 | 13 | 61 | 1 | 75 |
| 1745 - 1800 | 3 | 22 | 1 | 26 | | | | | |
| 1800 - 1815 | 8 | 18 | 0 | 26 | | | | | |
| 1815 - 1830 | 2 | 12 | 0 | 14 | | | | | |
| Per End | 44 | 225 | 3 | 272 | PEAK HR | 13 | 41 | 1 | 55 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

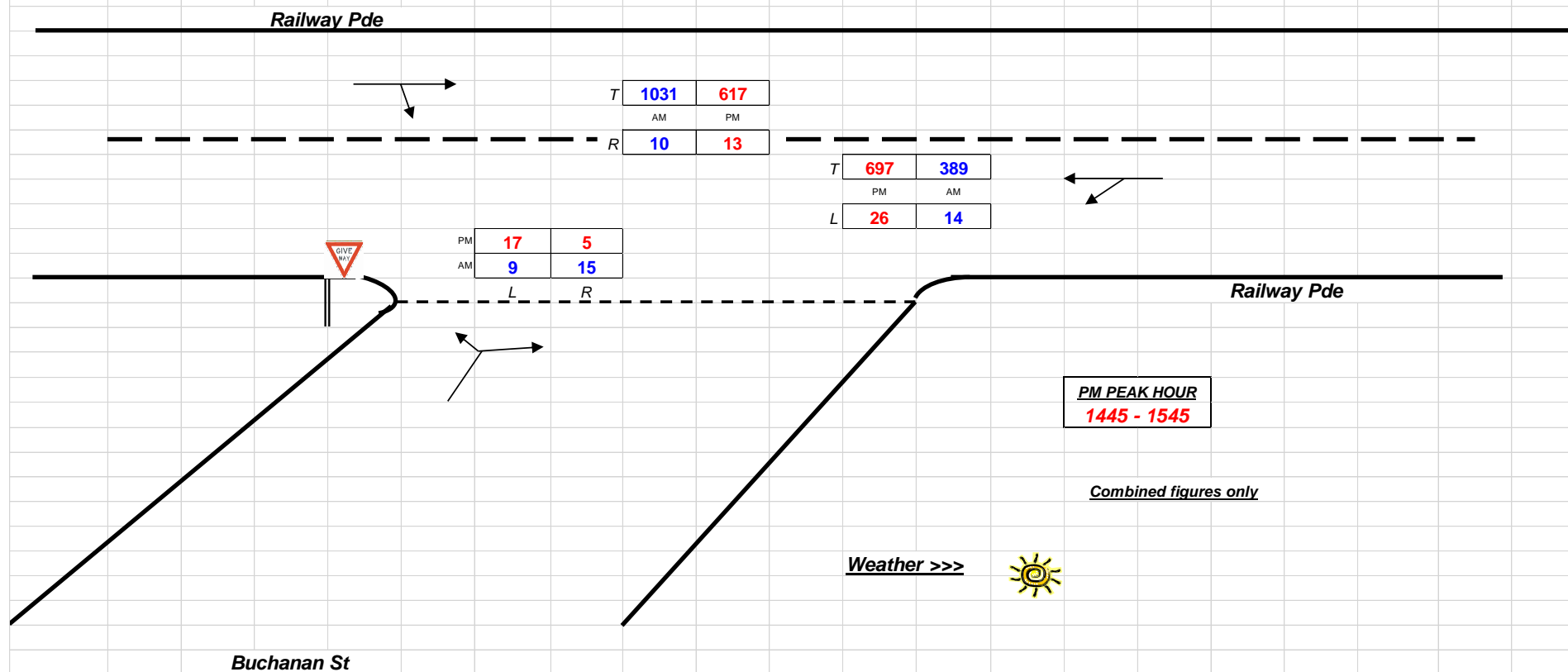
Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

Intersection Details

Obtained via satellite

May be incorrect

AM PEAK HOUR
0745 - 0845





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mobile.0418239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| PEDS | NORTH | WEST | SOUTH | |
|-------------|------------|------------|------------|-----|
| Time Per | English St | Hampton Ct | English St | TOT |
| 0630 - 0645 | 0 | 2 | 1 | 3 |
| 0645 - 0700 | 1 | 9 | 3 | 13 |
| 0700 - 0715 | 3 | 4 | 3 | 10 |
| 0715 - 0730 | 1 | 1 | 0 | 2 |
| 0730 - 0745 | 4 | 3 | 2 | 9 |
| 0745 - 0800 | 7 | 2 | 0 | 9 |
| 0800 - 0815 | 4 | 4 | 3 | 11 |
| 0815 - 0830 | 6 | 5 | 2 | 13 |
| 0830 - 0845 | 2 | 3 | 2 | 7 |
| 0845 - 0900 | 1 | 0 | 0 | 1 |
| 0900 - 0915 | 3 | 2 | 1 | 6 |
| 0915 - 0930 | 1 | 4 | 2 | 7 |
| Per End | 33 | 39 | 19 | 91 |

| PEDS | NORTH | WEST | SOUTH | |
|-------------|------------|------------|------------|-----|
| Peak Per | English St | Hampton Ct | English St | TOT |
| 0630 - 0730 | 5 | 16 | 7 | 28 |
| 0645 - 0745 | 9 | 17 | 8 | 34 |
| 0700 - 0800 | 15 | 10 | 5 | 30 |
| 0715 - 0815 | 16 | 10 | 5 | 31 |
| 0730 - 0830 | 21 | 14 | 7 | 42 |
| 0745 - 0845 | 19 | 14 | 7 | 40 |
| 0800 - 0900 | 13 | 12 | 7 | 32 |
| 0815 - 0915 | 12 | 10 | 5 | 27 |
| 0830 - 0930 | 7 | 9 | 5 | 21 |
| PEAK HR | 7 | 9 | 5 | 21 |

| Lights | NORTH | | WEST | | SOUTH | | |
|-------------|------------|----|---------------|-----|------------|----|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Time Per | T | R | L | R | L | T | TOT |
| 0630 - 0645 | 15 | 0 | 0 | 4 | 0 | 0 | 19 |
| 0645 - 0700 | 14 | 5 | 0 | 6 | 1 | 3 | 29 |
| 0700 - 0715 | 13 | 2 | 1 | 7 | 0 | 5 | 28 |
| 0715 - 0730 | 4 | 0 | 1 | 4 | 0 | 3 | 12 |
| 0730 - 0745 | 14 | 0 | 1 | 9 | 1 | 5 | 30 |
| 0745 - 0800 | 17 | 3 | 2 | 9 | 2 | 5 | 38 |
| 0800 - 0815 | 15 | 1 | 0 | 12 | 4 | 8 | 40 |
| 0815 - 0830 | 15 | 3 | 2 | 12 | 2 | 8 | 42 |
| 0830 - 0845 | 17 | 2 | 0 | 8 | 1 | 8 | 36 |
| 0845 - 0900 | 21 | 5 | 1 | 13 | 4 | 11 | 55 |
| 0900 - 0915 | 19 | 2 | 1 | 11 | 3 | 4 | 40 |
| 0915 - 0930 | 20 | 1 | 2 | 10 | 3 | 8 | 44 |
| Per End | 184 | 24 | 11 | 105 | 21 | 68 | 413 |

| Heavies | NORTH | | WEST | | SOUTH | | |
|-------------|------------|---|---------------|---|------------|---|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Time Per | T | R | L | R | L | T | TOT |
| 0630 - 0645 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0645 - 0700 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0700 - 0715 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 0715 - 0730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0730 - 0745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0745 - 0800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0815 - 0830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0830 - 0845 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0845 - 0900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0900 - 0915 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0915 - 0930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Per End | 1 | 0 | 0 | 1 | 0 | 1 | 3 |

| Combined | NORTH | | WEST | | SOUTH | | |
|-------------|------------|----|---------------|-----|------------|----|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Time Per | T | R | L | R | L | T | TOT |
| 0630 - 0645 | 15 | 0 | 0 | 4 | 0 | 0 | 19 |
| 0645 - 0700 | 15 | 5 | 0 | 6 | 1 | 3 | 30 |
| 0700 - 0715 | 13 | 2 | 1 | 8 | 0 | 6 | 30 |
| 0715 - 0730 | 4 | 0 | 1 | 4 | 0 | 3 | 12 |
| 0730 - 0745 | 14 | 0 | 1 | 9 | 1 | 5 | 30 |
| 0745 - 0800 | 17 | 3 | 2 | 9 | 2 | 5 | 38 |
| 0800 - 0815 | 15 | 1 | 0 | 12 | 4 | 8 | 40 |
| 0815 - 0830 | 15 | 3 | 2 | 12 | 2 | 8 | 42 |
| 0830 - 0845 | 17 | 2 | 0 | 8 | 1 | 8 | 36 |
| 0845 - 0900 | 21 | 5 | 1 | 13 | 4 | 11 | 55 |
| 0900 - 0915 | 19 | 2 | 1 | 11 | 3 | 4 | 40 |
| 0915 - 0930 | 20 | 1 | 2 | 10 | 3 | 8 | 44 |
| Per End | 185 | 24 | 11 | 106 | 21 | 69 | 416 |

| Lights | NORTH | | WEST | | SOUTH | | |
|-------------|------------|----|---------------|----|------------|----|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Peak Per | T | R | L | R | L | T | TOT |
| 0630 - 0730 | 46 | 7 | 2 | 21 | 1 | 11 | 88 |
| 0645 - 0745 | 45 | 7 | 3 | 26 | 2 | 16 | 99 |
| 0700 - 0800 | 48 | 5 | 5 | 29 | 3 | 18 | 108 |
| 0715 - 0815 | 50 | 4 | 4 | 34 | 7 | 21 | 120 |
| 0730 - 0830 | 61 | 7 | 5 | 42 | 9 | 26 | 150 |
| 0745 - 0845 | 64 | 9 | 4 | 41 | 9 | 29 | 156 |
| 0800 - 0900 | 68 | 11 | 3 | 45 | 11 | 35 | 173 |
| 0815 - 0915 | 72 | 12 | 4 | 44 | 10 | 31 | 173 |
| 0830 - 0930 | 77 | 10 | 4 | 42 | 11 | 31 | 175 |
| PEAK HR | 77 | 10 | 4 | 42 | 11 | 31 | 175 |

| Heavies | NORTH | | WEST | | SOUTH | | |
|-------------|------------|---|---------------|---|------------|---|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Peak Per | T | R | L | R | L | T | TOT |
| 0630 - 0730 | 1 | 0 | 0 | 1 | 0 | 1 | 3 |
| 0645 - 0745 | 1 | 0 | 0 | 1 | 0 | 1 | 3 |
| 0700 - 0800 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 0715 - 0815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0730 - 0830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0745 - 0845 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0815 - 0915 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0830 - 0930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PEAK HR | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Combined | NORTH | | WEST | | SOUTH | | |
|-------------|------------|----|---------------|----|------------|----|-----|
| | English St | | Hampton Ct Rd | | English St | | |
| Peak Per | T | R | L | R | L | T | TOT |
| 0630 - 0730 | 47 | 7 | 2 | 22 | 1 | 12 | 91 |
| 0645 - 0745 | 46 | 7 | 3 | 27 | 2 | 17 | 102 |
| 0700 - 0800 | 48 | 5 | 5 | 30 | 3 | 19 | 110 |
| 0715 - 0815 | 50 | 4 | 4 | 34 | 7 | 21 | 120 |
| 0730 - 0830 | 61 | 7 | 5 | 42 | 9 | 26 | 150 |
| 0745 - 0845 | 64 | 9 | 4 | 41 | 9 | 29 | 156 |
| 0800 - 0900 | 68 | 11 | 3 | 45 | 11 | 35 | 173 |
| 0815 - 0915 | 72 | 12 | 4 | 44 | 10 | 31 | 173 |
| 0830 - 0930 | 77 | 10 | 4 | 42 | 11 | 31 | 175 |
| PEAK HR | 77 | 10 | 4 | 42 | 11 | 31 | 175 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

AM PEAK
0830 - 0930

1

2

3

4

5

6

7

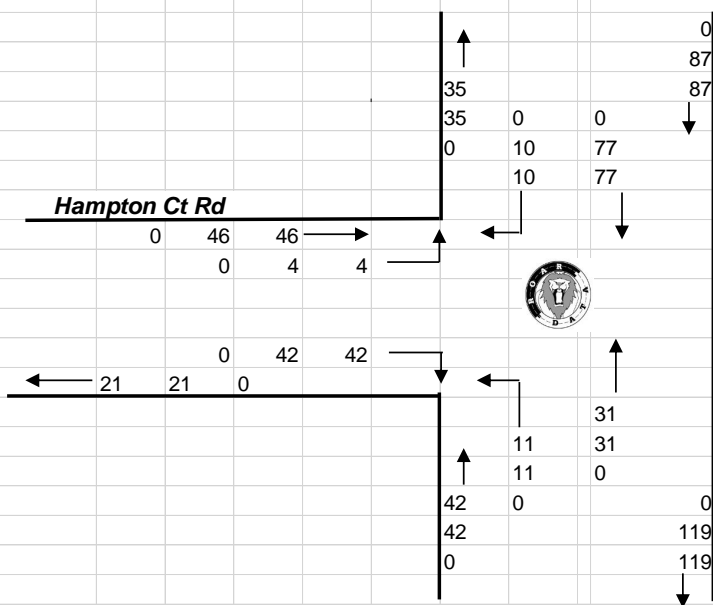
8

9

**TOTAL VOLUMES
FOR COUNT
PERIOD**

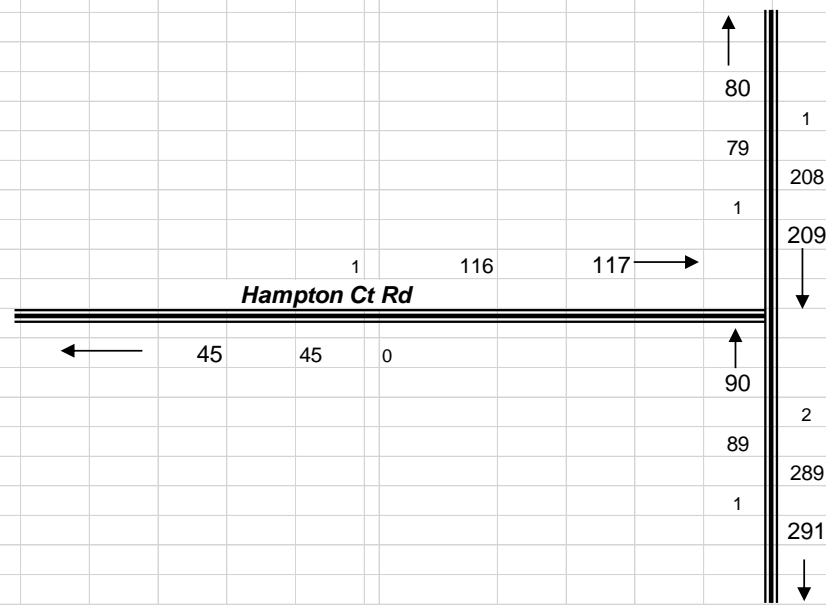


English St



English St

English St



English St



R.O.A.R. DATA
Reliable, Original & Authentic Results
 Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
 Job No/Name : 7155 CARLTON 298 Railway Pde
 Day/Date : Thursday / 8th August 2019

| <u>Lights</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|-----------------|-------------------|-----------|-------------------|------------|-------------------|------------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Time Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1445 | 15 | 1 | 1 | 10 | 1 | 10 | 38 |
| 1445 - 1500 | 28 | 8 | 0 | 10 | 1 | 6 | 53 |
| 1500 - 1515 | 15 | 6 | 0 | 6 | 3 | 7 | 37 |
| 1515 - 1530 | 14 | 6 | 0 | 6 | 2 | 5 | 33 |
| 1530 - 1545 | 20 | 4 | 0 | 4 | 5 | 3 | 36 |
| 1545 - 1600 | 19 | 5 | 0 | 5 | 0 | 6 | 35 |
| 1600 - 1615 | 24 | 7 | 1 | 6 | 3 | 10 | 51 |
| 1615 - 1630 | 23 | 8 | 0 | 5 | 3 | 8 | 47 |
| 1630 - 1645 | 22 | 3 | 0 | 7 | 2 | 9 | 43 |
| 1645 - 1700 | 19 | 10 | 1 | 14 | 5 | 5 | 54 |
| 1700 - 1715 | 22 | 11 | 3 | 12 | 2 | 9 | 59 |
| 1715 - 1730 | 27 | 2 | 0 | 6 | 3 | 3 | 41 |
| 1730 - 1745 | 21 | 6 | 2 | 4 | 3 | 8 | 44 |
| 1745 - 1800 | 22 | 7 | 4 | 1 | 2 | 6 | 42 |
| 1800 - 1815 | 16 | 6 | 0 | 16 | 3 | 6 | 47 |
| 1815 - 1830 | 14 | 8 | 1 | 2 | 1 | 5 | 31 |
| Per End | 321 | 98 | 13 | 114 | 39 | 106 | 691 |

| <u>Heavies</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|-----------------|-------------------|----------|-------------------|----------|-------------------|----------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Time Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1445 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1445 - 1500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1500 - 1515 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1515 - 1530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1530 - 1545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1545 - 1600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1600 - 1615 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1615 - 1630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1630 - 1645 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1645 - 1700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1700 - 1715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1715 - 1730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1730 - 1745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1745 - 1800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1800 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1815 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Per End | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| <u>Combined</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|-----------------|-------------------|-----------|-------------------|------------|-------------------|------------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Time Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1445 | 15 | 1 | 1 | 10 | 1 | 10 | 38 |
| 1445 - 1500 | 28 | 8 | 0 | 10 | 1 | 6 | 53 |
| 1500 - 1515 | 15 | 6 | 0 | 6 | 3 | 7 | 37 |
| 1515 - 1530 | 14 | 6 | 0 | 6 | 2 | 5 | 33 |
| 1530 - 1545 | 20 | 4 | 0 | 4 | 5 | 3 | 36 |
| 1545 - 1600 | 19 | 5 | 0 | 5 | 0 | 6 | 35 |
| 1600 - 1615 | 24 | 7 | 1 | 6 | 3 | 10 | 51 |
| 1615 - 1630 | 23 | 8 | 0 | 5 | 3 | 8 | 47 |
| 1630 - 1645 | 22 | 3 | 0 | 7 | 2 | 9 | 43 |
| 1645 - 1700 | 19 | 10 | 1 | 14 | 5 | 5 | 54 |
| 1700 - 1715 | 22 | 11 | 3 | 12 | 2 | 9 | 59 |
| 1715 - 1730 | 27 | 2 | 0 | 6 | 3 | 3 | 41 |
| 1730 - 1745 | 21 | 6 | 2 | 4 | 3 | 8 | 44 |
| 1745 - 1800 | 22 | 7 | 4 | 1 | 2 | 6 | 42 |
| 1800 - 1815 | 16 | 6 | 0 | 16 | 3 | 6 | 47 |
| 1815 - 1830 | 14 | 8 | 1 | 2 | 1 | 5 | 31 |
| Per End | 321 | 98 | 13 | 114 | 39 | 106 | 691 |

| <u>Lights</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|--------------------|-------------------|----------|-------------------|----------|-------------------|----------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Peak Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1530 | 72 | 21 | 1 | 32 | 7 | 28 | 161 |
| 1445 - 1545 | 77 | 24 | 0 | 26 | 11 | 21 | 159 |
| 1500 - 1600 | 68 | 21 | 0 | 21 | 10 | 21 | 141 |
| 1515 - 1615 | 77 | 22 | 1 | 21 | 10 | 24 | 155 |
| 1530 - 1630 | 86 | 24 | 1 | 20 | 11 | 27 | 169 |
| 1545 - 1645 | 88 | 23 | 1 | 23 | 8 | 33 | 176 |
| 1600 - 1700 | 88 | 28 | 2 | 32 | 13 | 32 | 195 |
| 1615 - 1715 | 86 | 32 | 4 | 38 | 12 | 31 | 203 |
| 1630 - 1730 | 90 | 26 | 4 | 39 | 12 | 26 | 197 |
| 1645 - 1745 | 89 | 29 | 6 | 36 | 13 | 25 | 198 |
| 1700 - 1800 | 92 | 26 | 9 | 23 | 10 | 26 | 186 |
| 1715 - 1815 | 86 | 21 | 6 | 27 | 11 | 23 | 174 |
| 1730 - 1830 | 73 | 27 | 7 | 23 | 9 | 25 | 164 |

| <u>Heavies</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|--------------------|-------------------|----------|-------------------|----------|-------------------|----------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Peak Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1445 - 1545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1500 - 1600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1515 - 1615 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1530 - 1630 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1545 - 1645 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1600 - 1700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1615 - 1715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1630 - 1730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1645 - 1745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1700 - 1800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1715 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1730 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| <u>Combined</u> | <u>NORTH</u> | | <u>WEST</u> | | <u>SOUTH</u> | | |
|--------------------|-------------------|----------|-------------------|----------|-------------------|----------|------------|
| | <u>English St</u> | | <u>Hampton Ct</u> | | <u>English St</u> | | |
| <u>Peak Per</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>TOT</u> |
| 1430 - 1530 | 72 | 21 | 1 | 32 | 7 | 28 | 161 |
| 1445 - 1545 | 77 | 24 | 0 | 26 | 11 | 21 | 159 |
| 1500 - 1600 | 68 | 21 | 0 | 21 | 10 | 21 | 141 |
| 1515 - 1615 | 77 | 22 | 1 | 21 | 10 | 24 | 155 |
| 1530 - 1630 | 86 | 24 | 1 | 20 | 11 | 27 | 169 |
| 1545 - 1645 | 88 | 23 | 1 | 23 | 8 | 33 | 176 |
| 1600 - 1700 | 88 | 28 | 2 | 32 | 13 | 32 | 195 |
| 1615 - 1715 | 86 | 32 | 4 | 38 | 12 | 31 | 203 |
| 1630 - 1730 | 90 | 26 | 4 | 39 | 12 | 26 | 197 |
| 1645 - 1745 | 89 | 29 | 6 | 36 | 13 | 25 | 198 |
| 1700 - 1800 | 92 | 26 | 9 | 23 | 10 | 26 | 186 |
| 1715 - 1815 | 86 | 21 | 6 | 27 | 11 | 23 | 174 |
| 1730 - 1830 | 73 | 27 | 7 | 23 | 9 | 25 | 164 |

| | | | | | | | |
|----------------|-----------|-----------|----------|-----------|-----------|-----------|------------|
| PEAK HR | 86 | 32 | 4 | 38 | 12 | 31 | 203 |
|----------------|-----------|-----------|----------|-----------|-----------|-----------|------------|

| | | | | | | | |
|----------------|----------|----------|----------|----------|----------|----------|----------|
| PEAK HR | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|----------------|----------|----------|----------|----------|----------|----------|----------|

| | | | | | | | |
|----------------|-----------|-----------|----------|-----------|-----------|-----------|------------|
| PEAK HR | 86 | 32 | 4 | 38 | 12 | 31 | 203 |
|----------------|-----------|-----------|----------|-----------|-----------|-----------|------------|



R.O.A.R. DATA

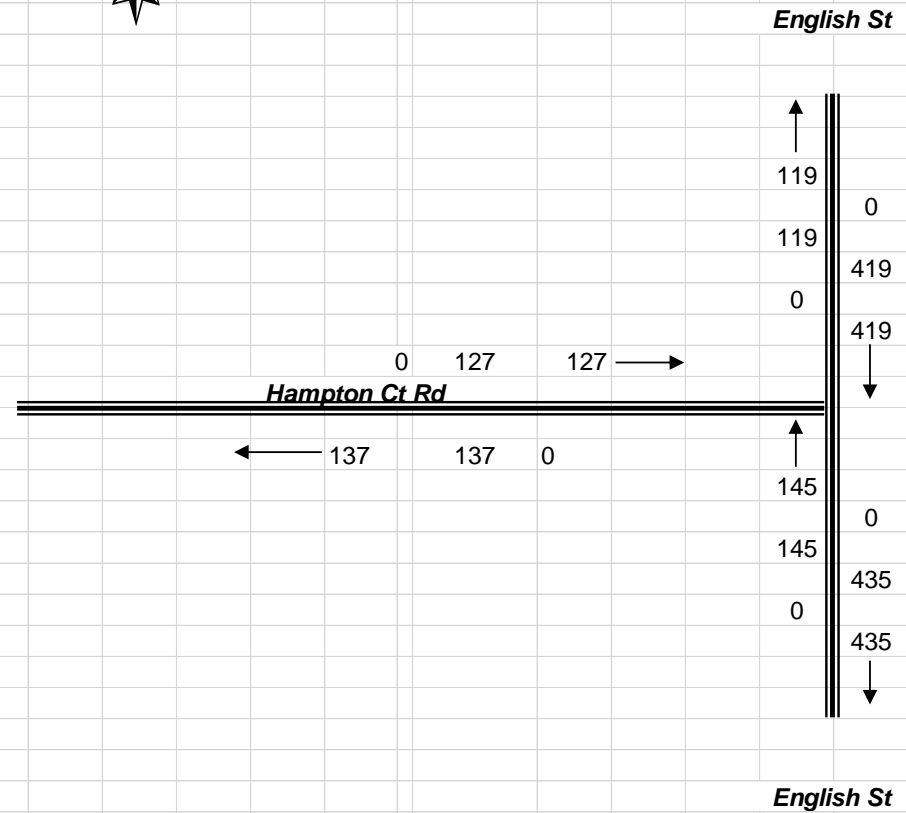
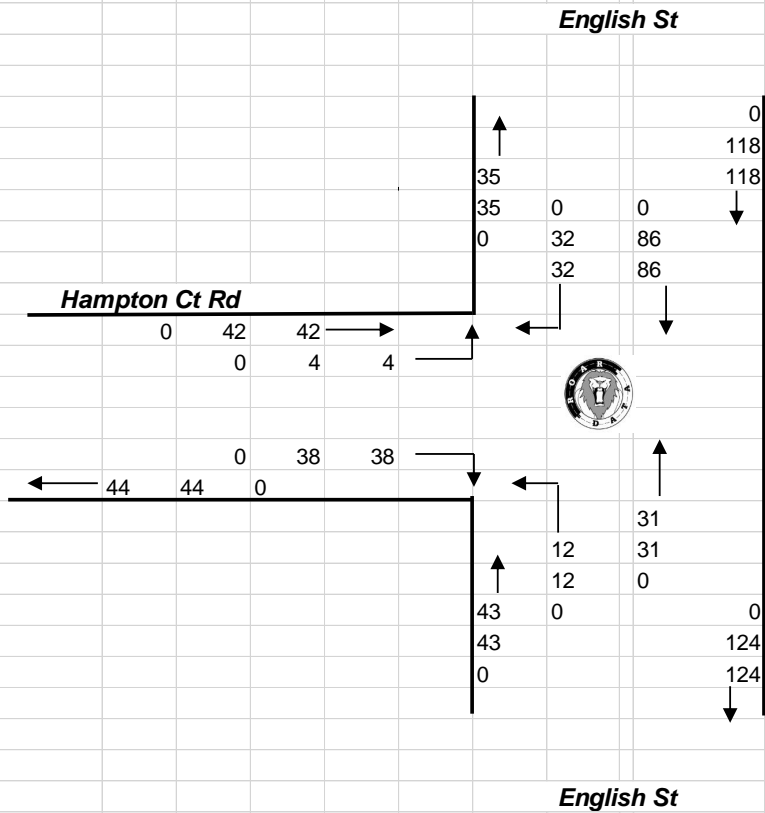
Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

PM PEAK HOUR
1615 - 1715

**TOTAL VOLUMES
FOR COUNT
PERIOD**





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 7155 CARLTON 298 Railway Pde

Day/Date : Thursday / 8th August 2019

PM PEAK HR

1615 - 1715

| <u>PEDS</u> | | | | | <u>PEDS</u> | | | | |
|----------------|----------------------------|---------------------------|----------------------------|-----------|--------------------|----------------------------|---------------------------|----------------------------|-----------|
| Time Per | NORTH <i>English St</i> | WEST <i>Hampton Ct</i> | SOUTH <i>English St</i> | TOT | Peak Per | NORTH <i>English St</i> | WEST <i>Hampton Ct</i> | SOUTH <i>English St</i> | TOT |
| 1430 - 1445 | 1 | 0 | 2 | 3 | 1430 - 1530 | 1 | 6 | 3 | 10 |
| 1445 - 1500 | 0 | 3 | 1 | 4 | 1445 - 1545 | 2 | 11 | 2 | 15 |
| 1500 - 1515 | 0 | 1 | 0 | 1 | 1500 - 1600 | 8 | 20 | 6 | 34 |
| 1515 - 1530 | 0 | 2 | 0 | 2 | 1515 - 1615 | 13 | 22 | 8 | 43 |
| 1530 - 1545 | 2 | 5 | 1 | 8 | 1530 - 1630 | 16 | 24 | 10 | 50 |
| 1545 - 1600 | 2 | 3 | 0 | 5 | 1545 - 1645 | 15 | 24 | 11 | 50 |
| 1600 - 1615 | 3 | 3 | 1 | 7 | 1600 - 1700 | 16 | 25 | 11 | 52 |
| 1615 - 1630 | 0 | 1 | 3 | 4 | 1615 - 1715 | 13 | 25 | 11 | 49 |
| 1630 - 1645 | 1 | 3 | 1 | 5 | 1630 - 1730 | 15 | 26 | 8 | 49 |
| 1645 - 1700 | 0 | 2 | 0 | 2 | 1645 - 1745 | 9 | 14 | 6 | 29 |
| 1700 - 1715 | 5 | 3 | 2 | 10 | 1700 - 1800 | 12 | 16 | 6 | 34 |
| 1715 - 1730 | 3 | 4 | 2 | 9 | 1715 - 1815 | 7 | 16 | 5 | 28 |
| 1730 - 1745 | 1 | 5 | 2 | 8 | 1730 - 1830 | 6 | 14 | 3 | 23 |
| 1745 - 1800 | 3 | 4 | 0 | 7 | | | | | |
| 1800 - 1815 | 0 | 3 | 1 | 4 | | | | | |
| 1815 - 1830 | 2 | 2 | 0 | 4 | | | | | |
| Per End | 23 | 44 | 16 | 83 | PEAK HR | 13 | 25 | 11 | 49 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

Intersection Details

Obtained via satellite

May be incorrect

AM PEAK HOUR
0830 - 0930



English St

Hampton Court Rd

| R | T | |
|----|----|----|
| 10 | 77 | AM |
| 32 | 86 | PM |

| L | AM | PM |
|---|----|----|
| 4 | 4 | |
| R | 42 | 38 |

| PM | 12 | 31 |
|----|----|----|
| AM | 11 | 31 |
| L | | T |

PM PEAK HOUR
1615 - 1715

Combined figures only

Weather >>>



English St



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

| Lights | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|------|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Time Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 0630 - 0645 | 0 | 35 | 0 | 7 | 4 | 6 | 4 | 43 | 0 | 1 | 0 | 0 | 100 |
| 0645 - 0700 | 0 | 28 | 4 | 6 | 5 | 5 | 10 | 65 | 2 | 3 | 1 | 2 | 131 |
| 0700 - 0715 | 0 | 33 | 1 | 14 | 2 | 7 | 14 | 77 | 0 | 3 | 4 | 2 | 157 |
| 0715 - 0730 | 1 | 49 | 2 | 17 | 7 | 8 | 14 | 87 | 3 | 1 | 1 | 0 | 190 |
| 0730 - 0745 | 2 | 47 | 4 | 14 | 7 | 8 | 17 | 78 | 2 | 4 | 3 | 0 | 186 |
| 0745 - 0800 | 1 | 32 | 6 | 23 | 11 | 13 | 19 | 134 | 4 | 7 | 1 | 0 | 251 |
| 0800 - 0815 | 1 | 21 | 3 | 24 | 7 | 4 | 17 | 117 | 1 | 2 | 1 | 1 | 199 |
| 0815 - 0830 | 2 | 52 | 3 | 34 | 10 | 11 | 23 | 155 | 9 | 8 | 6 | 1 | 314 |
| 0830 - 0845 | 1 | 34 | 3 | 10 | 5 | 6 | 7 | 61 | 5 | 7 | 1 | 0 | 140 |
| 0845 - 0900 | 3 | 53 | 5 | 19 | 10 | 15 | 12 | 91 | 5 | 5 | 7 | 3 | 228 |
| 0900 - 0915 | 6 | 50 | 2 | 23 | 8 | 14 | 14 | 74 | 5 | 7 | 3 | 1 | 207 |
| 0915 - 0930 | 3 | 49 | 3 | 10 | 7 | 9 | 10 | 77 | 5 | 8 | 6 | 0 | 187 |
| Period End | 20 | 483 | 36 | 201 | 83 | 106 | 161 | 1059 | 41 | 56 | 34 | 10 | 2290 |

| Heavies | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Time Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 0630 - 0645 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0645 - 0700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0700 - 0715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0715 - 0730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0730 - 0745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0745 - 0800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0815 - 0830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0830 - 0845 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0845 - 0900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0900 - 0915 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0915 - 0930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Period End | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |

| Combined | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|------|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Time Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 0630 - 0645 | 0 | 35 | 0 | 7 | 4 | 6 | 4 | 43 | 0 | 1 | 0 | 0 | 100 |
| 0645 - 0700 | 0 | 28 | 4 | 6 | 5 | 5 | 10 | 65 | 2 | 3 | 1 | 2 | 131 |
| 0700 - 0715 | 0 | 33 | 1 | 14 | 2 | 7 | 14 | 77 | 0 | 3 | 4 | 2 | 157 |
| 0715 - 0730 | 1 | 49 | 2 | 17 | 7 | 8 | 14 | 88 | 3 | 1 | 1 | 0 | 191 |
| 0730 - 0745 | 2 | 47 | 4 | 14 | 7 | 8 | 17 | 78 | 2 | 4 | 3 | 0 | 186 |
| 0745 - 0800 | 1 | 32 | 6 | 23 | 11 | 13 | 19 | 134 | 4 | 7 | 1 | 0 | 251 |
| 0800 - 0815 | 1 | 21 | 3 | 24 | 7 | 4 | 17 | 117 | 1 | 2 | 1 | 1 | 199 |
| 0815 - 0830 | 2 | 52 | 3 | 34 | 10 | 11 | 23 | 155 | 9 | 8 | 6 | 1 | 314 |
| 0830 - 0845 | 1 | 34 | 3 | 10 | 5 | 6 | 7 | 61 | 5 | 7 | 1 | 0 | 140 |
| 0845 - 0900 | 3 | 53 | 5 | 19 | 10 | 15 | 12 | 91 | 5 | 5 | 7 | 3 | 228 |
| 0900 - 0915 | 6 | 51 | 2 | 23 | 8 | 14 | 14 | 74 | 5 | 7 | 3 | 1 | 208 |
| 0915 - 0930 | 3 | 49 | 3 | 10 | 7 | 9 | 10 | 77 | 5 | 8 | 6 | 0 | 187 |
| Period End | 20 | 484 | 36 | 201 | 83 | 106 | 161 | 1060 | 41 | 56 | 34 | 10 | 2292 |

Client : Varga Traffic Planning
 Job No/Name : 7155 CARLTON 298 Railway Pde
 Day/Date : Thursday / 8th August 2019

| Lights | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Peak Time | <u>L</u> | <u>I</u> | <u>R</u> | <u>L</u> | <u>I</u> | <u>R</u> | <u>L</u> | <u>I</u> | <u>R</u> | <u>L</u> | <u>I</u> | <u>R</u> | TOT |
| 0630 - 0730 | 1 | 145 | 7 | 44 | 18 | 26 | 42 | 272 | 5 | 8 | 6 | 4 | 578 |
| 0645 - 0745 | 3 | 157 | 11 | 51 | 21 | 28 | 55 | 307 | 7 | 11 | 9 | 4 | 664 |
| 0700 - 0800 | 4 | 161 | 13 | 68 | 27 | 36 | 64 | 376 | 9 | 15 | 9 | 2 | 784 |
| 0715 - 0815 | 5 | 149 | 15 | 78 | 32 | 33 | 67 | 416 | 10 | 14 | 6 | 1 | 826 |
| 0730 - 0830 | 6 | 152 | 16 | 95 | 35 | 36 | 76 | 484 | 16 | 21 | 11 | 2 | 950 |
| 0745 - 0845 | 5 | 139 | 15 | 91 | 33 | 34 | 66 | 467 | 19 | 24 | 9 | 2 | 904 |
| 0800 - 0900 | 7 | 160 | 14 | 87 | 32 | 36 | 59 | 424 | 20 | 22 | 15 | 5 | 881 |
| 0815 - 0915 | 12 | 189 | 13 | 86 | 33 | 46 | 56 | 381 | 24 | 27 | 17 | 5 | 889 |
| 0830 - 0930 | 13 | 186 | 13 | 62 | 30 | 44 | 43 | 303 | 20 | 27 | 17 | 4 | 762 |
| | | | | | | | | | | | | | |
| PEAK HOUR | 6 | 152 | 16 | 95 | 35 | 36 | 76 | 484 | 16 | 21 | 11 | 2 | 950 |

| Heavies | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Peak Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 0630 - 0730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0645 - 0745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0700 - 0800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0715 - 0815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0730 - 0830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0745 - 0845 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0815 - 0915 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0830 - 0930 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | | | | | | | | | | | | |
| PEAK HOUR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Combined | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Peak Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 0630 - 0730 | 1 | 145 | 7 | 44 | 18 | 26 | 42 | 273 | 5 | 8 | 6 | 4 | 579 |
| 0645 - 0745 | 3 | 157 | 11 | 51 | 21 | 28 | 55 | 308 | 7 | 11 | 9 | 4 | 665 |
| 0700 - 0800 | 4 | 161 | 13 | 68 | 27 | 36 | 64 | 377 | 9 | 15 | 9 | 2 | 785 |
| 0715 - 0815 | 5 | 149 | 15 | 78 | 32 | 33 | 67 | 417 | 10 | 14 | 6 | 1 | 827 |
| 0730 - 0830 | 6 | 152 | 16 | 95 | 35 | 36 | 76 | 484 | 16 | 21 | 11 | 2 | 950 |
| 0745 - 0845 | 5 | 139 | 15 | 91 | 33 | 34 | 66 | 467 | 19 | 24 | 9 | 2 | 904 |
| 0800 - 0900 | 7 | 160 | 14 | 87 | 32 | 36 | 59 | 424 | 20 | 22 | 15 | 5 | 881 |
| 0815 - 0915 | 12 | 190 | 13 | 86 | 33 | 46 | 56 | 381 | 24 | 27 | 17 | 5 | 890 |
| 0830 - 0930 | 13 | 187 | 13 | 62 | 30 | 44 | 43 | 303 | 20 | 27 | 17 | 4 | 763 |
| | | | | | | | | | | | | | |
| PEAK HOUR | 6 | 152 | 16 | 95 | 35 | 36 | 76 | 484 | 16 | 21 | 11 | 2 | 950 |



R.O.A.R DATA

Reliable, Original & Authentic Results

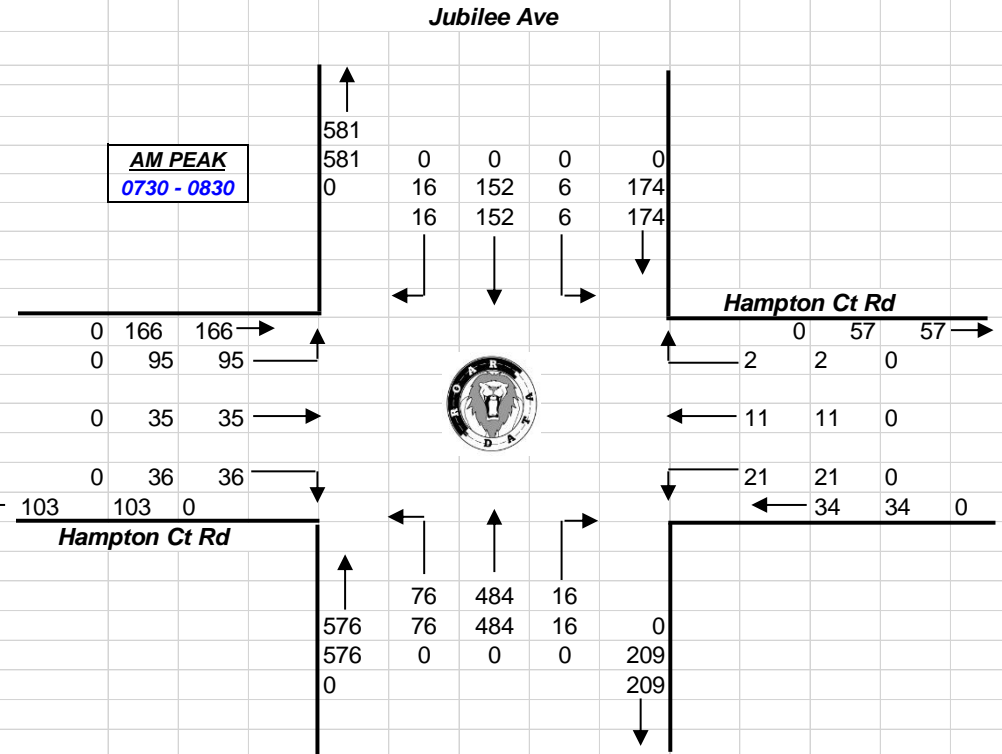
Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
 Job No/Name : 7155 CARLTON 298 Railway Pde
 Day/Date : Thursday / 8th August 2019

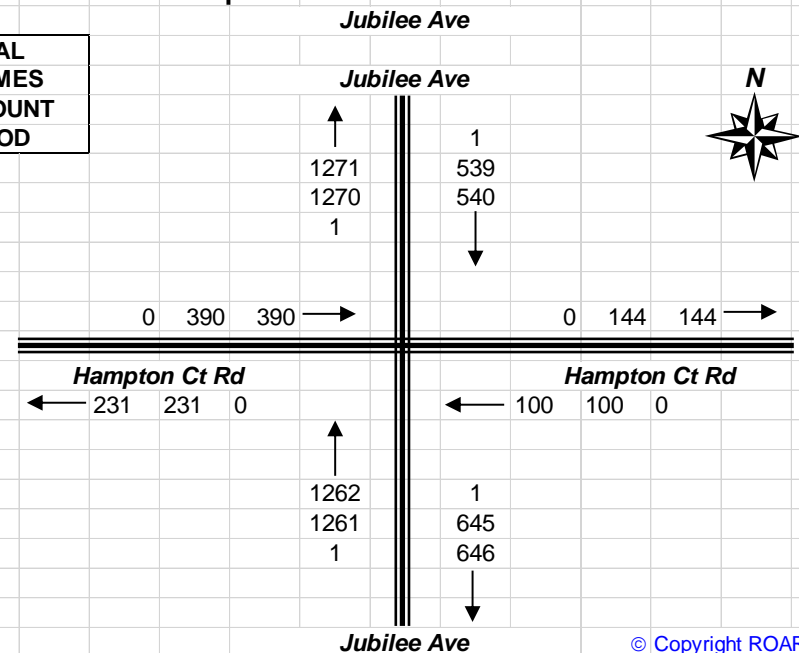
| Peds | NORTH | WEST | SOUTH | EAST | |
|-------------|--------------|---------------|--------------|---------------|-----|
| | Jubilee Ave | Hampton Ct Rd | Jubilee Ave | Hampton Ct Rd | |
| Time Per | UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | TOT |
| 0630 - 0645 | 0 | 3 | 0 | 2 | 5 |
| 0645 - 0700 | 0 | 18 | 3 | 1 | 22 |
| 0700 - 0715 | 1 | 12 | 0 | 4 | 17 |
| 0715 - 0730 | 0 | 17 | 0 | 4 | 21 |
| 0730 - 0745 | 0 | 23 | 0 | 6 | 29 |
| 0745 - 0800 | 1 | 20 | 1 | 16 | 38 |
| 0800 - 0815 | 2 | 23 | 0 | 9 | 34 |
| 0815 - 0830 | 3 | 20 | 1 | 6 | 30 |
| 0830 - 0845 | 0 | 18 | 0 | 7 | 25 |
| 0845 - 0900 | 0 | 45 | 1 | 29 | 75 |
| 0900 - 0915 | 2 | 41 | 1 | 11 | 55 |
| 0915 - 0930 | 1 | 15 | 0 | 20 | 36 |
| Period End | 10 | 255 | 7 | 115 | 387 |

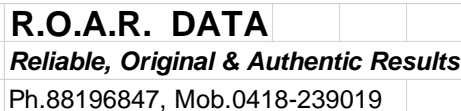
| Peds | NORTH | WEST | SOUTH | EAST | |
|-------------|--------------|---------------|--------------|---------------|-----|
| | Jubilee Ave | Hampton Ct Rd | Jubilee Ave | Hampton Ct Rd | |
| Peak Per | UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED | TOT |
| 0630 - 0730 | 1 | 50 | 3 | 11 | 65 |
| 0645 - 0745 | 1 | 70 | 3 | 15 | 89 |
| 0700 - 0800 | 2 | 72 | 1 | 30 | 105 |
| 0715 - 0815 | 3 | 83 | 1 | 35 | 122 |
| 0730 - 0830 | 6 | 86 | 2 | 37 | 131 |
| 0745 - 0845 | 6 | 81 | 2 | 38 | 127 |
| 0800 - 0900 | 5 | 106 | 2 | 51 | 164 |
| 0815 - 0915 | 5 | 124 | 3 | 53 | 185 |
| 0830 - 0930 | 3 | 119 | 2 | 67 | 191 |

| PEAK HR | 6 | 86 | 2 | 37 | 131 |
|---------|---|----|---|----|-----|
|---------|---|----|---|----|-----|



TOTAL
VOLUMES
FOR COUNT
PERIOD





| | | |
|-------------|--------------------------------|--|
| Client | : Varga Traffic Planning | |
| Job No/Name | : 7155 CARLTON 298 Railway Pde | |
| Day/Date | : Thursday / 8th August 2019 | |

| Lights | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|------|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Time Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 1430 - 1445 | 3 | 36 | 2 | 3 | 10 | 5 | 2 | 75 | 0 | 4 | 3 | 1 | 144 |
| 1445 - 1500 | 0 | 37 | 3 | 8 | 7 | 8 | 12 | 77 | 2 | 4 | 5 | 1 | 164 |
| 1500 - 1515 | 2 | 29 | 1 | 3 | 5 | 5 | 12 | 91 | 7 | 8 | 11 | 0 | 174 |
| 1515 - 1530 | 5 | 23 | 1 | 9 | 3 | 7 | 10 | 108 | 3 | 11 | 8 | 2 | 190 |
| 1530 - 1545 | 2 | 32 | 2 | 3 | 5 | 5 | 19 | 88 | 5 | 11 | 5 | 2 | 179 |
| 1545 - 1600 | 2 | 29 | 4 | 7 | 2 | 5 | 16 | 86 | 0 | 9 | 5 | 1 | 166 |
| 1600 - 1615 | 1 | 39 | 3 | 7 | 5 | 2 | 10 | 89 | 6 | 5 | 4 | 0 | 171 |
| 1615 - 1630 | 5 | 36 | 7 | 6 | 3 | 7 | 6 | 92 | 3 | 10 | 7 | 1 | 183 |
| 1630 - 1645 | 5 | 45 | 3 | 2 | 0 | 8 | 5 | 86 | 5 | 11 | 5 | 1 | 176 |
| 1645 - 1700 | 6 | 41 | 3 | 5 | 9 | 5 | 5 | 75 | 3 | 9 | 7 | 7 | 175 |
| 1700 - 1715 | 3 | 55 | 3 | 11 | 9 | 5 | 3 | 78 | 5 | 14 | 11 | 2 | 199 |
| 1715 - 1730 | 1 | 34 | 6 | 7 | 3 | 11 | 14 | 99 | 3 | 3 | 3 | 3 | 187 |
| 1730 - 1745 | 1 | 45 | 8 | 6 | 3 | 14 | 23 | 95 | 5 | 6 | 11 | 1 | 218 |
| 1745 - 1800 | 5 | 41 | 5 | 7 | 2 | 4 | 19 | 105 | 5 | 3 | 3 | 2 | 201 |
| 1800 - 1815 | 1 | 46 | 3 | 5 | 19 | 15 | 18 | 90 | 2 | 9 | 5 | 2 | 215 |
| 1815 - 1830 | 5 | 61 | 5 | 11 | 2 | 14 | 25 | 95 | 5 | 11 | 2 | 0 | 236 |
| Period End | 47 | 629 | 59 | 100 | 87 | 120 | 199 | 1429 | 59 | 128 | 95 | 26 | 2978 |

[illegible]

| Lights | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Peak Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 1430 - 1530 | 3 | 36 | 2 | 3 | 10 | 5 | 2 | 75 | 0 | 4 | 3 | 1 | 144 |
| 1445 - 1545 | 9 | 121 | 7 | 23 | 20 | 25 | 53 | 364 | 17 | 34 | 29 | 5 | 707 |
| 1500 - 1600 | 11 | 113 | 8 | 22 | 15 | 22 | 57 | 373 | 15 | 39 | 29 | 5 | 709 |
| 1515 - 1615 | 10 | 123 | 10 | 26 | 15 | 19 | 55 | 371 | 14 | 36 | 22 | 5 | 706 |
| 1530 - 1630 | 10 | 136 | 16 | 23 | 15 | 19 | 51 | 355 | 14 | 35 | 21 | 4 | 699 |
| 1545 - 1645 | 13 | 149 | 17 | 22 | 10 | 22 | 37 | 353 | 14 | 35 | 21 | 3 | 696 |
| 1600 - 1700 | 17 | 161 | 16 | 20 | 17 | 22 | 26 | 342 | 17 | 35 | 23 | 9 | 705 |
| 1615 - 1715 | 19 | 177 | 16 | 24 | 21 | 25 | 19 | 331 | 16 | 44 | 30 | 11 | 733 |
| 1630 - 1730 | 15 | 175 | 15 | 25 | 21 | 29 | 27 | 338 | 16 | 37 | 26 | 13 | 737 |
| 1645 - 1745 | 11 | 175 | 20 | 29 | 24 | 35 | 45 | 347 | 16 | 32 | 32 | 13 | 779 |
| 1700 - 1800 | 10 | 175 | 22 | 31 | 17 | 34 | 59 | 377 | 18 | 26 | 28 | 8 | 805 |
| 1715 - 1815 | 8 | 166 | 22 | 25 | 27 | 44 | 74 | 389 | 15 | 21 | 22 | 8 | 821 |
| 1730 - 1830 | 12 | 193 | 21 | 29 | 26 | 47 | 85 | 385 | 17 | 29 | 21 | 5 | 870 |
| | | | | | | | | | | | | | |
| PEAK HOUR | 12 | 193 | 21 | 29 | 26 | 47 | 85 | 385 | 17 | 29 | 21 | 5 | 870 |

[illegible]



R.O.A.R. DATA

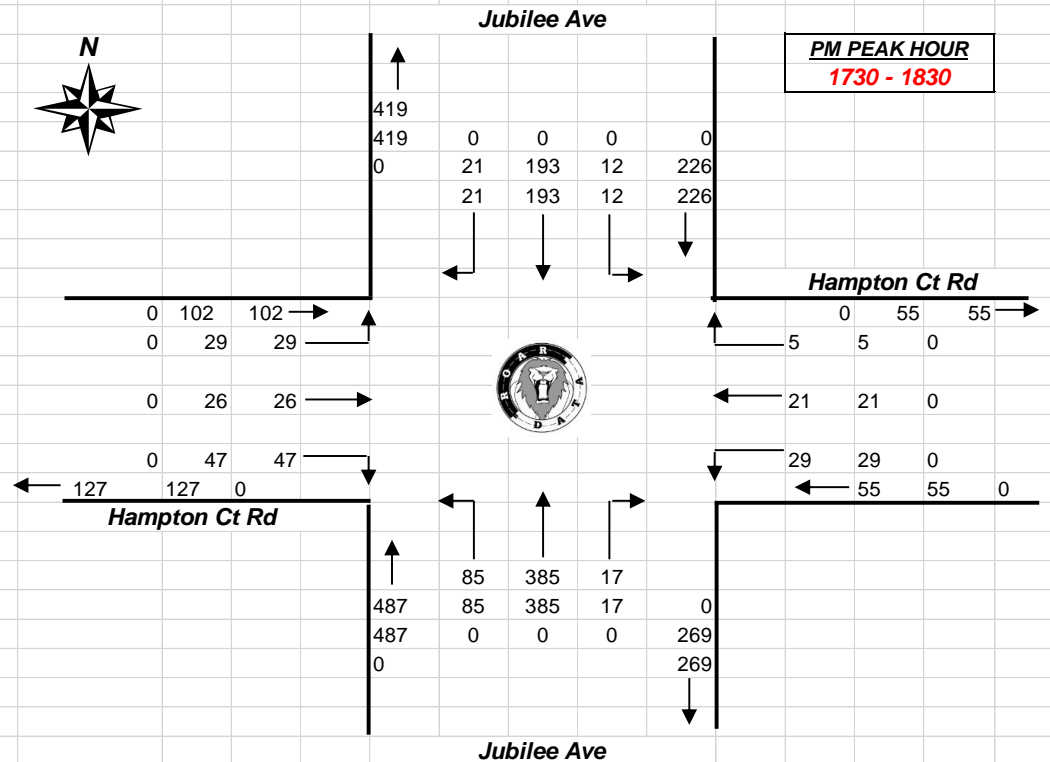
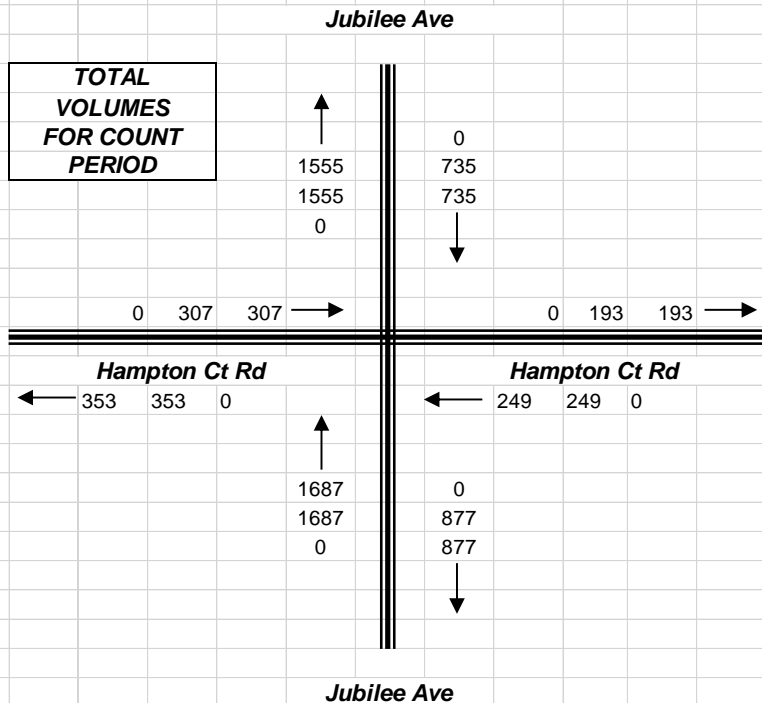
Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| COMBINED | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|----------|----------|---------------|----------|----------|-------------|----------|----------|---------------|----------|----------|------|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Time Per | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | <u>L</u> | <u>T</u> | <u>R</u> | TOT |
| 1430 - 1445 | 3 | 36 | 2 | 3 | 10 | 5 | 2 | 75 | 0 | 4 | 3 | 1 | 144 |
| 1445 - 1500 | 0 | 37 | 3 | 8 | 7 | 8 | 12 | 77 | 2 | 4 | 5 | 1 | 164 |
| 1500 - 1515 | 2 | 29 | 1 | 3 | 5 | 5 | 12 | 91 | 7 | 8 | 11 | 0 | 174 |
| 1515 - 1530 | 5 | 23 | 1 | 9 | 3 | 7 | 10 | 108 | 3 | 11 | 8 | 2 | 190 |
| 1530 - 1545 | 2 | 32 | 2 | 3 | 5 | 5 | 19 | 88 | 5 | 11 | 5 | 2 | 179 |
| 1545 - 1600 | 2 | 29 | 4 | 7 | 2 | 5 | 16 | 86 | 0 | 9 | 5 | 1 | 166 |
| 1600 - 1615 | 1 | 39 | 3 | 7 | 5 | 2 | 10 | 89 | 6 | 5 | 4 | 0 | 171 |
| 1615 - 1630 | 5 | 36 | 7 | 6 | 3 | 7 | 6 | 92 | 3 | 10 | 7 | 1 | 183 |
| 1630 - 1645 | 5 | 45 | 3 | 2 | 0 | 8 | 5 | 86 | 5 | 11 | 5 | 1 | 176 |
| 1645 - 1700 | 6 | 41 | 3 | 5 | 9 | 5 | 5 | 75 | 3 | 9 | 7 | 7 | 175 |
| 1700 - 1715 | 3 | 55 | 3 | 11 | 9 | 5 | 3 | 78 | 5 | 14 | 11 | 2 | 199 |
| 1715 - 1730 | 1 | 34 | 6 | 7 | 3 | 11 | 14 | 99 | 3 | 3 | 3 | 3 | 187 |
| 1730 - 1745 | 1 | 45 | 8 | 6 | 3 | 14 | 23 | 95 | 5 | 6 | 11 | 1 | 218 |
| 1745 - 1800 | 5 | 41 | 5 | 7 | 2 | 4 | 19 | 105 | 5 | 3 | 3 | 2 | 201 |
| 1800 - 1815 | 1 | 46 | 3 | 5 | 19 | 15 | 18 | 90 | 2 | 9 | 5 | 2 | 215 |
| 1815 - 1830 | 5 | 61 | 5 | 11 | 2 | 14 | 25 | 95 | 5 | 11 | 2 | 0 | 236 |
| Period End | 47 | 629 | 59 | 100 | 87 | 120 | 199 | 1429 | 59 | 128 | 95 | 26 | 2978 |

| COMBINED | NORTH | | | WEST | | | SOUTH | | | EAST | | | |
|-------------|-------------|-----|----|---------------|----|----|-------------|-----|----|---------------|----|----|-----|
| | Jubilee Ave | | | Hampton Ct Rd | | | Jubilee Ave | | | Hampton Ct Rd | | | |
| Peak Per | L | T | R | L | T | R | L | T | R | L | T | R | TOT |
| 1430 - 1530 | 3 | 36 | 2 | 3 | 10 | 5 | 2 | 75 | 0 | 4 | 3 | 1 | 144 |
| 1445 - 1545 | 9 | 121 | 7 | 23 | 20 | 25 | 53 | 364 | 17 | 34 | 29 | 5 | 707 |
| 1500 - 1600 | 11 | 113 | 8 | 22 | 15 | 22 | 57 | 373 | 15 | 39 | 29 | 5 | 709 |
| 1515 - 1615 | 10 | 123 | 10 | 26 | 15 | 19 | 55 | 371 | 14 | 36 | 22 | 5 | 706 |
| 1530 - 1630 | 10 | 136 | 16 | 23 | 15 | 19 | 51 | 355 | 14 | 35 | 21 | 4 | 699 |
| 1545 - 1645 | 13 | 149 | 17 | 22 | 10 | 22 | 37 | 353 | 14 | 35 | 21 | 3 | 696 |
| 1600 - 1700 | 17 | 161 | 16 | 20 | 17 | 22 | 26 | 342 | 17 | 35 | 23 | 9 | 705 |
| 1615 - 1715 | 19 | 177 | 16 | 24 | 21 | 25 | 19 | 331 | 16 | 44 | 30 | 11 | 733 |
| 1630 - 1730 | 15 | 175 | 15 | 25 | 21 | 29 | 27 | 338 | 16 | 37 | 26 | 13 | 737 |
| 1645 - 1745 | 11 | 175 | 20 | 29 | 24 | 35 | 45 | 347 | 16 | 32 | 32 | 13 | 779 |
| 1700 - 1800 | 10 | 175 | 22 | 31 | 17 | 34 | 59 | 377 | 18 | 26 | 28 | 8 | 805 |
| 1715 - 1815 | 8 | 166 | 22 | 25 | 27 | 44 | 74 | 389 | 15 | 21 | 22 | 8 | 821 |
| 1730 - 1830 | 12 | 193 | 21 | 29 | 26 | 47 | 85 | 385 | 17 | 29 | 21 | 5 | 870 |
| | | | | | | | | | | | | | |
| PEAK HOUR | 12 | 193 | 21 | 29 | 26 | 47 | 85 | 385 | 17 | 29 | 21 | 5 | 870 |





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

PM PEAK HOUR

1730 - 1830

| <u>Peds</u> | <u>NORTH</u> | <u>WEST</u> | <u>SOUTH</u> | <u>EAST</u> | | <u>Peds</u> | <u>NORTH</u> | <u>WEST</u> | <u>SOUTH</u> | <u>EAST</u> | |
|-------------------|---------------------|----------------------|---------------------|----------------------|--------------|--------------------|---------------------|----------------------|---------------------|----------------------|------------|
| | <i>Jubilee Ave</i> | <i>Hampton Ct Rd</i> | <i>Jubilee Ave</i> | <i>Hampton Ct Rd</i> | | | <i>Jubilee Ave</i> | <i>Hampton Ct Rd</i> | <i>Jubilee Ave</i> | <i>Hampton Ct Rd</i> | |
| <u>Time Per</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>TOTAL</u> | <u>Peak Per</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>UNCLASSIFIED</u> | <u>TOT</u> |
| 1430 - 1445 | 1 | 16 | 1 | 7 | 25 | 1430 - 1530 | 4 | 98 | 11 | 35 | 148 |
| 1445 - 1500 | 2 | 18 | 2 | 11 | 33 | 1445 - 1545 | 4 | 106 | 12 | 34 | 156 |
| 1500 - 1515 | 0 | 21 | 5 | 10 | 36 | 1500 - 1600 | 5 | 102 | 10 | 27 | 144 |
| 1515 - 1530 | 1 | 43 | 3 | 7 | 54 | 1515 - 1615 | 7 | 98 | 6 | 27 | 138 |
| 1530 - 1545 | 1 | 24 | 2 | 6 | 33 | 1530 - 1630 | 9 | 70 | 3 | 25 | 107 |
| 1545 - 1600 | 3 | 14 | 0 | 4 | 21 | 1545 - 1645 | 9 | 58 | 1 | 25 | 93 |
| 1600 - 1615 | 2 | 17 | 1 | 10 | 30 | 1600 - 1700 | 6 | 55 | 4 | 26 | 91 |
| 1615 - 1630 | 3 | 15 | 0 | 5 | 23 | 1615 - 1715 | 5 | 47 | 3 | 18 | 73 |
| 1630 - 1645 | 1 | 12 | 0 | 6 | 19 | 1630 - 1730 | 6 | 43 | 3 | 17 | 69 |
| 1645 - 1700 | 0 | 11 | 3 | 5 | 19 | 1645 - 1745 | 8 | 57 | 5 | 25 | 95 |
| 1700 - 1715 | 1 | 9 | 0 | 2 | 12 | 1700 - 1800 | 9 | 60 | 3 | 28 | 100 |
| 1715 - 1730 | 4 | 11 | 0 | 4 | 19 | 1715 - 1815 | 9 | 74 | 3 | 40 | 126 |
| 1730 - 1745 | 3 | 26 | 2 | 14 | 45 | 1730 - 1830 | 5 | 88 | 3 | 44 | 140 |
| 1745 - 1800 | 1 | 14 | 1 | 8 | 24 | | | | | | |
| 1800 - 1815 | 1 | 23 | 0 | 14 | 38 | | | | | | |
| 1815 - 1830 | 0 | 25 | 0 | 8 | 33 | | | | | | |
| Period End | 24 | 299 | 20 | 121 | 464 | PEAK HR | | | | | |



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

Intersection Details

Obtained via satellite

May be incorrect

AM PEAK HOUR
0730 - 0830



Jubilee Ave

Hampton Court Rd



| | AM | PM |
|---|----|----|
| L | 95 | 29 |
| T | 35 | 26 |
| R | 36 | 47 |

| R | T | L | |
|----|-----|----|----|
| 16 | 152 | 6 | AM |
| 21 | 193 | 12 | PM |

| R | 5 | 2 |
|---|----|----|
| T | 21 | 11 |
| L | 29 | 21 |
| | PM | AM |

| PM | 85 | 385 | 17 |
|----|----|-----|----|
| AM | 76 | 484 | 16 |
| | L | T | R |



Hampton Court Rd

PM PEAK HOUR
1730 - 1830

Combined figures only

Weather >>>



Jubilee Ave



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mobile.0418239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| PEDS | WEST | SOUTH | EAST | |
|-------------|-------------|-------------|-------------|-----|
| Time Per | Railway Pde | Jubilee Ave | Railway Pde | TOT |
| 0630 - 0645 | 10 | 3 | 7 | 20 |
| 0645 - 0700 | 38 | 5 | 10 | 53 |
| 0700 - 0715 | 40 | 10 | 20 | 70 |
| 0715 - 0730 | 38 | 3 | 19 | 60 |
| 0730 - 0745 | 71 | 5 | 33 | 109 |
| 0745 - 0800 | 65 | 10 | 29 | 104 |
| 0800 - 0815 | 64 | 8 | 35 | 107 |
| 0815 - 0830 | 54 | 16 | 28 | 98 |
| 0830 - 0845 | 63 | 11 | 29 | 103 |
| 0845 - 0900 | 32 | 12 | 28 | 72 |
| 0900 - 0915 | 37 | 10 | 29 | 76 |
| 0915 - 0930 | 23 | 8 | 24 | 55 |
| Per End | 535 | 101 | 291 | 927 |

| PEDS | WEST | SOUTH | EAST | |
|-------------|-------------|-------------|-------------|-----|
| Peak Per | Railway Pde | Jubilee Ave | Railway Pde | TOT |
| 0630 - 0730 | 126 | 21 | 56 | 203 |
| 0645 - 0745 | 187 | 23 | 82 | 292 |
| 0700 - 0800 | 214 | 28 | 101 | 343 |
| 0715 - 0815 | 238 | 26 | 116 | 380 |
| 0730 - 0830 | 254 | 39 | 125 | 418 |
| 0745 - 0845 | 246 | 45 | 121 | 412 |
| 0800 - 0900 | 213 | 47 | 120 | 380 |
| 0815 - 0915 | 186 | 49 | 114 | 349 |
| 0830 - 0930 | 155 | 41 | 110 | 306 |

| PEAK HR | 246 | 45 | 121 | 412 |
|---------|-----|----|-----|-----|
|---------|-----|----|-----|-----|

| Lights | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|-----|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 110 | 23 | 10 | 36 | 12 | 35 | 226 |
| 0645 - 0700 | 123 | 21 | 24 | 58 | 13 | 40 | 279 |
| 0700 - 0715 | 152 | 31 | 33 | 68 | 7 | 45 | 336 |
| 0715 - 0730 | 135 | 41 | 54 | 62 | 12 | 43 | 347 |
| 0730 - 0745 | 132 | 36 | 31 | 68 | 22 | 79 | 368 |
| 0745 - 0800 | 174 | 14 | 44 | 108 | 23 | 61 | 424 |
| 0800 - 0815 | 176 | 24 | 39 | 114 | 11 | 85 | 449 |
| 0815 - 0830 | 149 | 24 | 32 | 149 | 19 | 69 | 442 |
| 0830 - 0845 | 184 | 34 | 36 | 68 | 30 | 96 | 448 |
| 0845 - 0900 | 151 | 29 | 31 | 67 | 25 | 83 | 386 |
| 0900 - 0915 | 151 | 29 | 34 | 68 | 18 | 89 | 389 |
| 0915 - 0930 | 171 | 38 | 38 | 40 | 15 | 88 | 390 |
| Per End | 1808 | 344 | 406 | 906 | 207 | 813 | 4484 |

| Heavies | WEST | | SOUTH | | EAST | | |
|-------------|-------------|---|-------------|---|-------------|---|-----|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0645 - 0700 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0700 - 0715 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0715 - 0730 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| 0730 - 0745 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0745 - 0800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0800 - 0815 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0815 - 0830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0830 - 0845 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0845 - 0900 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 0900 - 0915 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| 0915 - 0930 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Per End | 6 | 2 | 1 | 0 | 0 | 3 | 12 |

| Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|-----|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Time Per | I | R | L | R | L | I | TOT |
| 0630 - 0645 | 111 | 23 | 10 | 36 | 12 | 35 | 227 |
| 0645 - 0700 | 123 | 21 | 24 | 58 | 13 | 41 | 280 |
| 0700 - 0715 | 153 | 31 | 33 | 68 | 7 | 46 | 338 |
| 0715 - 0730 | 136 | 41 | 55 | 62 | 12 | 43 | 349 |
| 0730 - 0745 | 133 | 36 | 31 | 68 | 22 | 79 | 369 |
| 0745 - 0800 | 174 | 14 | 44 | 108 | 23 | 61 | 424 |
| 0800 - 0815 | 176 | 25 | 39 | 114 | 11 | 85 | 450 |
| 0815 - 0830 | 149 | 24 | 32 | 149 | 19 | 69 | 442 |
| 0830 - 0845 | 185 | 34 | 36 | 68 | 30 | 96 | 449 |
| 0845 - 0900 | 151 | 30 | 31 | 67 | 25 | 83 | 387 |
| 0900 - 0915 | 152 | 29 | 34 | 68 | 18 | 90 | 391 |
| 0915 - 0930 | 171 | 38 | 38 | 40 | 15 | 88 | 390 |
| Per End | 1814 | 346 | 407 | 906 | 207 | 816 | 4496 |

| Lights | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|-----|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 520 | 116 | 121 | 224 | 44 | 163 | 1188 |
| 0645 - 0745 | 542 | 129 | 142 | 256 | 54 | 207 | 1330 |
| 0700 - 0800 | 593 | 122 | 162 | 306 | 64 | 228 | 1475 |
| 0715 - 0815 | 617 | 115 | 168 | 352 | 68 | 268 | 1588 |
| 0730 - 0830 | 631 | 98 | 146 | 439 | 75 | 294 | 1683 |
| 0745 - 0845 | 683 | 96 | 151 | 439 | 83 | 311 | 1763 |
| 0800 - 0900 | 660 | 111 | 138 | 398 | 85 | 333 | 1725 |
| 0815 - 0915 | 635 | 116 | 133 | 352 | 92 | 337 | 1665 |
| 0830 - 0930 | 657 | 130 | 139 | 243 | 88 | 356 | 1613 |

| Heavies | WEST | | SOUTH | | EAST | | |
|-------------|-------------|---|-------------|---|-------------|---|-----|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 3 | 0 | 1 | 0 | 0 | 2 | 6 |
| 0645 - 0745 | 3 | 0 | 1 | 0 | 0 | 2 | 6 |
| 0700 - 0800 | 3 | 0 | 1 | 0 | 0 | 1 | 5 |
| 0715 - 0815 | 2 | 1 | 1 | 0 | 0 | 0 | 4 |
| 0730 - 0830 | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| 0745 - 0845 | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| 0800 - 0900 | 1 | 2 | 0 | 0 | 0 | 0 | 3 |
| 0815 - 0915 | 2 | 1 | 0 | 0 | 0 | 1 | 4 |
| 0830 - 0930 | 2 | 1 | 0 | 0 | 0 | 1 | 4 |

| Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|-----|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Peak Per | I | R | L | R | L | I | TOT |
| 0630 - 0730 | 523 | 116 | 122 | 224 | 44 | 165 | 1194 |
| 0645 - 0745 | 545 | 129 | 143 | 256 | 54 | 209 | 1336 |
| 0700 - 0800 | 596 | 122 | 163 | 306 | 64 | 229 | 1480 |
| 0715 - 0815 | 619 | 116 | 169 | 352 | 68 | 268 | 1592 |
| 0730 - 0830 | 632 | 99 | 146 | 439 | 75 | 294 | 1685 |
| 0745 - 0845 | 684 | 97 | 151 | 439 | 83 | 311 | 1765 |
| 0800 - 0900 | 661 | 113 | 138 | 398 | 85 | 333 | 1728 |
| 0815 - 0915 | 637 | 117 | 133 | 352 | 92 | 338 | 1669 |
| 0830 - 0930 | 659 | 131 | 139 | 243 | 88 | 357 | 1617 |

| PEAK HR | 683 | 96 | 151 | 439 | 83 | 311 | 1763 |
|---------|-----|----|-----|-----|----|-----|------|
|---------|-----|----|-----|-----|----|-----|------|

| PEAK HR | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
|---------|---|---|---|---|---|---|---|
|---------|---|---|---|---|---|---|---|

| PEAK HR | 684 | 97 | 151 | 439 | 83 | 311 | 1765 |
|---------|-----|----|-----|-----|----|-----|------|
|---------|-----|----|-----|-----|----|-----|------|



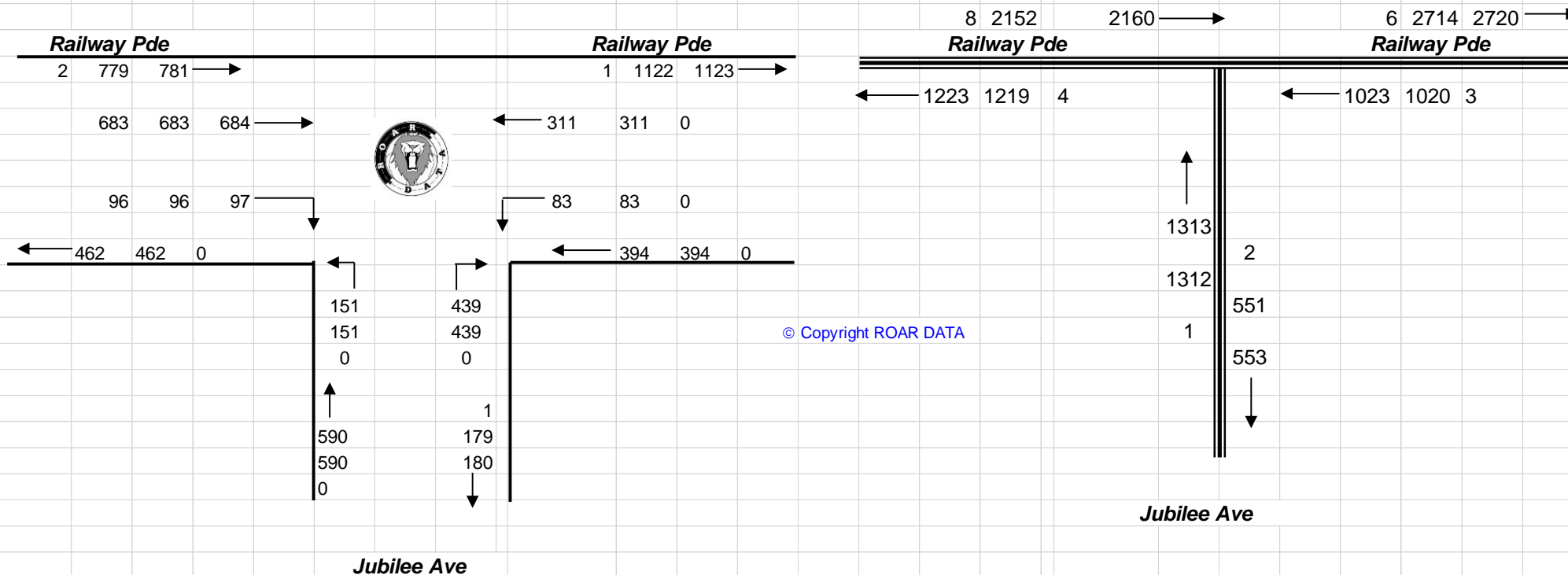
R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

**TOTAL VOLUMES
FOR COUNT
PERIOD**





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

| Lights | WEST | | SOUTH | | EAST | | | Heavies | WEST | | SOUTH | | EAST | | | Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|------|------|-------------|-------------|---|-------------|---|-------------|---|-----|-------------|-------------|-----|-------------|-----|-------------|------|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | | | Railway Pde | | Jubilee Ave | | Railway Pde | | | | Railway Pde | | Jubilee Ave | | Railway Pde | | |
| Time Per | T | R | L | R | L | T | TOT | Time Per | T | R | L | R | L | T | TOT | Time Per | T | R | L | R | L | T | TOT |
| 1430 - 1445 | 98 | 18 | 41 | 36 | 17 | 118 | 328 | 1430 - 1445 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1430 - 1445 | 98 | 18 | 41 | 36 | 17 | 118 | 328 |
| 1445 - 1500 | 106 | 31 | 46 | 55 | 23 | 144 | 405 | 1445 - 1500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1445 - 1500 | 106 | 31 | 46 | 55 | 23 | 144 | 405 |
| 1500 - 1515 | 98 | 14 | 34 | 49 | 17 | 146 | 358 | 1500 - 1515 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1500 - 1515 | 99 | 14 | 34 | 49 | 17 | 146 | 359 |
| 1515 - 1530 | 86 | 15 | 57 | 55 | 13 | 192 | 418 | 1515 - 1530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1515 - 1530 | 86 | 15 | 57 | 55 | 13 | 192 | 418 |
| 1530 - 1545 | 87 | 21 | 53 | 47 | 14 | 156 | 378 | 1530 - 1545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1530 - 1545 | 87 | 21 | 53 | 47 | 14 | 156 | 378 |
| 1545 - 1600 | 94 | 16 | 50 | 40 | 22 | 141 | 363 | 1545 - 1600 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1545 - 1600 | 95 | 16 | 50 | 40 | 22 | 141 | 364 |
| 1600 - 1615 | 80 | 23 | 66 | 36 | 23 | 140 | 368 | 1600 - 1615 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1600 - 1615 | 80 | 23 | 66 | 36 | 23 | 141 | 369 |
| 1615 - 1630 | 98 | 19 | 48 | 61 | 28 | 161 | 415 | 1615 - 1630 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1615 - 1630 | 99 | 19 | 48 | 61 | 28 | 161 | 416 |
| 1630 - 1645 | 66 | 31 | 47 | 37 | 16 | 125 | 322 | 1630 - 1645 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 1630 - 1645 | 66 | 31 | 47 | 37 | 16 | 127 | 324 |
| 1645 - 1700 | 94 | 37 | 50 | 46 | 23 | 125 | 375 | 1645 - 1700 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1645 - 1700 | 95 | 37 | 50 | 46 | 23 | 125 | 376 |
| 1700 - 1715 | 106 | 31 | 69 | 52 | 27 | 164 | 449 | 1700 - 1715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1700 - 1715 | 106 | 31 | 69 | 52 | 27 | 164 | 449 |
| 1715 - 1730 | 78 | 21 | 52 | 50 | 15 | 151 | 367 | 1715 - 1730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1715 - 1730 | 78 | 21 | 52 | 50 | 15 | 151 | 367 |
| 1730 - 1745 | 72 | 14 | 57 | 46 | 24 | 145 | 358 | 1730 - 1745 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1730 - 1745 | 72 | 14 | 57 | 46 | 24 | 145 | 358 |
| 1745 - 1800 | 98 | 32 | 55 | 67 | 18 | 152 | 422 | 1745 - 1800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1745 - 1800 | 98 | 32 | 55 | 67 | 18 | 152 | 422 |
| 1800 - 1815 | 69 | 29 | 55 | 52 | 19 | 121 | 345 | 1800 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1800 - 1815 | 69 | 29 | 55 | 52 | 19 | 121 | 345 |
| 1815 - 1830 | 91 | 34 | 54 | 47 | 31 | 147 | 404 | 1815 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1815 - 1830 | 91 | 34 | 54 | 47 | 31 | 147 | 404 |
| Per End | 1421 | 386 | 834 | 776 | 330 | 2328 | 6075 | Per End | 4 | 0 | 0 | 0 | 0 | 3 | 7 | Per End | 1425 | 386 | 834 | 776 | 330 | 2331 | 6082 |

| Lights | WEST | | SOUTH | | EAST | | | Heavies | WEST | | SOUTH | | EAST | | | Combined | WEST | | SOUTH | | EAST | | |
|-------------|-------------|-----|-------------|-----|-------------|-----|------|-------------|-------------|---|-------------|---|-------------|---|-----|-------------|-------------|-----|-------------|-----|-------------|-----|------|
| | Railway Pde | | Jubilee Ave | | Railway Pde | | | | Railway Pde | | Jubilee Ave | | Railway Pde | | | | Railway Pde | | Railway Pde | | Jubilee Ave | | |
| Peak Per | T | R | L | R | L | T | TOT | Peak Per | T | R | L | R | L | T | TOT | Peak Per | T | R | L | R | L | T | TOT |
| 1430 - 1530 | 388 | 78 | 178 | 195 | 70 | 600 | 1509 | 1430 - 1530 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1430 - 1530 | 389 | 78 | 178 | 195 | 70 | 600 | 1510 |
| 1445 - 1545 | 377 | 81 | 190 | 206 | 67 | 638 | 1559 | 1445 - 1545 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1445 - 1545 | 378 | 81 | 190 | 206 | 67 | 638 | 1560 |
| 1500 - 1600 | 365 | 66 | 194 | 191 | 66 | 635 | 1517 | 1500 - 1600 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1500 - 1600 | 367 | 66 | 194 | 191 | 66 | 635 | 1519 |
| 1515 - 1615 | 347 | 75 | 226 | 178 | 72 | 629 | 1527 | 1515 - 1615 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1515 - 1615 | 348 | 75 | 226 | 178 | 72 | 630 | 1529 |
| 1530 - 1630 | 359 | 79 | 217 | 184 | 87 | 598 | 1524 | 1530 - 1630 | 2 | 0 | 0 | 0 | 0 | 1 | 3 | 1530 - 1630 | 361 | 79 | 217 | 184 | 87 | 599 | 1527 |
| 1545 - 1645 | 338 | 89 | 211 | 174 | 89 | 567 | 1468 | 1545 - 1645 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 1545 - 1645 | 340 | 89 | 211 | 174 | 89 | 570 | 1473 |
| 1600 - 1700 | 338 | 110 | 211 | 180 | 90 | 551 | 1480 | 1600 - 1700 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 1600 - 1700 | 340 | 110 | 211 | 180 | 90 | 554 | 1485 |
| 1615 - 1715 | 364 | 118 | 214 | 196 | 94 | 575 | 1561 | 1615 - 1715 | 2 | 0 | 0 | 0 | 0 | 2 | 4 | 1615 - 1715 | 366 | 118 | 214 | 196 | 94 | 577 | 1565 |
| 1630 - 1730 | 344 | 120 | 218 | 185 | 81 | 565 | 1513 | 1630 - 1730 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 1630 - 1730 | 345 | 120 | 218 | 185 | 81 | 567 | 1516 |
| 1645 - 1745 | 350 | 103 | 228 | 194 | 89 | 585 | 1549 | 1645 - 1745 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1645 - 1745 | 351 | 103 | 228 | 194 | 89 | 585 | 1550 |
| 1700 - 1800 | 354 | 98 | 233 | 215 | 84 | 612 | 1596 | 1700 - 1800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1700 - 1800 | 354 | 98 | 233 | 215 | 84 | 612 | 1596 |
| 1715 - 1815 | 317 | 96 | 219 | 215 | 76 | 569 | 1492 | 1715 - 1815 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1715 - 1815 | 317 | 96 | 219 | 215 | 76 | 569 | 1492 |
| 1730 - 1830 | 330 | 109 | 221 | 212 | 92 | 565 | 1529 | 1730 - 1830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1730 - 1830 | 330 | 109 | 221 | 212 | 92 | 565 | 1529 |
| | | | | | | | | | | | | | | | | | | | | | | | |
| PEAK HR | 354 | 98 | 233 | 215 | 84 | 612 | 1596 | PEAK HR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | PEAK HR | 354 | 98 | 233 | 215 | 84 | 612 | 1596 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

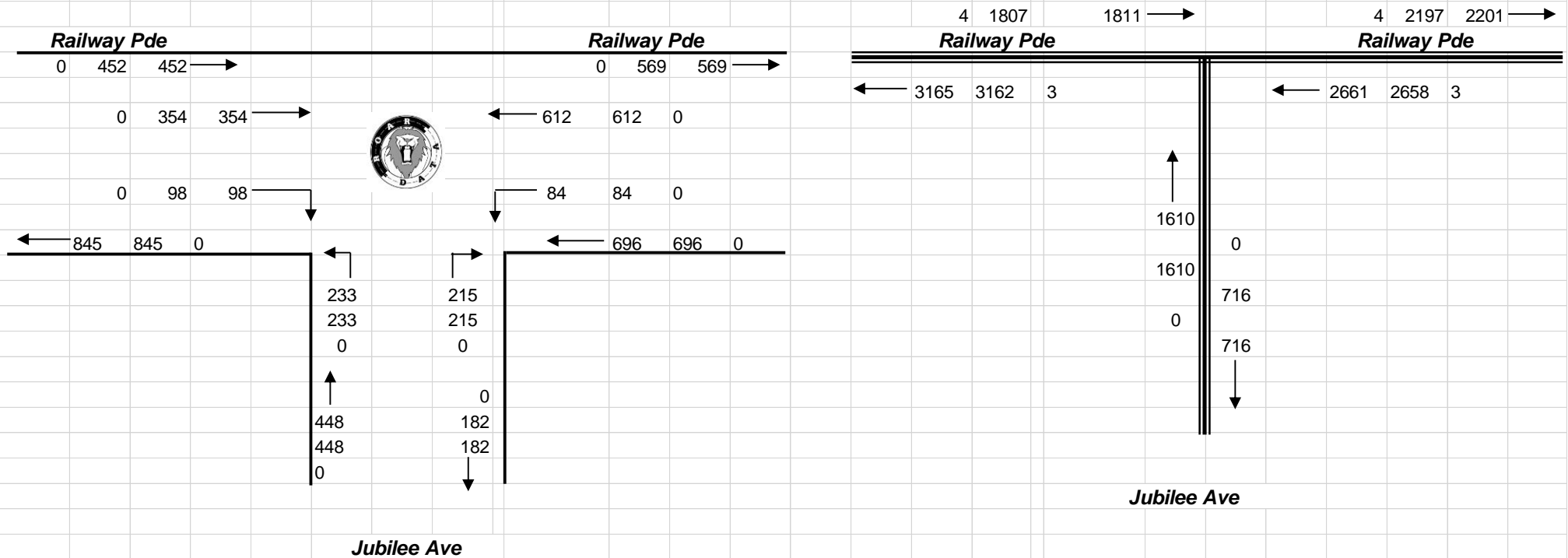
Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

PM PEAK HOUR
1700 - 1800



**TOTAL VOLUMES
FOR COUNT
PERIOD**





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning

Job No/Name : 7155 CARLTON 298 Railway Pde

Day/Date : Thursday / 8th August 2019

PM PEAK HR

1700 - 1800

PEDS

| | WEST | SOUTH | EAST | |
|----------------|-------------|-------------|-------------|-------------|
| Time Per | Railway Pde | Jubilee Ave | Railway Pde | TOT |
| 1430 - 1445 | 33 | 11 | 18 | 62 |
| 1445 - 1500 | 23 | 2 | 20 | 45 |
| 1500 - 1515 | 37 | 7 | 9 | 53 |
| 1515 - 1530 | 48 | 12 | 17 | 77 |
| 1530 - 1545 | 41 | 16 | 25 | 82 |
| 1545 - 1600 | 53 | 11 | 21 | 85 |
| 1600 - 1615 | 41 | 3 | 22 | 66 |
| 1615 - 1630 | 58 | 8 | 29 | 95 |
| 1630 - 1645 | 23 | 13 | 24 | 60 |
| 1645 - 1700 | 38 | 10 | 22 | 70 |
| 1700 - 1715 | 22 | 19 | 21 | 62 |
| 1715 - 1730 | 46 | 16 | 28 | 90 |
| 1730 - 1745 | 44 | 8 | 25 | 77 |
| 1745 - 1800 | 64 | 21 | 44 | 129 |
| 1800 - 1815 | 39 | 5 | 29 | 73 |
| 1815 - 1830 | 63 | 11 | 32 | 106 |
| Per End | 673 | 173 | 386 | 1232 |

PEDS

| | WEST | SOUTH | EAST | |
|--------------------|-------------|-------------|-------------|------------|
| Peak Per | Railway Pde | Jubilee Ave | Railway Pde | TOT |
| 1430 - 1530 | 141 | 32 | 64 | 237 |
| 1445 - 1545 | 149 | 37 | 71 | 257 |
| 1500 - 1600 | 339 | 80 | 169 | 588 |
| 1515 - 1615 | 324 | 92 | 181 | 597 |
| 1530 - 1630 | 322 | 96 | 192 | 610 |
| 1545 - 1645 | 325 | 88 | 192 | 605 |
| 1600 - 1700 | 336 | 98 | 215 | 649 |
| 1615 - 1715 | 334 | 100 | 222 | 656 |
| 1630 - 1730 | 339 | 103 | 225 | 667 |
| 1645 - 1745 | 150 | 53 | 96 | 299 |
| 1700 - 1800 | 176 | 64 | 118 | 358 |
| 1715 - 1815 | 193 | 50 | 126 | 369 |
| 1730 - 1830 | 210 | 45 | 130 | 385 |
| PEAK HR | 176 | 64 | 118 | 358 |



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 7155 CARLTON 298 Railway Pde
Day/Date : Thursday / 8th August 2019

Intersection Details

Obtained via satellite

May be incorrect

AM PEAK HOUR
0745 - 0845

