UPDATED TRAFFIC IMPACT ASSESSMENT

Proposed Redevelopment of Bexley Bowling Club

72 Laycock Street, Bexley North

Prepared for: Order of AHEPA NSW Inc.

Reference: 0143r03v01

Date: 6/04/2020

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1. Introduction

1.1. Overview

PDC Consultants has been commissioned by Order of AHEPA NSW Inc. to undertake a traffic impact assessment of a Development Application (DA) relating to the proposed redevelopment of Bexley Bowling Club (the Club) at 72 Laycock Street, Bexley North. Specifically, the DA seeks consent for the redevelopment of the Club with the following characteristics:

- Demolition of the existing building located at the south-western corner of the site and construction of a new two (2) storey building comprising:

  Ground Floor
  - 300m^2 community facilities area;
  - 177.5m^2 bar/dining area associated with the bowling club;
  - Ancillary areas such as bathrooms; changerooms, reception, kitchen and storage rooms.

  Level 1
  - 219m^2 multi-purpose indoor area;
  - 56m^2 multi-purpose outdoor area;
  - Ancillary areas such as offices, library / cultural museum, audio visual room, bathrooms and storage.

- Retention of one (1) of three (3) existing bowling greens;
- At-grade and lower ground floor parking accommodating a total of 95 car spaces, including:
  - 72 standard car spaces;
  - 23 car spaces within an overflow section of the car park;
- A single on-site loading bay suitable for trucks up to an 8.8 metre Medium Rigid Vehicle (MRV);
- Relocation of the existing bus stop along the Edward Street frontage. This shall be relocated approximately 40 metres to the west of its current location;
- Two (2) access driveways including a 6.1 metre driveway onto Edward Street serving the car park and a 3.6 metre driveway onto Laycock Street serving the on-site loading bay.

Having regard for the above, it is evident that development is not of a scale that requires referral of the DA to the Roads and Maritime Services (RMS), under the provisions of the State Environmental Planning Policy (Infrastructure) 2007.

The site is located in the newly formed Bayside Council local government area (LGA) however, a consolidated Development Control Plan (DCP) for the Bayside Council LGA is yet to be announced or adopted. The proposed development has therefore been assessed in accordance with the Rockdale Development Control Plan 2011 and Local Environmental Plan 2011.

1.2. Background

A Traffic Impact Assessment report (ref: 0143r02v01) was prepared by PDC Consultants for the redevelopment of the Club and formed part of a DA submission to Council under DA 2019 / 286. Subsequently, Council's Coordinator – Development Assessment issued a letter (Council's Letter) dated 27/09/2019 requesting for additional information for a number of aspects of the development including, traffic and parking. In this regard, this report has been prepared to address the traffic and parking concerns raised in Council's Letter. **Table 1** below lists each of the traffic and parking items as outlined in Council's Letter and shows where each of these items have been addressed in this report.

Table 1: Council Comments and Reference to the Relevant Section of this Report

COUNCIL COMMENTS	RELEVANT SECTION OF THIS REPORT
Design and Use Issues with the Proposed Development	
1. Design: The design approach for the site does not have due regard for the streetscape or impact upon adjoining properties. The following particular concerns with the design are noted.:	
• The location of the loading bay and waste storage immediately adjoining the dwelling at 70 Laycock Street and the need to reverse into the space is poor design given the size of the site and will likely detrimentally impact the property by way of noise impacts. The location of the loading bay appears to prevent it being used to service the potential Stage 2 multi-purpose hall.	Section 4.5
• The accessible parking spaces are located an unreasonable distance from the lift / entrance to the building and bowling club and are not undercover.	Section 4.2
3. Intensification of Use: The approval of a large registered club (identified as having a 630 person capacity) in an area surrounded by residential properties and with poor connections (particularly late at night) to public transport is inappropriate.	Section 4.6
Adequacy of Information	
7. Staging: The application indicates it is providing car parking for 103 cars whilst the use requires a maximum of 47 parking spaces under the DCP according to the traffic report submitted with the application. The additional parking spaces are claimed to be provided for a potential Stage 2 development on the site of a multi-purpose hall (adjoining 69 Oliver Street). No information is provided of the hall other than the traffic report it would likely be 1,200-1,500m^2, and there is no guarantee that the second stage would occur. It is inappropriate to provide parking for a use that may never be constructed. The future use of the entire and a 'master plan' or 'concept DA' created prior to, or with, the assessment of the current application to allow consideration of the likely cumulative impact of the development of the site as a whole in relation to shadowing, noise, traffic, parking and the like.	Section 4.1 *Note: Reference is no longer made to any Stage 2 development. All car parking is solely associated with the Club, as presented in this DA.*
13. The traffic report calculation of parking based on 1 space per 40m^2 for a community facility is not appropriate as it does not represent the actual parking demand for such an intense use.	Section 4.1

1.3. Structure of this Report

This report documents the findings of our investigations in relation to the anticipated traffic and parking impacts of the proposed development and should be read in the context of the Statement of Environmental Effects (SEE), prepared separately by Planning Ingenuity. The remainder of this report is structured as follows:

- Section 2: Describes the site and existing traffic and parking conditions in the locality;
- Section 3: Describes the proposed development;
- Section 4: Assesses the parking requirements of the development;
- Section 5: Assesses the traffic impacts of the development;
- Section 6: Discusses the proposed access and internal design arrangements;
- Section 7: Presents the overall study conclusions.

1.4. References

In preparing this report, reference has been made to the following guidelines / standards:

- Rockdale Local Environmental Plan 2011 (Rockdale LEP 2011);
- Rockdale Development Control Plan 2011 (Rockdale DCP 2011);
- State Environmental Planning Policy (Infrastructure) 2007 (SEPP Infrastructure 2007);
- Disability (Access to Premises – Buildings) Standards 2010 (Disability Standard 2010);
- Australian Standard AS 2890.1-2004, Part 1: Off-Street Car Parking (AS 2890.1);
- Australian Standard AS 2890.2-2018, Part 2: Off-Street Commercial Vehicle Facilities (AS 2890.2)
- Australian Standard AS 2890.3-2015, Part 3: Bicycle Parking (AS 2890.3)
- Australian Standard AS 2890.6-2009, Part 6: Off-Street Parking for People with Disabilities (AS 2890.6);
- RMS Guide to Traffic Generating Development 2002 (RMS Guide);
- RMS Technical Direction TDT 2013/04a - Guide to Traffic Generating Developments, Updated Traffic Surveys (RMS Guide Update).

2. Existing Conditions

2.1. Location and Site

The subject site is located at 72 Laycock Street, Bexley North, being approximately 700 metres south-west of Bexley North Railway Station and 12 kilometres south-west of the Sydney CBD. More specifically, it is bound by Edward Street to the north, Laycock Street to the west and Oliver Street to the east.

The site is irregular in configuration with a total area of approximately 7,300m^2. It has three (3) street frontages being, Edward Street to the north having a length of 85 metres, Oliver Street to the east having a length of 93 metres and Laycock Street to the west having a length of 78 metres. The southern boundary borders neighbouring residential dwellings, having a length of 101 metres.

As shown by **Figure 1** overleaf, the site currently accommodates the Bexley Bowling Club building on Quadrant 1 and three bowling greens across Quadrants 2-4. Vehicle access is provided via a 5.0 metre wide driveway onto Laycock Street, within Quadrant 1 which serves an internal hardstand area however no on-site car parking is provided for the existing club. Additionally, it is noted the existing Bexley Bowling Club is not currently operating (i.e. the Club is permanently closed).

Figures 1 and 2 overleaf provide an appreciation of the site's location in both a local and broad context respectively.

2.2. Road Network

The road hierarchy in the vicinity of the site is shown by **Figure 2**, with the following roads considered noteworthy:

- South Western Motorway: a major arterial road, F5 South Western Freeway that is typically identified as the M5 Motorway. The M5 Motorway runs in an east-west direction between Kyeemagh in the east and Prestons in the west, providing a direct connection between the south-western suburbs of Sydney and the Sydney CBD. Near the site, the M5 Motorway is subject to 100km/h speed zoning restrictions and accommodates 3 lanes of traffic in both directions.

- Edward Street: a local road that runs in an east-west direction intersecting New Illawarra Road in the east and Kingsgrove Road in the west. It is generally subject to 50km/h speed zoning restrictions however, 40km/h School Zone restrictions apply between the hours of 8:00-9:30am and 2:30-4:00pm on school days only. Edward Street accommodates a single lane of traffic in each direction within a 12 metre wide carriageway. Unrestricted parallel parking is permitted along both kerbsides.

- Laycock Street: a local road that runs in a north-south direction intersecting Edward Street in the north and Stoney Creek Road in the south. It is subject to 50km/h speed zoning restrictions and carries a single lane of traffic in each direction within a 12 metre wide carriageway. Unrestricted parallel parking is permitted along both kerbsides.

- Oliver Street: a local road that runs in a north-south direction intersecting East Drive and West Drive in the north and Stoney Creek Road in the south. It is subject to 50km/h speed zoning restrictions

and carries a single lane of traffic in each direction within a 12 metre wide carriageway. Unrestricted parallel parking is permitted along both kerbsides.

Figure 1: Site Plan

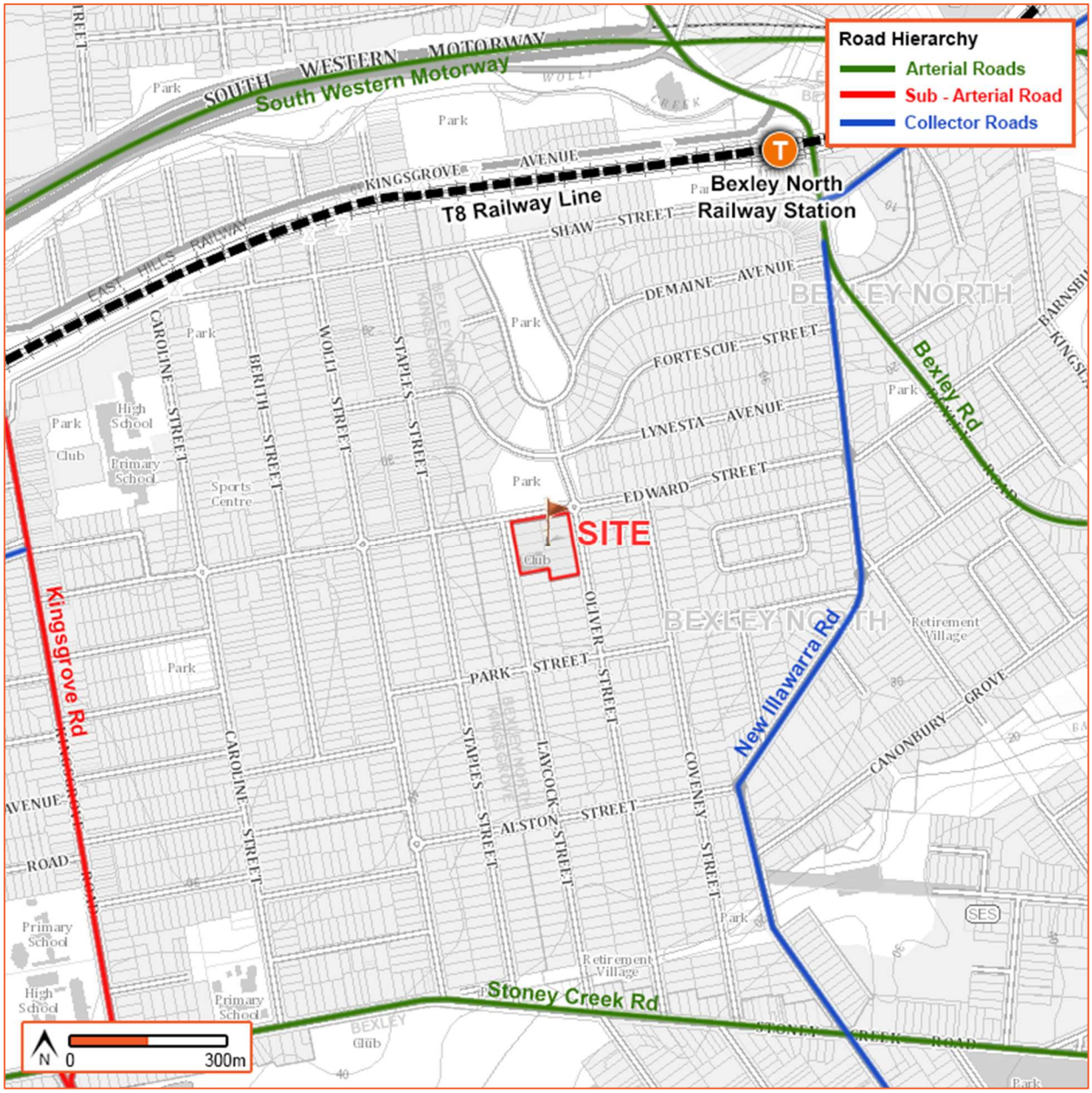


Figure 2: Location & Road Hierarchy Plan

2.3. Public & Active Transport

2.3.1. Bus Services

The Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area, states that the walking catchment for metropolitan bus services includes all areas within a 400 metre radius of a bus stop. As can be seen from **Figure 3**, the site is located to the immediate south of bus stops provided on Edward Street and hence, falls well within the walking catchment area. Additional bus routes are also available within 800 metres from the site as shown by **Figure 3**. Accordingly, staff and patrons will have convenient access to public bus services for journeys to / from the site.

Table 2 below shows the notable town centres that are accessible via the abovementioned bus services and the average service headways during peak and off-peak periods.

Table 2: Bus Services

ROUTE NO.	ROUTE (TO / FROM)	ROUTE DECRIPTION	AVERAGE HEADWAY
410	Hurstville to Macquarie Park	Via Burwood, Concord, Concord West, Rhodes, Ryde & North Ryde	Weekdays: 10 minutes peak / 15 minutes off peak Weekends: 20 minutes
446	St George Hospital to Roselands	Via Bexley, Bexley North, Bardwell Park & Belmore	Weekdays: 30 minutes Weekends: 1 hour
455	Kingsgrove to St George Hospital, Kogarah	Via Hurstville, Carlton & Bexley	Weekdays: 30 minutes Weekends: 40 minutes on Saturdays & 1 hour on Sundays
491	Hurstville to Five Dock	Via Bexley, Kingsgrove, Bexley North, Earlwood, Canterbury & Ashfield	Weekdays: 30 minutes Weekends: 30 minutes on Saturdays & 1 hour on Sundays
492	Drummoyne to Rockdale	Via Bexley, Kingsgrove, Belmore, Campsie, Croydon Park & Five Dock	Weekdays: 10-20 minutes peak / 30 minutes off peak Weekends: 30 minutes
493	Roselands to Rockdale	Via Beverly Hills, Kingsgrove & Bexley North	Weekdays: 1 hour between 9:30am-2:20pm Weekends: No services
N20	Riverwood to City Town Hall	Night-ride service	Weekdays: 1 hour between 1am-5am Weekends: 1 hour between 1am-5am

2.3.2. Rail Services

The Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area, states that the walking catchment for metropolitan railway stations includes all areas within an 800 metre radius of a station. It can be seen from **Figure 3** that Bexley North Railway Station is located approximately 700 metres north-east of the site and

hence, falls within the typical walking catchment area. Accordingly, staff and patrons of the proposed development would be able to readily access the Sydney rail network, as shown by **Figure 4**.

Bexley North Railway Station is serviced by a single railway line, being the T8 Airport and South Line. The T8 Railway Line generally runs in an east-west direction between Campbelltown / Macarthur and the Sydney CBD. **Table 3** below shows the notable town centres that are accessible along the T8 Railway Line and the average service headways during peak and off-peak periods.

Table 3: Rail Services

RAILWAY LINE	NOTABLE TOWN CENTRES ALONG LINE	AVERAGE HEADWAY
T8 Airport & South Line	Macarthur, Campbelltown, Revesby, Wolli Creek, Domestic Airport, International Airport & Sydney CBD	Weekdays: 3-7 minutes peak / 7-8 minutes off peak Weekends: 4-11 minutes

2.3.3. Cycle Network

Figure 3 shows the site has good access to the local bicycle network with an on-road cycle path provided along Edward Street, which provides a connection to the wider cycle path network. A number of additional on-road and off-road paths are also accessible to the north and south-east of the site as shown by **Figure 3**.

2.4. Existing Traffic Generation

At the time this report was prepared, the existing Club was not in operation and therefore does not generate any traffic.

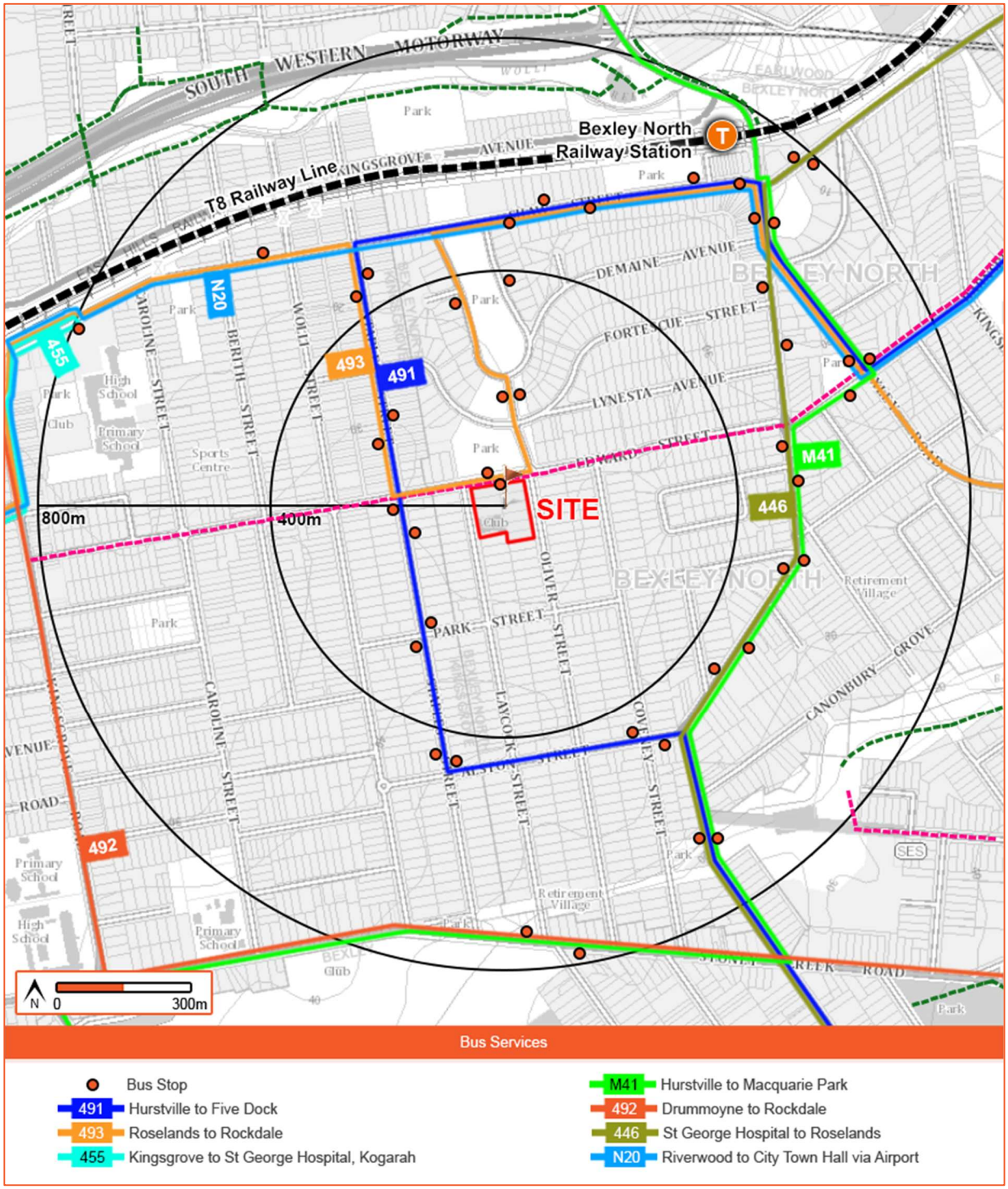


Figure 3: Public & Active Transport Services

Figure 4: Sydney Trains Rail Network – Suburban

2.5. Existing Intersection Performance

Traffic surveys were undertaken of two (2) key intersections within the vicinity of the site. These surveys were undertaken on Friday, 17/05/2019, between the hours of 6-8pm and Saturday, 18/05/2019 between the hours of 2-4pm, with these periods generally coinciding with the expected peak periods of the proposed development, as advised by the client. The raw survey data is included in **Appendix A** for reference, and the intersections surveyed are as follows:

- Edward Street / Laycock Street;
- Edward Street / Oliver Street.

The results of the surveys were used to develop existing (base-case) SIDRA models of the above key intersections for the Friday evening and Saturday afternoon peak periods discussed above. The base models were calibrated and validated against intersection queue lengths, as was observed during separate site inspections undertaken on a Friday evening and Saturday afternoon.

SIDRA modelling outputs a range of performance measures, in particular:

- Degree of Saturation (DOS) – The DOS is used to measure the performance of intersections where a value of 1.0 represents an intersection at theoretical capacity. As the performance of an intersection approaches DOS of 1.0, queue lengths and delays increase rapidly. It is usual to attempt to keep DOS to less than 0.9, with satisfactory intersection operation generally achieved with a DOS below 0.8.
- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For Give Way, Stop & Roundabout controlled intersections, the AVD reported is that for the movement with the highest AVD.
- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance, based on AVD.

Table 4 overleaf provides a recommended baseline for assessment of intersection performance as per the RMS Guide.

Table 4: Intersection Performance Criteria

LEVEL OF SERVICE	AVERAGE DELAY PER VEHICLE (seconds/vehicle)	TRAFFIC SIGNALS AND ROUNDABOUTS	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, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode or major treatment

A summary of the modelling results for the existing (base-case) models is provided in **Table 5** below. Reference should also be made to the detailed SIDRA outputs provided in **Appendix B** which provide additional information regarding intersection performance.

Table 5: Summary of SIDRA Modelling Results - Existing

INTERSECTION	SCENARIO	PERIOD	DOS	AVD (seconds)	LOS
Edward Street / Laycock Street[1]	Existing	Friday Evening	0.018	5.3	A
		Saturday Afternoon	0.016	5.2	A
Edward Street / Oliver Street[1]	Existing	Friday Evening	0.035	7.8	A
		Saturday Afternoon	0.032	7.7	A

[1]: *Results shown are for the movement with the highest delay in accordance with the RMS Guide.*

From **Table 5** above, it is evident that both the Edward Street / Laycock Street and Edward Street / Oliver Street intersections operate very well with low DOS, minimal AVD and Level of Service A during both the Friday evening and Saturday afternoon peak periods.

These results represent the existing (base-case) performance of the key intersections during the Friday evening and Saturday afternoon peak periods for the Club. Nevertheless, it is important to note that the most relevant use of these results is to compare the relative change in performance as a result of the proposed development as is discussed in Section 5.

3. Proposed Development

3.1. Overview

A detailed description of the proposed development for which approval is now sought, is outlined in the Statement of Environmental Effects prepared separately by Planning Ingenuity. Specifically, the DA seeks consent for the following:

- Demolition of the existing building located at the south-western corner of the site and construction of a new two (2) storey building comprising:

  Ground Floor
  - 300m^2 community facilities area;
  - 177.5m^2 bar/dining area associated with the bowling club;
  - Ancillary areas such as bathrooms; changerooms, reception, kitchen and storage rooms.

  Level 1
  - 219m^2 multi-purpose indoor area;
  - 56m^2 multi-purpose outdoor area;
  - Ancillary areas such as offices, library / cultural museum, audio visual room, bathrooms and storage.

- Retention of one (1) of three (3) existing bowling greens;
- At-grade and lower ground floor parking accommodating a total of 95 car spaces, including:
  - 72 standard car spaces;
  - 23 car spaces within an overflow section of the car park;
- A single on-site loading bay suitable for trucks up to an 8.8 metre Medium Rigid Vehicle (MRV);
- Relocation of the existing bus stop along the Edward Street frontage. This shall be relocated approximately 40 metres to the west of its current location;
- Two (2) access driveways including a 6.1 metre driveway onto Edward Street serving the car park and a 3.6 metre driveway onto Laycock Street serving the on-site loading bay.

The parking and traffic implications arising from the proposed development are discussed in Sections 4 and 5 respectively. A copy of the relevant architectural drawings, prepared by Katris Architects, are also included in Appendix C.

Additionally, correspondence with Transport for New South Wales (TfNSW) was undertaken to discuss the potential to relocate the subject bus stop, west of the proposed driveway. The email correspondence included as **Appendix D** details that TfNSW has no issues regarding the relocation based on their initial review. However, a detailed assessment would be required to be undertaken by Council and the bus operator.

3.2. Patronage Numbers

With reference to the Plan of Management, prepared separately by Planning Ingenuity, the proposed total staff / patronage numbers to be on-site at any one time are expected to be as follows:

3.2.1. Regular Operational Capacity

- Monday to Sunday, 9am-6pm: 200 persons;
- Sunday to Thursday, 6pm-11pm: 225 persons; and
- Friday to Saturday, 6pm-1am: 240 persons.

3.2.2. Capacity During Special Events & Functions

Given the nature of the development, it is anticipated that special events and functions will be held by the Club. In this regard, it is acknowledged that up to a total of 445 persons may be on-site at any one time. These events / functions however, will only be held occasionally throughout the year (and predominantly on Friday, Saturday and Sunday) approximately 15% of the time. Under regular operation being approximately 85% of the time, the Club will accommodate persons up to a maximum of 240 persons (Friday to Saturday, 6pm-1am)

4. Parking Requirements

4.1. Car Parking

4.1.1. Parking Requirements of the Existing / Historical Development

Whilst the existing Bexley Bowling Club does not currently operate, it is considered appropriate that the historical parking demands of the development be taken into consideration. This is particularly relevant noting that the existing development does not provide any on-site car parking, requiring all parking demands to be accommodated on-street.

The Rockdale DCP 2011 does not stipulate a car parking rate for bowling clubs and accordingly, the parking requirements of the existing development have been assessed in accordance with the RMS Guide. The RMS Guide recommends application of the following parking rates for bowling greens / clubs:

- 30 spaces for the first green; plus
- 15 spaces for each additional green.

The existing development is comprised of three (3) bowling greens and a club building, requiring a total of 60 car parking spaces under the RMS Guide. As discussed above, the existing development does not provide any on-site parking and accordingly, the demand for all 60 car parking spaces would need to be accommodated on-street.

4.1.2. Parking Requirements Under the Rockdale Development Control Plan 2011

The Rockdale DCP 2011 does not stipulate a parking rate for bowling greens / clubs. It does however stipulate the following:

> *"Where a parking rate has not been specified in the table, the RMS Guide shall be used to calculate the parking requirements for the proposed development".*

In accordance with the above, the RMS bowling green rates have been applied to assess the parking requirements associated with the bowling green and 177.5m^2 club floor space.

The remaining floor space of the building shall accommodate a combination of restaurant, community / multi-purpose uses, and recreational / amusement uses such as billiards tables. With this in mind, it is considered appropriate to adopt a car parking rate of 1.0 space / 40m^2 GFA in accordance with the Rockdale DCP 2011 for the remaining floor space of the development proposal.

Table 6 overleaf shows the minimum car parking requirements under the applicable parking rates and the proposed provision in response.

Table 6: Car Parking Requirement & Provision

TYPE	NO.	DCP / RMS PARKING RATE	MINIMUM REQUIREMENT	PROPOSED PROVISION
Bowling Green	1	30 spaces for 1st green plus 15 spaces for each additional green	30	95
Multi-Purpose / Community Facility [1]	575m²	1.0 space / 40m²	15	
		TOTAL	***45***	***95***

[1] Note: 575m² comprises 300m² of community floor space on Ground Floor and 275m² of multi-purpose floor space on Level 1.

It is evident from **Table 6** above that the proposal requires a minimum of 45 car parking spaces under application of both the Rockdale DCP 2011 and RMS Guide. In response, the proposal provides 95 car spaces and therefore satisfies the minimum requirements of both policies, and will ensure that all parking demands are wholly accommodated on-site with no reliance on on-street parking.

4.1.3. Parking Requirements Based on Historical Surveys

As an additional check, reference was made to recent travel mode questionnaire surveys undertaken by PDC Consultants of Canada Bay Club (CBC) located at 4 William Street & 13 Bevin Avenue, Five Dock. The surveys were undertaken to gain an understanding of the travel mode characteristics of CBC patrons and were conducted on Friday, 13/10/2017, and Saturday 21/10/2017, between the hours of 6-11pm. In summary, the survey results confirmed the following patron travel mode traits of CBC:

- 88% of CBC patrons utilised private vehicles for journeys to / from the Club (i.e. car driver, car passenger and car passenger who was dropped off);
- The remaining 12% of patrons utilised alternative forms of transport including, public transport, taxis and other;
- An average car occupancy rate of 2.46 persons / car was reported.

It is acknowledged that whilst the Club will comprise of a bowling green and multi-purpose / community facility floor space, it is considered that it would be comparable with CBC and display similar travel mode characteristics for the following reasons:

- The Club will operate as a 'licenced premises' and will serve alcoholic beverages;
- The Club will operate with late hours of operation of up till 1am (Friday and Saturday);
- Similar to CBC, the Club will hold functions / events including, lunches, birthdays etc.
- The CBC has limited public and active transport connections being, 2.0 kilometres from the nearest railway station compared to the Club being approximately 700 metres south-west of Bexley North Railway Station.

Having regard for the above, the expected car parking demand of the Club based on historical surveys can be determined as shown by **Table 7** overleaf.

Table 7: Expected Parking Demand of Bexley Bowling Club Based on Comparable / Historical Survey Data

TYPE	NO. ON-SITE AT ANY ONE TIME	% BY CAR	PARKING RATE	EXPECTED PARKING DEMAND
Patrons	240[1]	88%	1.0 space / 2.46 persons	86
			TOTAL	***95***

[1] *Note: Based on maximum regular operating capacity of 240 persons.*

It is evident from **Table 7** above that the Club is expected to generate a parking demand for 86 car spaces based on the survey results of CBC. As previously mentioned, the development provides 95 car spaces and therefore exceeds the minimum car parking requirement based on this assessment and will ensure that all parking demands are wholly accommodated on-site with no reliance on on-street parking.

It is acknowledged that during special events / functions held by the Club, it is expected that the proposed car parking provision would not be able to accommodate all parking demands on-site and therefore, some reliance on available on-street parking near the vicinity of the site is required. As previously mentioned in Section 3.2.2, special events / functions will only be held approximately 15% of the time during a typical year, with the remaining 85% to operate under regular capacity of up to a maximum of 240 persons. In this regard, the proposed car parking provision of 95 spaces is considered to be acceptable, being consistent with the guidelines recommended in the RMS Guide which stipulate a development should accommodate the 85th percentile of car parking demand on-site. The reliance on on-street car parking is therefore considered to be acceptable noting the infrequent occurrence of these special events / functions.

4.2. Accessible Car Parking

Consultation with the Applicant's access consultant has confirmed that the development is required to provide a minimum of two (2) accessible car parking spaces. In response, the development provides three (3) accessible car parking spaces in accordance with the access consultants requirements, and this is considered an acceptable level of provision.

It is noted the three (3) accessible car spaces are provided undercover and reflected on the architectural drawings provided as **Appendix C.**

4.3. Motorcycle Parking

The Rockdale DCP 2011 stipulates a minimum motorcycle parking rate of 1.0 space / 20 car spaces and accordingly, the proposal is required to provide 5 motorcycle spaces. In response, the development provides 5 motorcycle spaces, thereby satisfying the minimum requirement of the Rockdale DCP 2011. The proposed motorcycle parking provision is therefore considered acceptable.

4.4. Bicycle Parking

The Rockdale DCP 2011 stipulates a minimum bicycle parking rate of 1.0 space / 200m^2 GFA for 'retail and commercial' uses. Application of this rate to the proposal, results in a requirement for 3 bicycle spaces under the Rockdale DCP 2011. In response, the development provides 9 bicycle spaces, thereby satisfying the minimum requirement of the Rockdale DCP 2011. The proposed bicycle parking provision is therefore considered acceptable.

4.5. Service Vehicle Parking

Neither of the Rockdale DCP 2011 or RMS Guide policies stipulate a service vehicle parking rate for bowling clubs. Nevertheless, the development provides a single loading bay located at the south-western corner of the site, and this has been designed to accommodate service vehicles up to and including an 8.8 metre MRV. This level of provision is considered acceptable noting that the development would generate a minimal demand for service vehicle parking with only 1-2 deliveries expected per day.

Trucks will be required to reverse into the loading bay from Laycock Street, and depart from the loading bay in a forward direction onto Laycock Street. This arrangement is considered acceptable noting service vehicles would have performed similar manoeuvres to service the existing development during its operation, and complies with Clause 3.2.3.2 of AS 2890.2.

Additionally, swept path analysis has been undertaken of the proposed service vehicle parking arrangements, with the use of an 8.8 metre MRV, as defined within AS 2890.2. The results are provided as **Appendix E** and confirm that satisfactory entry and exit manoeuvres will be achieved to the loading bay.

It is also noted the proposed driveway serving the loading bay onto Laycock Street is setback from the southern boundary by approximately 4.0 metres. This is an improvement to the current arrangement of the development considering the existing driveway is provided immediately adjacent to the neighbouring residential dwelling, 70 Laycock Street.

4.6. Managing Transport Demands

To better communicate the available transport connections to / from the Club, a Green Travel Plan (GTP) shall be prepared and submitted to Council for approval prior to the issue of any occupation certificate. The primary purpose of a GTP is to coordinate a site-wide approach to influence the travel behaviour of employees and patrons away from the use of private vehicles towards more efficient modes of transport including active transport such as walking and cycling; public transport such as train and bus, and car-pooling and car sharing.

Having regard for the above, Council is invited to impose a suitable condition of consent required to be submitted and approved by Council, prior to the issue of any occupation certificate.

5. Traffic Impacts

5.1. Trip Generation

Neither the RMS Guide or RMS Guide Update include a traffic generation rate for bowling clubs or community facility / multi-purpose uses. Accordingly, the expected traffic generation of the development has been assessed using a 'first principles' approach, which takes into account the total parking demand of the development, and the expected time periods at which patrons would arrive at and depart from the development.

For the purposes of a conservative assessment, it has been assumed that each car parking space would generate one (1) vehicle trip, resulting in a peak period traffic generation of 45 vehicle trips / hour.

Based on information provided by the client and having regard for the time periods at which background traffic volumes on the external road network would 'peak', the critical periods for the traffic assessment of the proposal are as follows:

- Friday between 6-7pm when patrons arrive at the development for meals and refreshments;
- Saturday between 3-4pm when patrons arrive at / depart from the development for lawn bowls and / or meals and refreshments.

The traffic generation and inbound / outbound splits have therefore been assessed as follows:

- 45 vehicle trips / hour (36 in / 9 out) between 6-7pm on Friday;
- 45 vehicle trips / hour (27 in / 18 out) between 3-4pm on Saturday.

The above assumes an 80% inbound and 20% outbound split during the Friday evening peak noting patrons would typically arrive at the development during this period. A more even distribution would be expected during the Saturday peak period and accordingly, the above assumes a 60% inbound and 40% outbound split.

Additionally, the above generations have been considered as a net increase given that the existing Club does not generate any traffic.

5.2. Traffic Impacts

It is expected that the above traffic generation will be distributed to either the east or west of the site along Edward Street. The expected distribution is as follows:

- To / from the East: 50% of all traffic;
- To / from the West: 50% of all traffic.

The distribution of the traffic generation has been assessed having regard for the results of the traffic turn count surveys of both the Edward Street / Laycock Street and Edward Street / Oliver Street intersections. A Traffic Distribution Diagram is provided in **Appendix F** which shows the expected distribution of the development traffic through the Edward Street / Laycock Street and Edward Street / Oliver Street intersections.

The traffic impacts of the increased volumes through the key intersections, was analysed using SIDRA. A summary of the modelling results is presented in **Table 8** below, with the detailed SIDRA outputs provided in **Appendix B**. **Table 8** also provides a comparison against the existing intersection performances which have been extracted from **Table 5**.

Table 8: Summary of SIDRA Modelling Results – Existing plus Development

INTERSECTION	SCENARIO	PERIOD	DOS	AVD (seconds)	LOS
Edward Street / Laycock Street[1]	Existing	Friday	0.018	5.3	A
		Saturday	0.016	5.2	A
	Existing + Development	Friday	0.021	5.6	A
		Saturday	0.019	5.5	A
Edward Street / Oliver Street[1]	Existing	Friday	0.035	7.8	A
		Saturday	0.032	7.7	A
	Existing + Development	Friday	0.037	7.9	A
		Saturday	0.033	7.8	A

[1]: *Results shown are for the movement with the highest delay in accordance with the RMS Guide.*

As can be seen from **Table 8**, the increase in traffic volumes as a result of the proposed development, will have negligible impacts on the performance of the Edward Street / Laycock Street and Edward Street / Oliver Street intersections. Indeed, both intersections will experience a very minor increase in DOS and AVD, with no change to the existing Level of Service A.

The increase in traffic generation as a result of the proposed development will therefore be accommodated by the existing road network, with no external improvements required. The traffic impacts of the proposed development are therefore considered acceptable.

6. Design Aspects

6.1. Access

With 95 car parking spaces of User Class 2, the proposed development requires a Category 2 Driveway under Table 3.1 of AS 2890.1, being a combined entry / exit driveway of width 6.0 to 9.0 metres. In response, the development proposes a combined entry / exit driveway of width 6.1 metres onto Edward Street, and therefore satisfies the requirements of AS 2890.1. The proposed arrangements have also been assessed using swept path analysis which confirms compliance with AS 2890.1, and that the proposed access arrangements will operate safely and efficiently. The results of this analysis are included in **Appendix E** for reference.

Vehicle access to the loading bay is provided via a 3.6 metre wide driveway onto Laycock Street, located at the south-western corner of the site. Swept path analysis has been undertaken of the proposed service vehicle parking arrangements, with the use of an 8.8 metre MRV, as defined within AS 2890.2. The results are provided as **Appendix E** and confirm that satisfactory entry and exit manoeuvres will be achieved to the loading bay. Trucks will be required to reverse into the loading bay from Laycock Street, and depart from the loading bay in a forward direction onto Laycock Street. This arrangement is considered acceptable and consistent with the existing / historical use of the Club, and complies with Clause 3.2.3.2 of AS 2890.2.

In summary, the proposed access arrangements are considered acceptable and comply with the relevant requirements of AS 2890.1 and AS 2890.2.

6.2. Internal Design

The proposed internal parking arrangements comply with the relevant requirements of AS 2890.1, AS 2890.2, AS 2890.3 and AS 2890.6, with the following design aspects considered noteworthy:

6.2.1. Driveway

- The driveway has a maximum grade of 12.5% (1 in 8) for the first 8.0 metres into the site and this generally complies with Clause 3.3 of AS 2890.1.
- The vehicular ramp has a minimum width of 6.1 metres between kerbs and will therefore accommodate two-lane, two-way traffic flow.

6.2.2. Parking Modules

- All car parking spaces are provided in accordance with the User Class 2 requirements of AS 2890.1, having a minimum space width of 2.5 metres and length of 5.4 metres, with an aisle width of 6.2 metres.
- All accessible car parking spaces are provided with a minimum space width of 2.5 metres and length of 5.4 metres, with an aisle width of 6.2 metres. Additionally, these spaces are located immediately adjacent to a 2.5 metre wide and 5.4 metre long shared area, thereby satisfying the requirements of AS 2890.6.

- The MRV bay has a minimum space length of 8.8 metres and width of 3.5 metres, and therefore complies with AS 2890.2.

- All walls / columns are located outside of the space design envelope, as required under Figure 5.2 of AS 2890.1.

6.2.3. Head Heights

- A clear head height of 2.2 metres is required above all traffic circulation and car parking areas in accordance with Clause 5.3.1 of AS 2890.1.

- There are no head height restrictions above the loading bay, ensuring that a head height clearance in excess of 4.5 metres is provided in accordance with AS 2890.2.

6.2.4. Other Design Aspects

- A 2.5 metre by 2.0 metre visual splay is provided on the egress side of the car park driveway, at the property boundary, in accordance with Figure 3.3 of AS 2890.1. This area is to be kept clear of all vertical obstructions with a height greater than 0.6 metres.

- All bicycle parking spaces are provided as Security Level B facilities, in accordance with AS 2890.3.

- All motorcycle spaces are provided in accordance with Clause 2.4.7 of AS 2890.1.

In summary, the internal parking arrangements have been designed in accordance with AS 2890.1, AS 2890.2, AS 2890.3 and AS 2890.6. Any minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

7. Conclusions

In summary:

- PDC Consultants has been commissioned by Order of AHEPA NSW Inc. to undertake a traffic impact assessment of a Development Application (DA) relating to the proposed redevelopment of Bexley Bowling Club at 72 Laycock Street, Bexley North. In summary, the DA seeks consent for the following:
    - Demolition of the existing building located at the south-western corner of the site and construction of a new two (2) storey building;
    - Retention of one (1) of three (3) existing bowling greens;
    - At-grade and lower ground floor parking accommodating a total of 95 car spaces and an on-site pick-up / drop-off bay. 72 standard car spaces and 23 spaces within an overflow section of the car park;
    - A single on-site loading bay suitable for trucks up to an 8.8 metre MRV;
    - Relocation of the existing bus stop along the Edward Street frontage;
    - Two (2) access driveways including a 6.1 metre wide driveway onto Edward Street serving the car park and 3.6 metre wide driveway onto Laycock Street serving the on-site loading bay.
- The traffic generation assessment confirms that the development will generate 45 vehicle trips / hour during both the Friday evening and Saturday afternoon peak periods. The SIDRA modelling results confirm that the proposed increase in traffic generation will have a negligible impact on the performance of the identified key intersections with only minor increases to degree of saturation and average delay, and no change to the existing Level of Services during the Friday and Saturday peak periods. The traffic impacts of the development are therefore considered acceptable.
- The RMS Guide and Rockdale DCP 2011 requires the Club to provide a total of 45 car parking spaces. In response, the development proposes a total of 95 car spaces and therefore satisfies the minimum requirements of both policies. An additional check of the proposed car parking provision was undertaken by applying the travel mode characteristics of Canada Bay Club to Bexley Bowling Club. This assessment confirms the proposed car parking provision is sufficient to accommodate the regular operating capacity of the Club with 240 persons on-site at any one time.
- It is acknowledged during special events / functions held by the Club with a maximum of 445 persons on-site at any one time, some reliance on on-street parking near the vicinity of the site is required. This is considered acceptable noting that these events / functions are held infrequently throughout the year.
- The development provides 6 motorcycle spaces 9 bicycle spaces in accordance with the Rockdale DCP 2011. The proposed motorcycle and bicycle parking provisions are therefore considered acceptable.
- Council is invited to impose a suitable condition of consent requiring a Green Travel Plan (GTP) to be submitted and approved prior to the issue of any occupation certificate. The primary purpose of a GTP is to coordinate a site-wide approach to influence the travel behaviour of employees and patrons away from the use of private vehicles towards more efficient modes of transport including active transport such as walking and cycling; public transport such as train and bus, and car-pooling and car sharing.

- The proposed access and internal parking arrangements comply with the relevant requirements of AS 2890.1, AS 2890.2, AS 2890.3 and AS 2980.6. Any minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

It is therefore concluded that the proposed development is supportable on traffic planning grounds.

Appendix A

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Saturday 18th May 2019

Lights

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Time Per	T	R	L	R	L	T	TOT
1400 - 1415	12	2	0	1	1	31	**47**
1415 - 1430	17	1	1	1	1	26	**47**
1430 - 1445	19	3	2	5	2	23	**54**
1445 - 1500	20	2	1	2	0	26	**51**
1500 - 1515	16	0	0	4	1	24	**45**
1515 - 1530	27	1	0	3	1	19	**51**
1530 - 1545	16	0	3	2	0	20	**41**
1545 - 1600	20	2	0	1	1	19	**43**
Per End	**147**	**11**	**7**	**19**	**7**	**188**	**379**

Heavies

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Time Per	T	R	L	R	L	T	TOT
1400 - 1415	0	0	0	0	0	0	**0**
1415 - 1430	0	0	0	0	0	0	**0**
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**
Per End	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Time Per	T	R	L	R	L	T	TOT
1400 - 1415	12	2	0	1	1	31	**47**
1415 - 1430	17	1	1	1	1	26	**47**
1430 - 1445	19	3	2	5	2	23	**54**
1445 - 1500	20	2	1	2	0	26	**51**
1500 - 1515	16	0	0	4	1	24	**45**
1515 - 1530	27	1	0	3	1	19	**51**
1530 - 1545	16	0	3	2	0	20	**41**
1545 - 1600	20	2	0	1	1	19	**43**
Per End	**147**	**11**	**7**	**19**	**7**	**188**	**379**

Lights

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Peak Per	T	R	L	R	L	T	TOT
1400 - 1500	68	8	4	9	4	106	**199**
1415 - 1515	72	6	4	12	4	99	**197**
1430 - 1530	82	6	3	14	4	92	**201**
1445 - 1545	79	3	4	11	2	89	**188**
1500 - 1600	79	3	3	10	3	82	**180**
PEAK HR	**82**	**6**	**3**	**14**	**4**	**92**	**201**

Heavies

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Peak Per	T	R	L	R	L	T	TOT
1400 - 1500	0	0	0	0	0	0	**0**
1415 - 1515	0	0	0	0	0	0	**0**
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**
PEAK HR	**0**	**0**	**0**	**0**	**0**	**0**	**0**

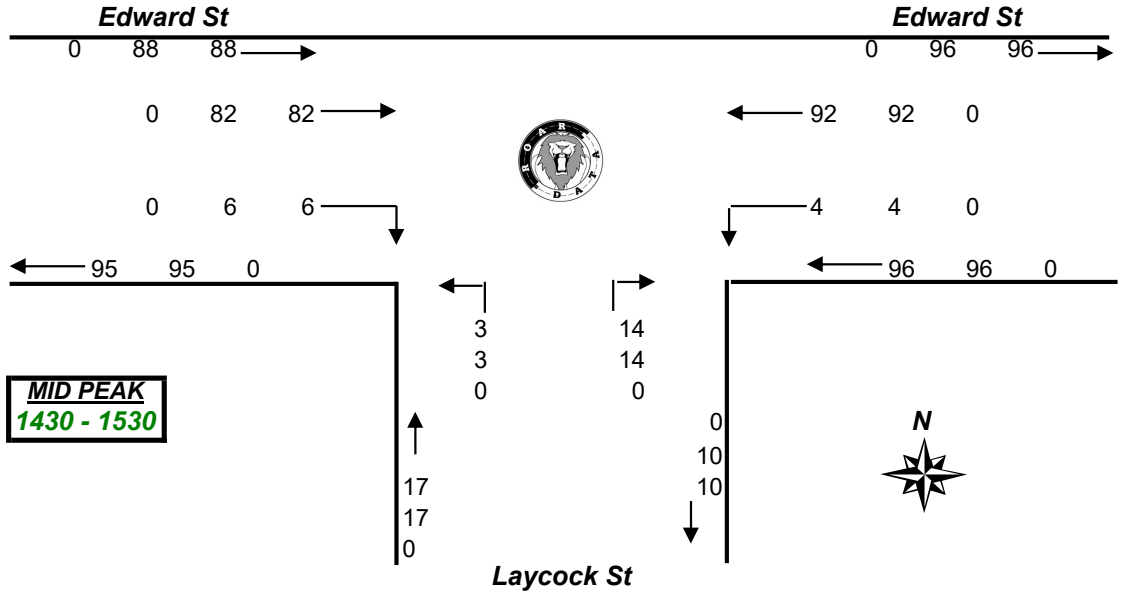
Combined

	WEST		SOUTH		EAST		
	Edward St		Laycock St		Edward St		
Peak Per	T	R	L	R	L	T	TOT
1400 - 1500	68	8	4	9	4	106	**199**
1415 - 1515	72	6	4	12	4	99	**197**
1430 - 1530	82	6	3	14	4	92	**201**
1445 - 1545	79	3	4	11	2	89	**188**
1500 - 1600	79	3	3	10	3	82	**180**
PEAK HR	**82**	**6**	**3**	**14**	**4**	**92**	**201**

Peds

	WEST	SOUTH	EAST	
Time Per	Edward St	Laycock St	Edward St	TOT
1400 - 1415	2	1	0	**3**
1415 - 1430	0	0	3	**3**
1430 - 1445	2	0	0	**2**
1445 - 1500	2	0	0	**2**
1500 - 1515	1	2	0	**3**
1515 - 1530	2	0	0	**2**
1530 - 1545	2	0	0	**2**
1545 - 1600	1	0	0	**1**
Per End	**12**	**3**	**3**	**18**

	WEST	SOUTH	EAST	
Peak Per	Edward St	Laycock St	Edward St	TOT
1400 - 1500	6	1	3	**10**
1415 - 1515	5	2	3	**10**
1430 - 1530	7	2	0	**9**
1445 - 1545	7	2	0	**9**
1500 - 1600	6	2	0	**8**
PEAK HR	**7**	**2**	**0**	**9**



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

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 74 Laycock St
Day/Date : Saturday 18th May 2019

MID

TOTAL VOLUMES FOR COUNT PERIOD

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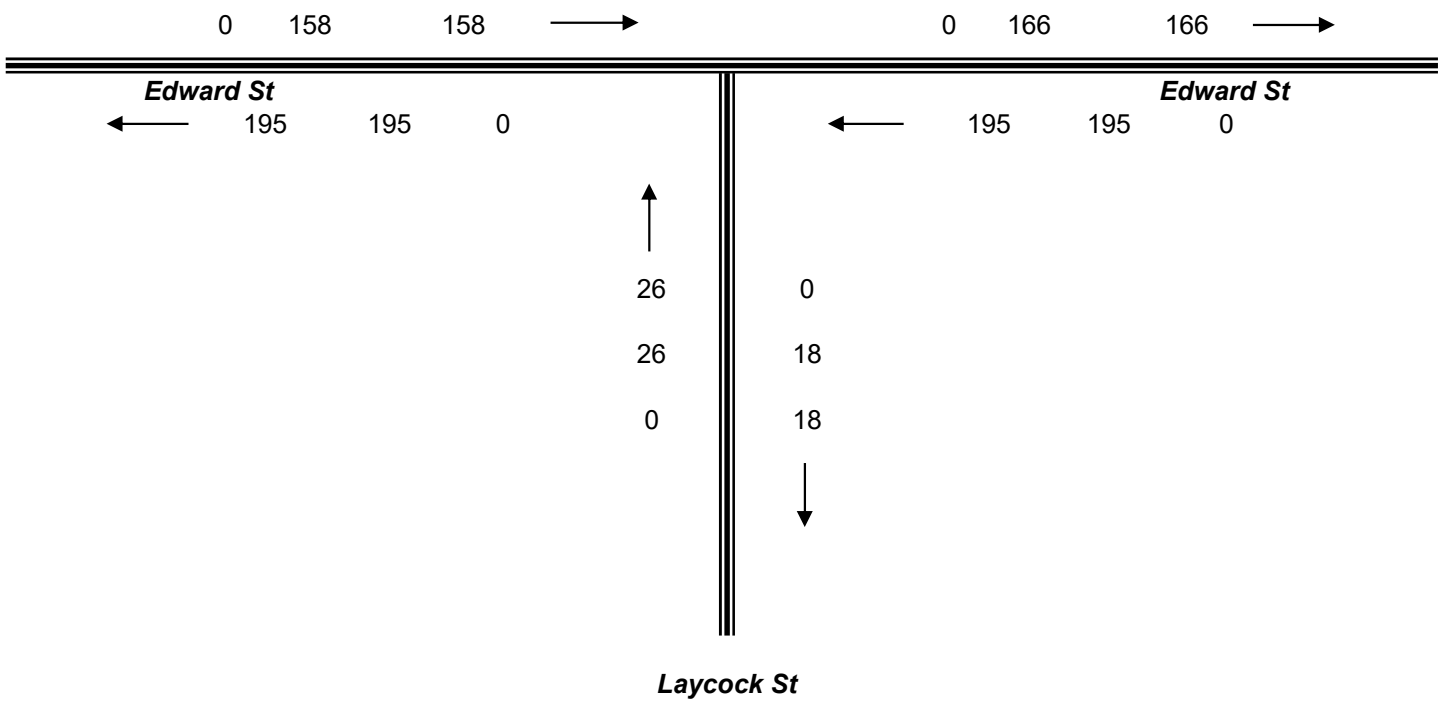


R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Saturday 18th May 2019

Lights

Time Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1815	20	1	0	2	0	22	**45**
1815 - 1830	16	0	1	1	1	16	**35**
1830 - 1845	15	0	3	1	1	16	**36**
1845 - 1900	17	3	2	2	0	22	**46**
1900 - 1915	11	0	1	0	1	15	**28**
1915 - 1930	9	1	1	1	0	13	**25**
1930 - 1945	4	0	1	0	1	14	**20**
1945 - 2000	9	0	1	1	1	7	**19**
Per End	**101**	**5**	**10**	**8**	**5**	**125**	**254**

Heavies

Time Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1815	0	0	0	0	0	0	**0**
1815 - 1830	0	0	0	0	0	0	**0**
1830 - 1845	0	0	0	0	0	0	**0**
1845 - 1900	0	0	0	0	0	0	**0**
1900 - 1915	0	0	0	0	0	0	**0**
1915 - 1930	0	0	0	0	0	0	**0**
1930 - 1945	0	0	0	0	0	0	**0**
1945 - 2000	0	0	0	0	0	0	**0**
Per End	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

Time Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1815	20	1	0	2	0	22	**45**
1815 - 1830	16	0	1	1	1	16	**35**
1830 - 1845	15	0	3	1	1	16	**36**
1845 - 1900	17	3	2	2	0	22	**46**
1900 - 1915	11	0	1	0	1	15	**28**
1915 - 1930	9	1	1	1	0	13	**25**
1930 - 1945	4	0	1	0	1	14	**20**
1945 - 2000	9	0	1	1	1	7	**19**
Per End	**101**	**5**	**10**	**8**	**5**	**125**	**254**

Lights

Peak Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1900	68	4	6	6	2	76	**162**
1815 - 1915	59	3	7	4	3	69	**145**
1830 - 1930	52	4	7	4	2	66	**135**
1845 - 1945	41	4	5	3	2	64	**119**
1900 - 2000	33	1	4	2	3	49	**92**
PEAK HR	**68**	**4**	**6**	**6**	**2**	**76**	**162**

Heavies

Peak Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1900	0	0	0	0	0	0	**0**
1815 - 1915	0	0	0	0	0	0	**0**
1830 - 1930	0	0	0	0	0	0	**0**
1845 - 1945	0	0	0	0	0	0	**0**
1900 - 2000	0	0	0	0	0	0	**0**
PEAK HR	**0**	**0**	**0**	**0**	**0**	**0**	**0**

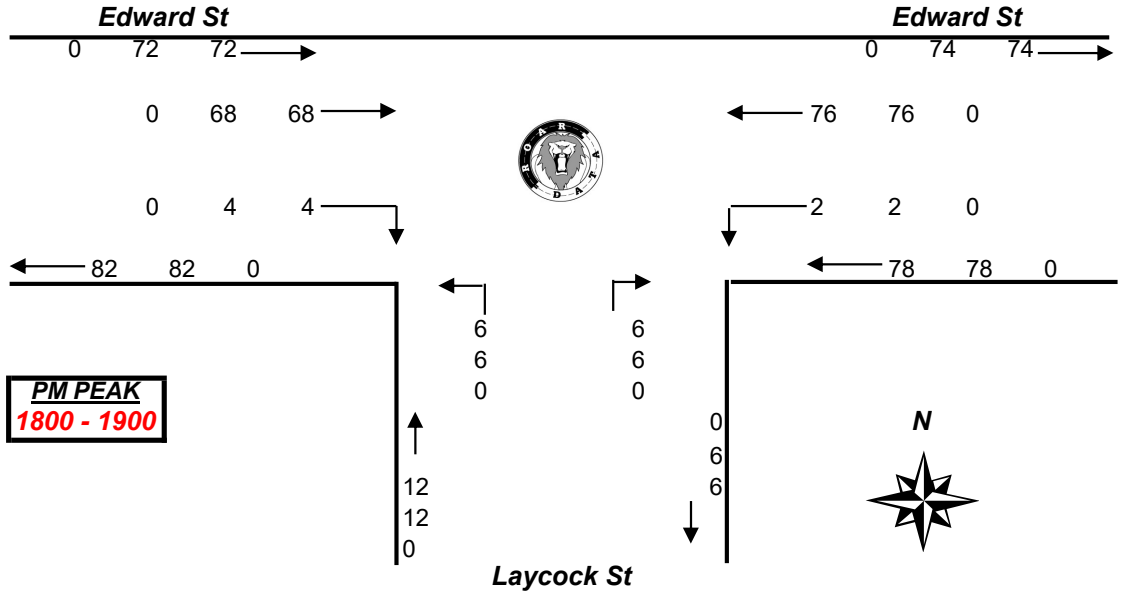
Combined

Peak Per	WEST Edward St T	WEST Edward St R	SOUTH Laycock St L	SOUTH Laycock St R	EAST Edward St L	EAST Edward St T	TOT
1800 - 1900	68	4	6	6	2	76	**162**
1815 - 1915	59	3	7	4	3	69	**145**
1830 - 1930	52	4	7	4	2	66	**135**
1845 - 1945	41	4	5	3	2	64	**119**
1900 - 2000	33	1	4	2	3	49	**92**
PEAK HR	**68**	**4**	**6**	**6**	**2**	**76**	**162**

Peds

Time Per	WEST Edward St	SOUTH Laycock St	EAST Edward St	TOT
1800 - 1815	1	0	0	**1**
1815 - 1830	1	0	1	**2**
1830 - 1845	0	1	0	**1**
1845 - 1900	0	0	0	**0**
1900 - 1915	0	0	0	**0**
1915 - 1930	0	0	0	**0**
1930 - 1945	0	0	0	**0**
1945 - 2000	0	2	0	**2**
Per End	**2**	**3**	**1**	**6**

Peak Per	WEST Edward St	SOUTH Laycock St	EAST Edward St	TOT
1800 - 1900	2	1	1	**4**
1815 - 1915	1	1	1	**3**
1830 - 1930	0	1	0	**1**
1845 - 1945	0	0	0	**0**
1900 - 2000	0	2	0	**2**
PEAK HR	**2**	**1**	**1**	**4**

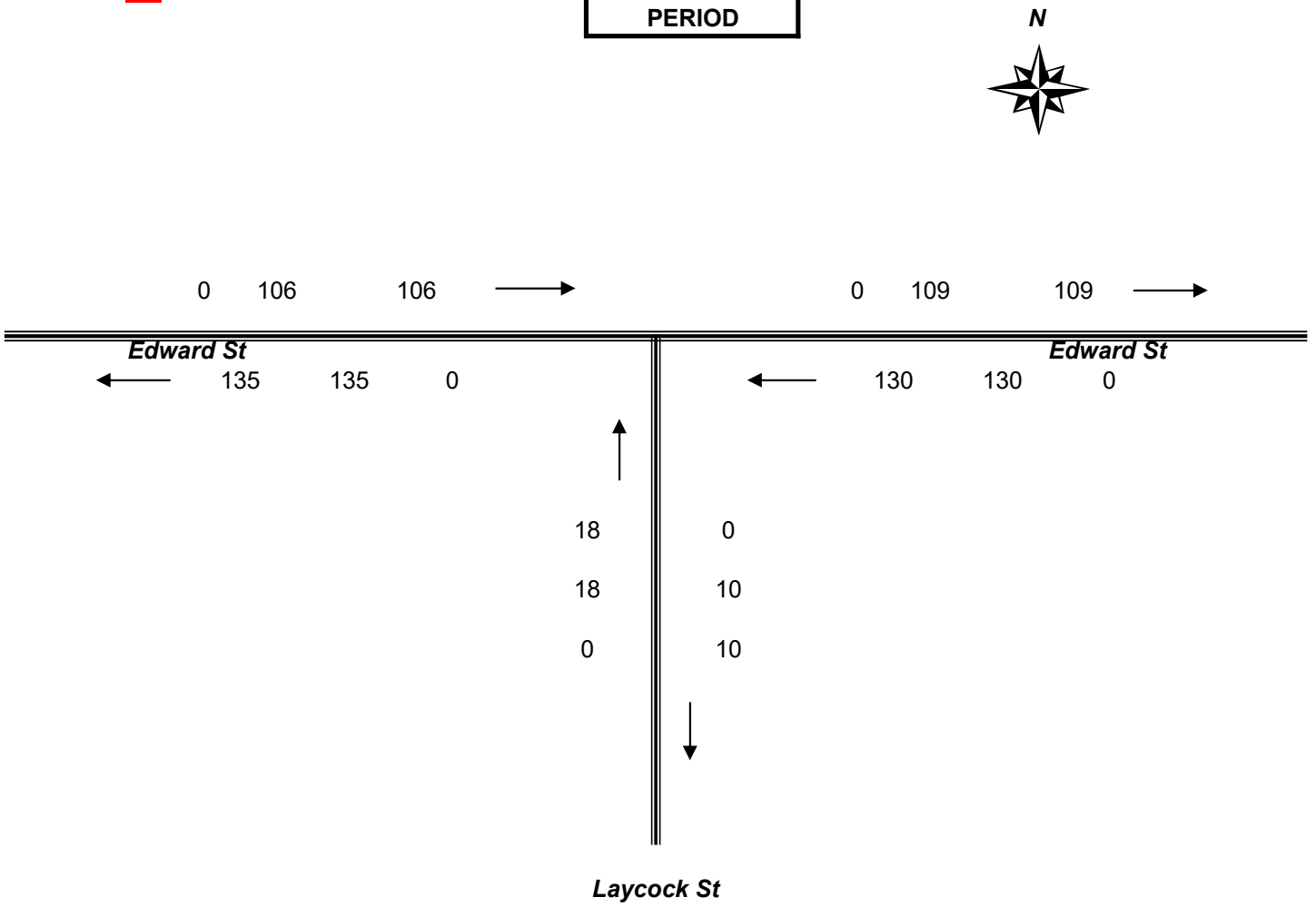


R.O.A.R DATA
Reliable, Original & Authentic Results
Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 74 Laycock St
Day/Date : Saturday 18th May 2019

PM

TOTAL VOLUMES FOR COUNT PERIOD



R.O.A.R. DATA

Reliable, Original & Authentic Results

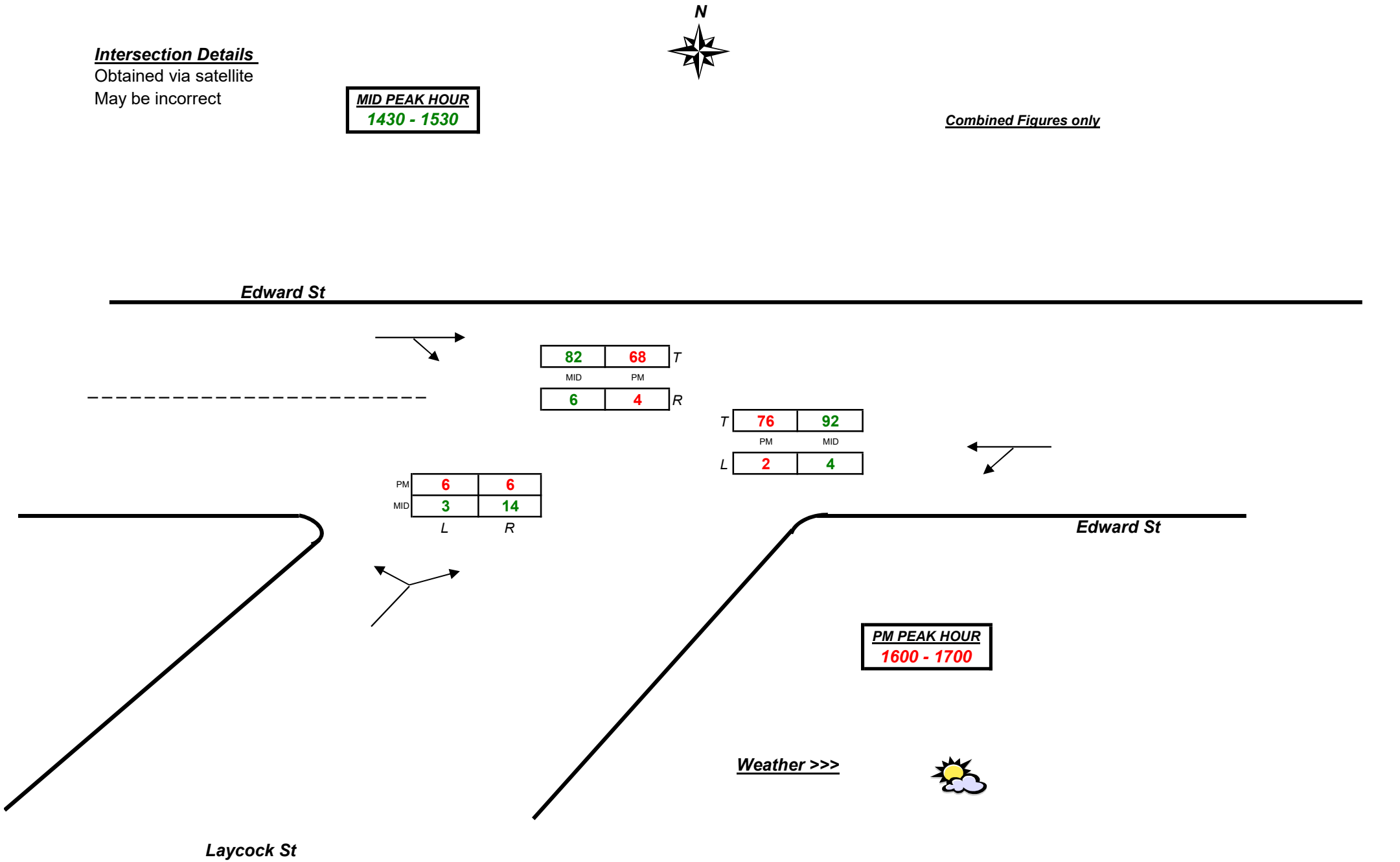
Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Saturday 18th May 2019

Intersection Details
Obtained via satellite
May be incorrect

MID PEAK HOUR
1430 - 1530

Combined Figures only



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Friday 17th May 2019

Lights

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Time Per	T	R	L	R	L	T	TOT
1800 - 1815	29	2	3	4	1	38	**77**
1815 - 1830	19	4	5	2	1	35	**66**
1830 - 1845	19	1	3	0	1	33	**57**
1845 - 1900	15	0	2	3	0	19	**39**
1900 - 1915	16	3	2	0	1	28	**50**
1915 - 1930	16	2	0	1	0	23	**42**
1930 - 1945	18	1	1	2	0	12	**34**
1945 - 2000	11	0	1	2	2	10	**26**
Per End	**143**	**13**	**17**	**14**	**6**	**198**	**391**

Heavies

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Time Per	T	R	L	R	L	T	TOT
1800 - 1815	0	0	0	0	0	0	**0**
1815 - 1830	0	0	0	0	0	0	**0**
1830 - 1845	0	0	0	0	0	0	**0**
1845 - 1900	0	0	0	0	0	0	**0**
1900 - 1915	0	0	0	0	0	0	**0**
1915 - 1930	0	0	0	0	0	0	**0**
1930 - 1945	0	0	0	0	0	0	**0**
1945 - 2000	0	0	0	0	0	0	**0**
Per End	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Time Per	T	R	L	R	L	T	TOT
1800 - 1815	29	2	3	4	1	38	**77**
1815 - 1830	19	4	5	2	1	35	**66**
1830 - 1845	19	1	3	0	1	33	**57**
1845 - 1900	15	0	2	3	0	19	**39**
1900 - 1915	16	3	2	0	1	28	**50**
1915 - 1930	16	2	0	1	0	23	**42**
1930 - 1945	18	1	1	2	0	12	**34**
1945 - 2000	11	0	1	2	2	10	**26**
Per End	**143**	**13**	**17**	**14**	**6**	**198**	**391**

Lights

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Peak Per	T	R	L	R	L	T	TOT
1800 - 1900	82	7	13	9	3	125	**239**
1815 - 1915	69	8	12	5	3	115	**212**
1830 - 1930	66	6	7	4	2	103	**188**
1845 - 1945	65	6	5	6	1	82	**165**
1900 - 2000	61	6	4	5	3	73	**152**
PEAK HR	**82**	**7**	**13**	**9**	**3**	**125**	**239**

Heavies

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Peak Per	T	R	L	R	L	T	TOT
1800 - 1900	0	0	0	0	0	0	**0**
1815 - 1915	0	0	0	0	0	0	**0**
1830 - 1930	0	0	0	0	0	0	**0**
1845 - 1945	0	0	0	0	0	0	**0**
1900 - 2000	0	0	0	0	0	0	**0**
PEAK HR	**0**	**0**	**0**	**0**	**0**	**0**	**0**

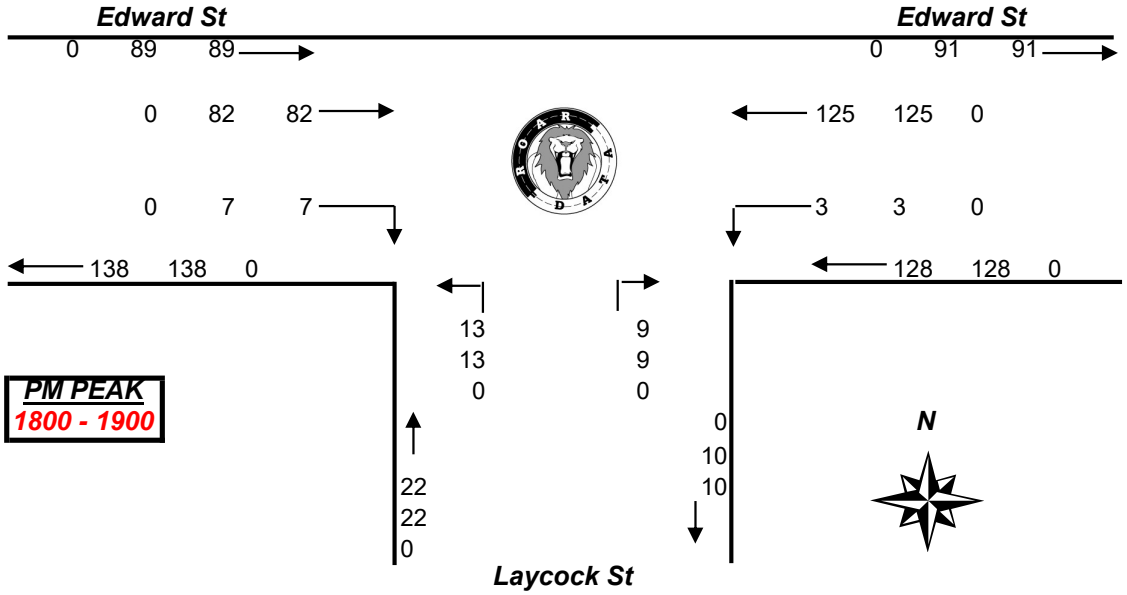
Combined

	WEST		SOUTH		EAST		
	Edward St		*Laycock St*		*Edward St*		
Peak Per	T	R	L	R	L	T	TOT
1800 - 1900	82	7	13	9	3	125	**239**
1815 - 1915	69	8	12	5	3	115	**212**
1830 - 1930	66	6	7	4	2	103	**188**
1845 - 1945	65	6	5	6	1	82	**165**
1900 - 2000	61	6	4	5	3	73	**152**
PEAK HR	**82**	**7**	**13**	**9**	**3**	**125**	**239**

Peds

	WEST	SOUTH	EAST	
Time Per	Edward St	Laycock St	Edward St	TOT
1800 - 1815	0	0	0	**0**
1815 - 1830	0	0	0	**0**
1830 - 1845	0	0	0	**0**
1845 - 1900	0	0	0	**0**
1900 - 1915	0	0	0	**0**
1915 - 1930	0	0	0	**0**
1930 - 1945	0	0	0	**0**
1945 - 2000	0	0	0	**0**
Per End	**0**	**0**	**0**	**0**

	WEST	SOUTH	EAST	
Peak Per	Edward St	Laycock St	Edward St	TOT
1800 - 1900	0	0	0	**0**
1815 - 1915	0	0	0	**0**
1830 - 1930	0	0	0	**0**
1845 - 1945	0	0	0	**0**
1900 - 2000	0	0	0	**0**
PEAK HR	**0**	**0**	**0**	**0**



R.O.A.R DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

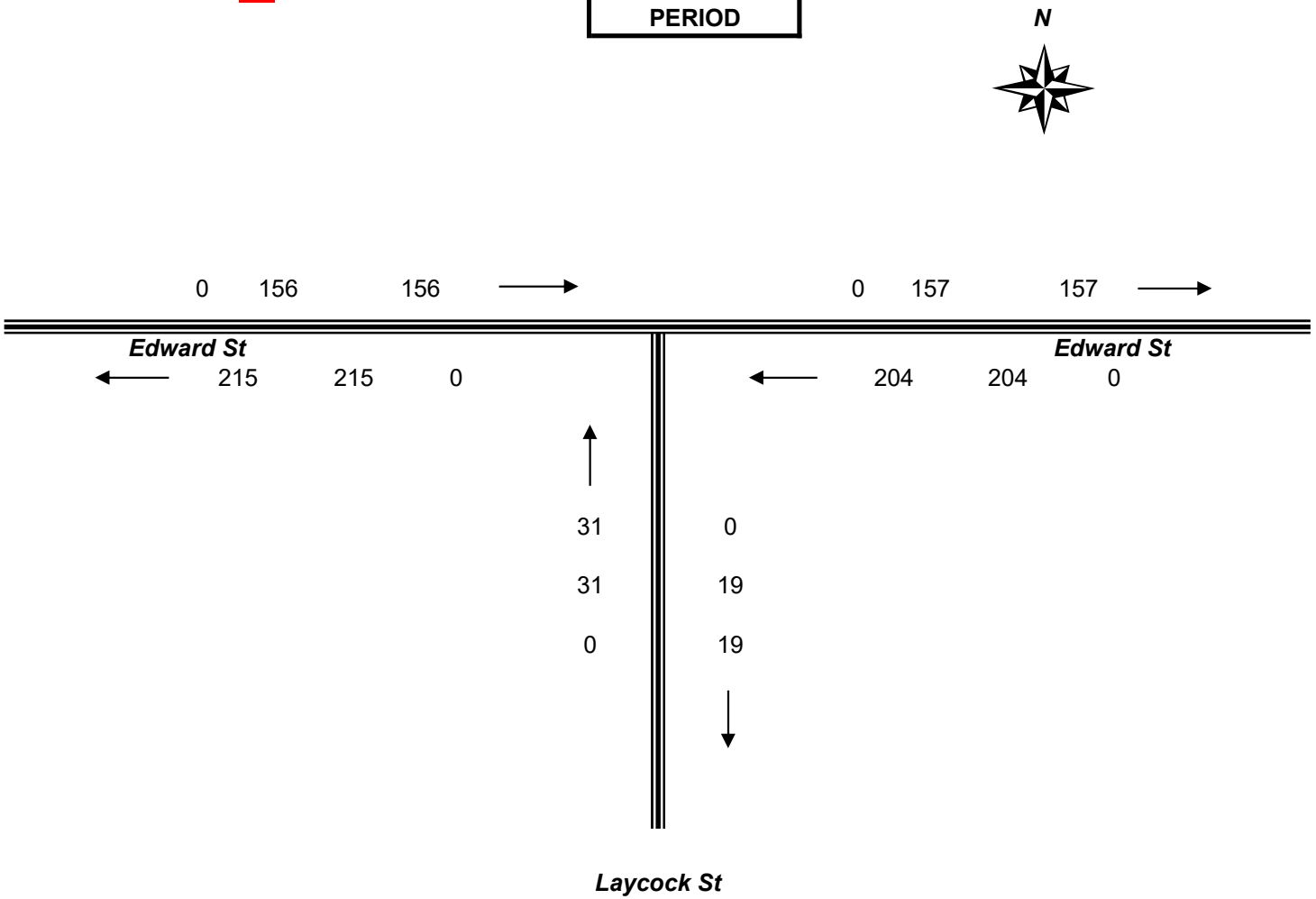
Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 74 Laycock St

Day/Date : Friday 17th May 2019

PM

TOTAL VOLUMES FOR COUNT PERIOD



R.O.A.R. DATA

Reliable, Original & Authentic Results

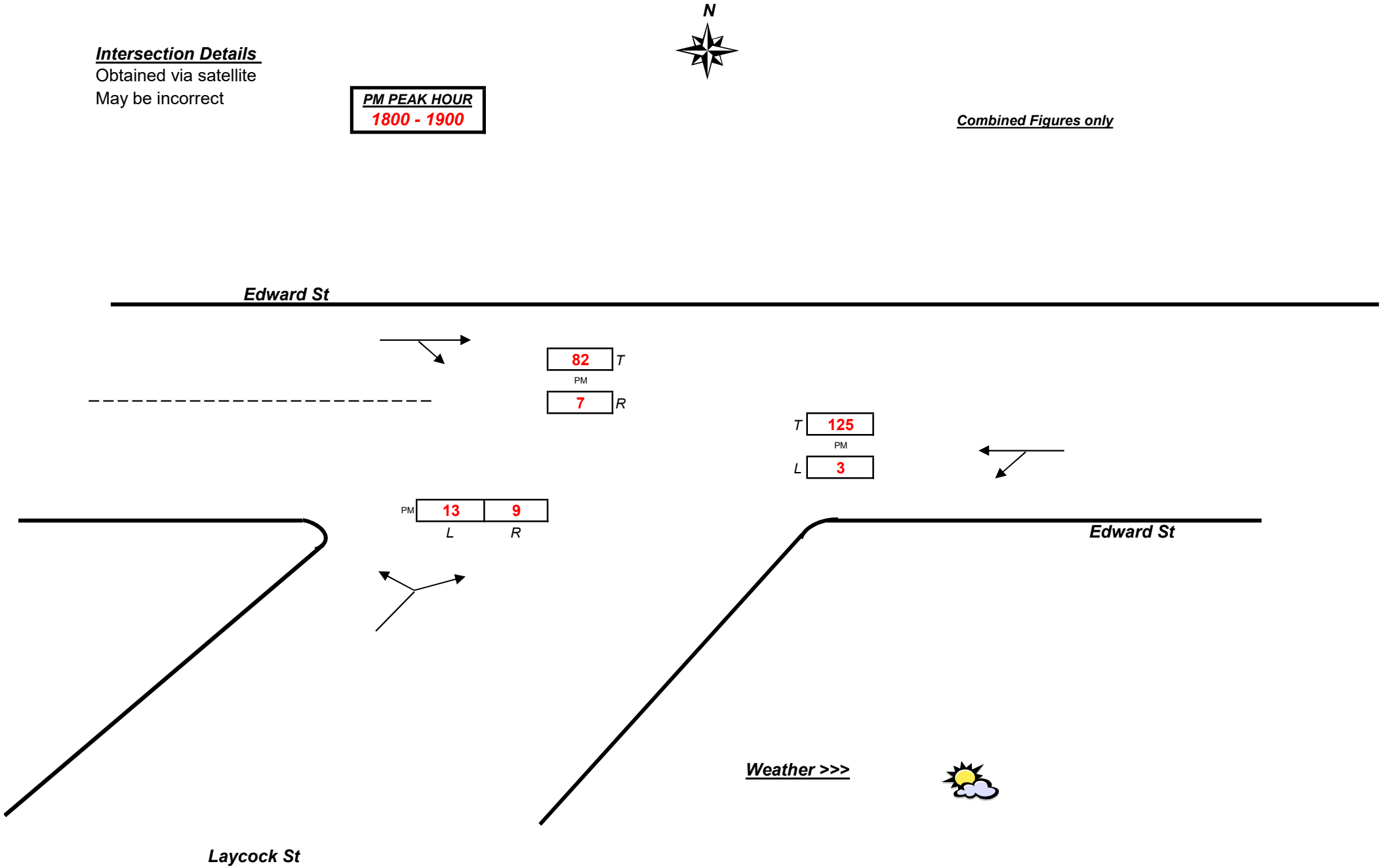
Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Saturday 18th May 2019

Intersection Details
Obtained via satellite
May be incorrect

PM PEAK HOUR
1800 - 1900

Combined Figures only



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Friday 17th May 2019

Lights

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	9	11	7	9	20	3	2	8	1	0	30	7	**107**
1815 - 1830	2	15	7	6	14	2	2	8	0	0	30	4	**90**
1830 - 1845	1	8	5	6	7	5	0	8	0	0	26	2	**68**
1845 - 1900	3	9	4	4	10	2	1	10	1	2	15	1	**62**
1900 - 1915	3	4	7	2	19	1	2	4	0	0	21	1	**64**
1915 - 1930	0	5	2	4	9	1	0	8	0	1	18	1	**49**
1930 - 1945	5	9	5	6	12	4	1	5	0	1	7	1	**56**
1945 - 2000	2	3	4	4	8	1	0	2	0	0	7	3	**34**
Period End	**25**	**64**	**41**	**41**	**99**	**19**	**8**	**53**	**2**	**4**	**154**	**20**	**530**

Heavies

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1830 - 1845	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1900 - 1915	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1915 - 1930	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1930 - 1945	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1945 - 2000	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Period End	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Lights

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	15	43	23	25	51	12	5	34	2	2	101	14	**327**
1815 - 1915	9	36	23	18	50	10	5	30	1	2	92	8	**284**
1830 - 1930	7	26	18	16	45	9	3	30	1	3	80	5	**243**
1845 - 1945	11	27	18	16	50	8	4	27	1	4	61	4	**231**
1900 - 2000	10	21	18	16	48	7	3	19	0	2	53	6	**203**
PEAK HOUR	**15**	**43**	**23**	**25**	**51**	**12**	**5**	**34**	**2**	**2**	**101**	**14**	**327**

Heavies

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1815 - 1915	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1830 - 1930	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1845 - 1945	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1900 - 2000	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PEAK HOUR	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	9	11	7	9	20	3	2	8	1	0	30	7	**107**
1815 - 1830	2	15	7	6	14	2	2	8	0	0	30	4	**90**
1830 - 1845	1	8	5	6	7	5	0	8	0	0	26	2	**68**
1845 - 1900	3	9	4	4	10	2	1	10	1	2	15	1	**62**
1900 - 1915	3	4	7	2	19	1	2	4	0	0	21	1	**64**
1915 - 1930	0	5	2	4	9	1	0	8	0	1	18	1	**49**
1930 - 1945	5	9	5	6	12	4	1	5	0	1	7	1	**56**
1945 - 2000	2	3	4	4	8	1	0	2	0	0	7	3	**34**
Period End	**25**	**64**	**41**	**41**	**99**	**19**	**8**	**53**	**2**	**4**	**154**	**20**	**530**

Peds

	NORTH	WEST	SOUTH	EAST	
	Oliver St	*Edward St*	*Oliver St*	*Edward St*	
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1800 - 1815	0	0	1	1	**2**
1815 - 1830	0	0	0	0	**0**
1830 - 1845	0	0	0	1	**1**
1845 - 1900	0	1	0	0	**1**
1900 - 1915	0	0	1	0	**1**
1915 - 1930	1	0	0	0	**1**
1930 - 1945	0	0	0	0	**0**
1945 - 2000	0	0	0	0	**0**
Period End	**1**	**1**	**2**	**2**	**6**

Combined

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	15	43	23	25	51	12	5	34	2	2	101	14	**327**
1815 - 1915	9	36	23	18	50	10	5	30	1	2	92	8	**284**
1830 - 1930	7	26	18	16	45	9	3	30	1	3	80	5	**243**
1845 - 1945	11	27	18	16	50	8	4	27	1	4	61	4	**231**
1900 - 2000	10	21	18	16	48	7	3	19	0	2	53	6	**203**
PEAK HOUR	**15**	**43**	**23**	**25**	**51**	**12**	**5**	**34**	**2**	**2**	**101**	**14**	**327**

Peds

	NORTH	WEST	SOUTH	EAST	
	Oliver St	*Edward St*	*Oliver St*	*Edward St*	
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1800 - 1900	0	1	1	2	**4**
1815 - 1915	0	1	1	1	**3**
1830 - 1930	1	1	1	1	**4**
1845 - 1945	1	1	1	0	**3**
1900 - 2000	1	0	1	0	**2**
PEAK HR	**0**	**1**	**1**	**2**	**4**

R.O.A.R DATA

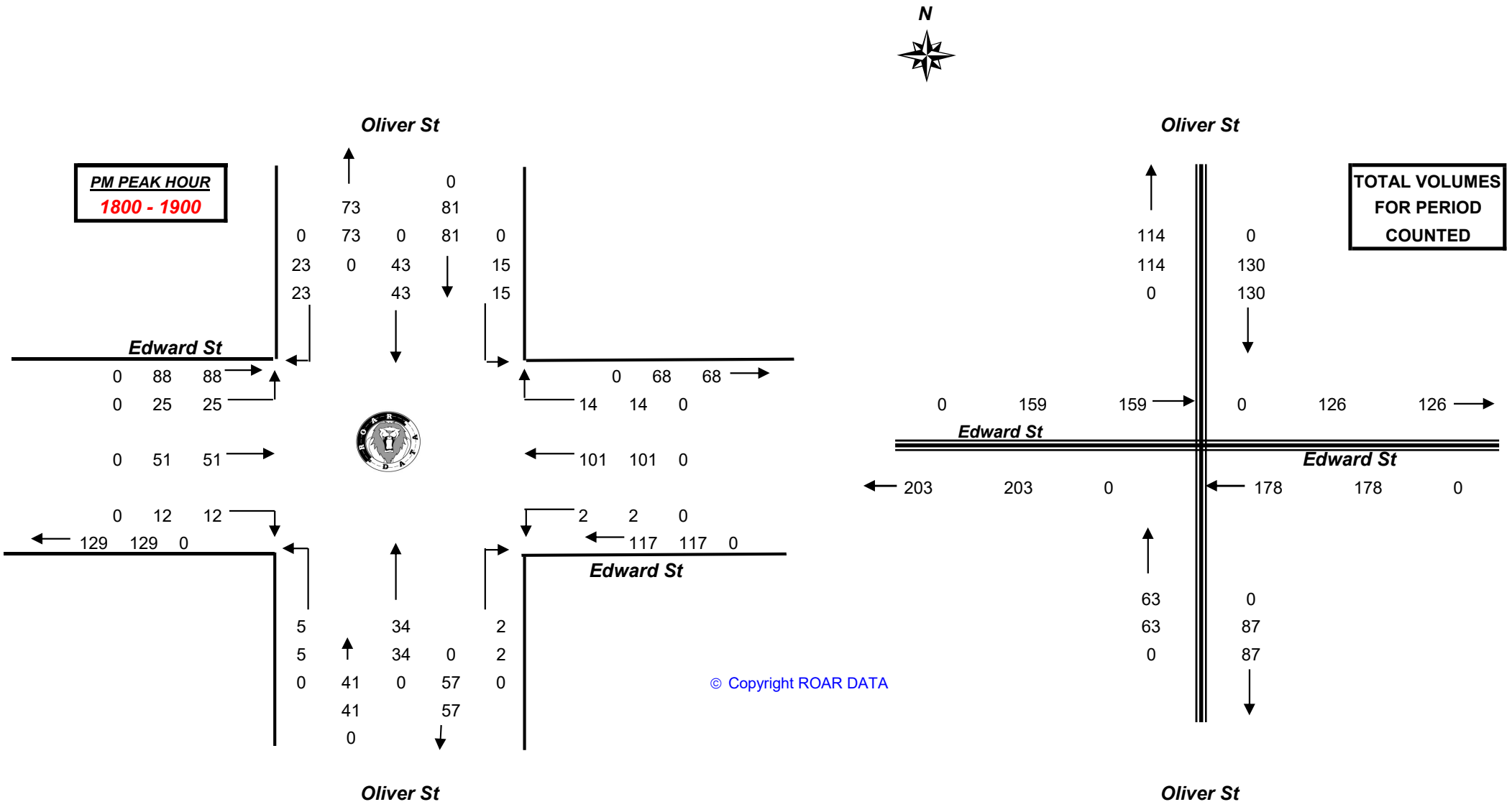
Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Friday 17th May 2019



R.O.A.R. DATA

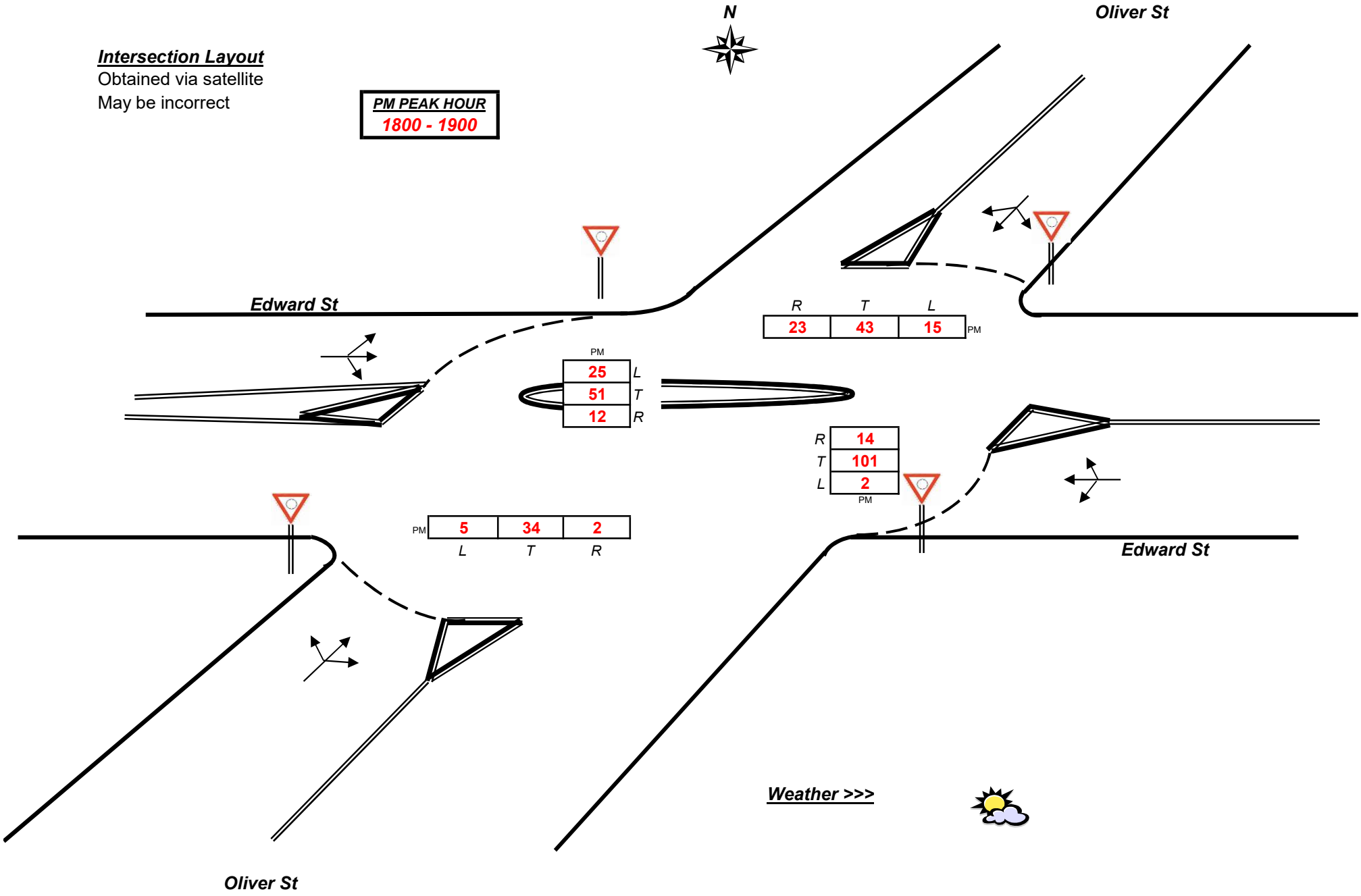
Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Friday 17th May 2019

Intersection Layout
Obtained via satellite
May be incorrect

PM PEAK HOUR
1800 - 1900



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Saturday 18th May 2019

Lights

Time Per	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1415	6	13	10	5	8	1	1	10	1	1	21	8	**85**
1415 - 1430	5	9	7	11	14	0	2	8	1	2	14	4	**77**
1430 - 1445	5	7	8	9	10	3	1	2	0	0	21	1	**67**
1445 - 1500	6	6	7	6	13	3	2	7	3	2	19	4	**78**
1500 - 1515	4	5	8	9	12	0	2	6	3	0	15	4	**68**
1515 - 1530	1	8	4	6	19	4	0	6	3	0	15	3	**69**
1530 - 1545	6	4	10	8	11	0	1	7	1	0	12	1	**61**
1545 - 1600	5	14	3	5	10	3	1	2	2	1	18	5	**69**
Period End	**38**	**66**	**57**	**59**	**97**	**14**	**10**	**48**	**14**	**6**	**135**	**30**	**574**

Heavies

Time Per	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1415	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1415 - 1430	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1430 - 1445	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1445 - 1500	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1500 - 1515	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1515 - 1530	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1530 - 1545	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1545 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Period End	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Lights

Peak Time	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1500	22	35	32	31	45	7	6	27	5	5	75	17	**307**
1415 - 1515	20	27	30	35	49	6	7	23	7	4	69	13	**290**
1430 - 1530	16	26	27	30	54	10	5	21	9	2	70	12	**282**
1445 - 1545	17	23	29	29	55	7	5	26	10	2	61	12	**276**
1500 - 1600	16	31	25	28	52	7	4	21	9	1	60	13	**267**
PEAK HOUR	**22**	**35**	**32**	**31**	**45**	**7**	**6**	**27**	**5**	**5**	**75**	**17**	**307**

Heavies

Peak Time	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1500	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1415 - 1515	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1430 - 1530	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1445 - 1545	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1500 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PEAK HOUR	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

Time Per	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1415	6	13	10	5	8	1	1	10	1	1	21	8	**85**
1415 - 1430	5	9	7	11	14	0	2	8	1	2	14	4	**77**
1430 - 1445	5	7	8	9	10	3	1	2	0	0	21	1	**67**
1445 - 1500	6	6	7	6	13	3	2	7	3	2	19	4	**78**
1500 - 1515	4	5	8	9	12	0	2	6	3	0	15	4	**68**
1515 - 1530	1	8	4	6	19	4	0	6	3	0	15	3	**69**
1530 - 1545	6	4	10	8	11	0	1	7	1	0	12	1	**61**
1545 - 1600	5	14	3	5	10	3	1	2	2	1	18	5	**69**
Period End	**38**	**66**	**57**	**59**	**97**	**14**	**10**	**48**	**14**	**6**	**135**	**30**	**574**

Peds

Time Per	NORTH Oliver St UNCLASSIFIED	WEST Edward St UNCLASSIFIED	SOUTH Oliver St UNCLASSIFIED	EAST Edward St UNCLASSIFIED	TOT
1400 - 1415	0	0	1	1	**2**
1415 - 1430	0	3	0	1	**4**
1430 - 1445	0	0	0	2	**2**
1445 - 1500	0	0	0	0	**0**
1500 - 1515	0	1	1	0	**2**
1515 - 1530	0	1	4	0	**5**
1530 - 1545	0	4	6	0	**10**
1545 - 1600	6	0	0	0	**6**
Period End	**6**	**9**	**12**	**4**	**31**

Combined

Peak Time	NORTH Oliver St L	NORTH Oliver St T	NORTH Oliver St R	WEST Edward St L	WEST Edward St T	WEST Edward St R	SOUTH Oliver St L	SOUTH Oliver St T	SOUTH Oliver St R	EAST Edward St L	EAST Edward St T	EAST Edward St R	TOT
1400 - 1500	22	35	32	31	45	7	6	27	5	5	75	17	**307**
1415 - 1515	20	27	30	35	49	6	7	23	7	4	69	13	**290**
1430 - 1530	16	26	27	30	54	10	5	21	9	2	70	12	**282**
1445 - 1545	17	23	29	29	55	7	5	26	10	2	61	12	**276**
1500 - 1600	16	31	25	28	52	7	4	21	9	1	60	13	**267**
PEAK HOUR	**22**	**35**	**32**	**31**	**45**	**7**	**6**	**27**	**5**	**5**	**75**	**17**	**307**

Peds

Peak Per	NORTH Oliver St UNCLASSIFIED	WEST Edward St UNCLASSIFIED	SOUTH Oliver St UNCLASSIFIED	EAST Edward St UNCLASSIFIED	TOT
1400 - 1500	0	3	1	4	**8**
1415 - 1515	0	4	1	3	**8**
1430 - 1530	0	2	5	2	**9**
1445 - 1545	0	6	11	0	**17**
1500 - 1600	6	6	11	0	**23**
PEAK HR	**0**	**3**	**1**	**4**	**8**

R.O.A.R DATA

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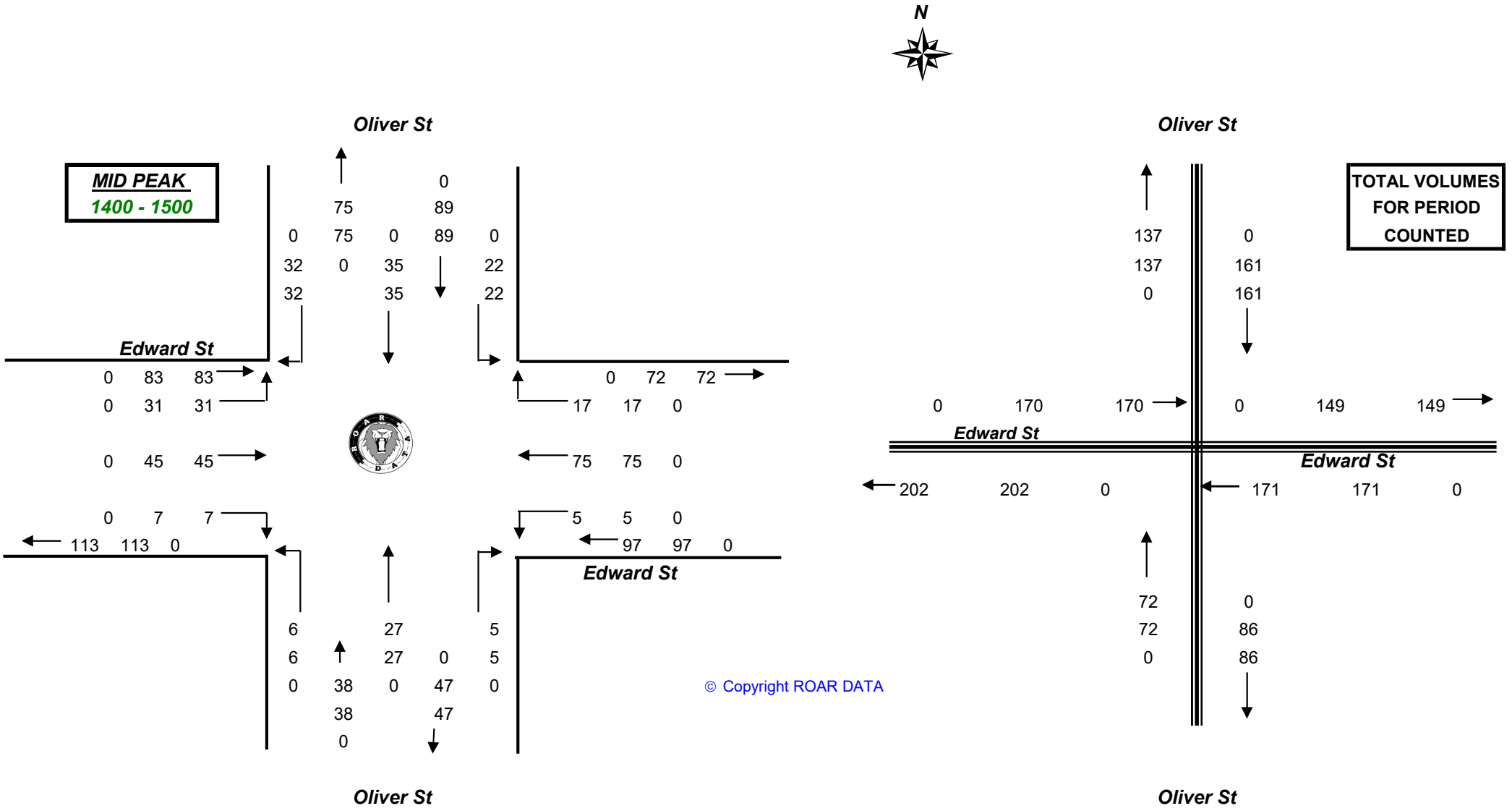
Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Saturday 18th May 2019



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Saturday 18th May 2019

Lights

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	5	6	6	5	15	2	1	4	3	0	17	2	**66**
1815 - 1830	2	4	1	3	11	1	1	6	0	0	15	2	**46**
1830 - 1845	1	9	4	4	10	0	0	4	2	2	12	1	**49**
1845 - 1900	3	2	5	4	8	4	2	3	0	1	15	1	**48**
1900 - 1915	4	7	4	2	7	2	2	6	0	0	11	0	**45**
1915 - 1930	0	2	2	5	3	1	2	3	1	1	9	0	**29**
1930 - 1945	0	4	3	7	5	1	4	5	1	1	12	0	**43**
1945 - 2000	0	4	1	3	11	0	0	4	1	0	6	2	**32**
Period End	**15**	**38**	**26**	**33**	**70**	**11**	**12**	**35**	**8**	**5**	**97**	**8**	**358**

Heavies

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1815 - 1830	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1830 - 1845	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1845 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1900 - 1915	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1915 - 1930	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1930 - 1945	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1945 - 2000	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Period End	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Lights

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	11	21	16	16	44	7	4	17	5	3	59	6	**209**
1815 - 1915	10	22	14	13	36	7	5	19	2	3	53	4	**188**
1830 - 1930	8	20	15	15	28	7	6	16	3	4	47	2	**171**
1845 - 1945	7	15	14	18	23	8	10	17	2	3	47	1	**165**
1900 - 2000	4	17	10	17	26	4	8	18	3	2	38	2	**149**
PEAK HOUR	**11**	**21**	**16**	**16**	**44**	**7**	**4**	**17**	**5**	**3**	**59**	**6**	**209**

Heavies

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1815 - 1915	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1830 - 1930	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1845 - 1945	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1900 - 2000	0	0	0	0	0	0	0	0	0	0	0	0	**0**
PEAK HOUR	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Combined

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Time Per	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1815	5	6	6	5	15	2	1	4	3	0	17	2	**66**
1815 - 1830	2	4	1	3	11	1	1	6	0	0	15	2	**46**
1830 - 1845	1	9	4	4	10	0	0	4	2	2	12	1	**49**
1845 - 1900	3	2	5	4	8	4	2	3	0	1	15	1	**48**
1900 - 1915	4	7	4	2	7	2	2	6	0	0	11	0	**45**
1915 - 1930	0	2	2	5	3	1	2	3	1	1	9	0	**29**
1930 - 1945	0	4	3	7	5	1	4	5	1	1	12	0	**43**
1945 - 2000	0	4	1	3	11	0	0	4	1	0	6	2	**32**
Period End	**15**	**38**	**26**	**33**	**70**	**11**	**12**	**35**	**8**	**5**	**97**	**8**	**358**

Peds

	NORTH	WEST	SOUTH	EAST	
	Oliver St	*Edward St*	*Oliver St*	*Edward St*	
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1800 - 1815	0	0	0	1	**1**
1815 - 1830	0	0	0	0	**0**
1830 - 1845	0	0	0	0	**0**
1845 - 1900	0	0	0	0	**0**
1900 - 1915	0	0	0	0	**0**
1915 - 1930	0	0	0	0	**0**
1930 - 1945	0	0	0	0	**0**
1945 - 2000	0	0	2	0	**2**
Period End	**0**	**0**	**2**	**1**	**3**

Combined

	NORTH			WEST			SOUTH			EAST			
	Oliver St			*Edward St*			*Oliver St*			*Edward St*			
Peak Time	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1800 - 1900	11	21	16	16	44	7	4	17	5	3	59	6	**209**
1815 - 1915	10	22	14	13	36	7	5	19	2	3	53	4	**188**
1830 - 1930	8	20	15	15	28	7	6	16	3	4	47	2	**171**
1845 - 1945	7	15	14	18	23	8	10	17	2	3	47	1	**165**
1900 - 2000	4	17	10	17	26	4	8	18	3	2	38	2	**149**
PEAK HOUR	**11**	**21**	**16**	**16**	**44**	**7**	**4**	**17**	**5**	**3**	**59**	**6**	**209**

Peds

	NORTH	WEST	SOUTH	EAST	
	Oliver St	*Edward St*	*Oliver St*	*Edward St*	
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1800 - 1900	0	0	0	1	**1**
1815 - 1915	0	0	0	0	**0**
1830 - 1930	0	0	0	0	**0**
1845 - 1945	0	0	0	0	**0**
1900 - 2000	0	0	2	0	**2**
PEAK HR	**0**	**0**	**0**	**1**	**1**

R.O.A.R DATA

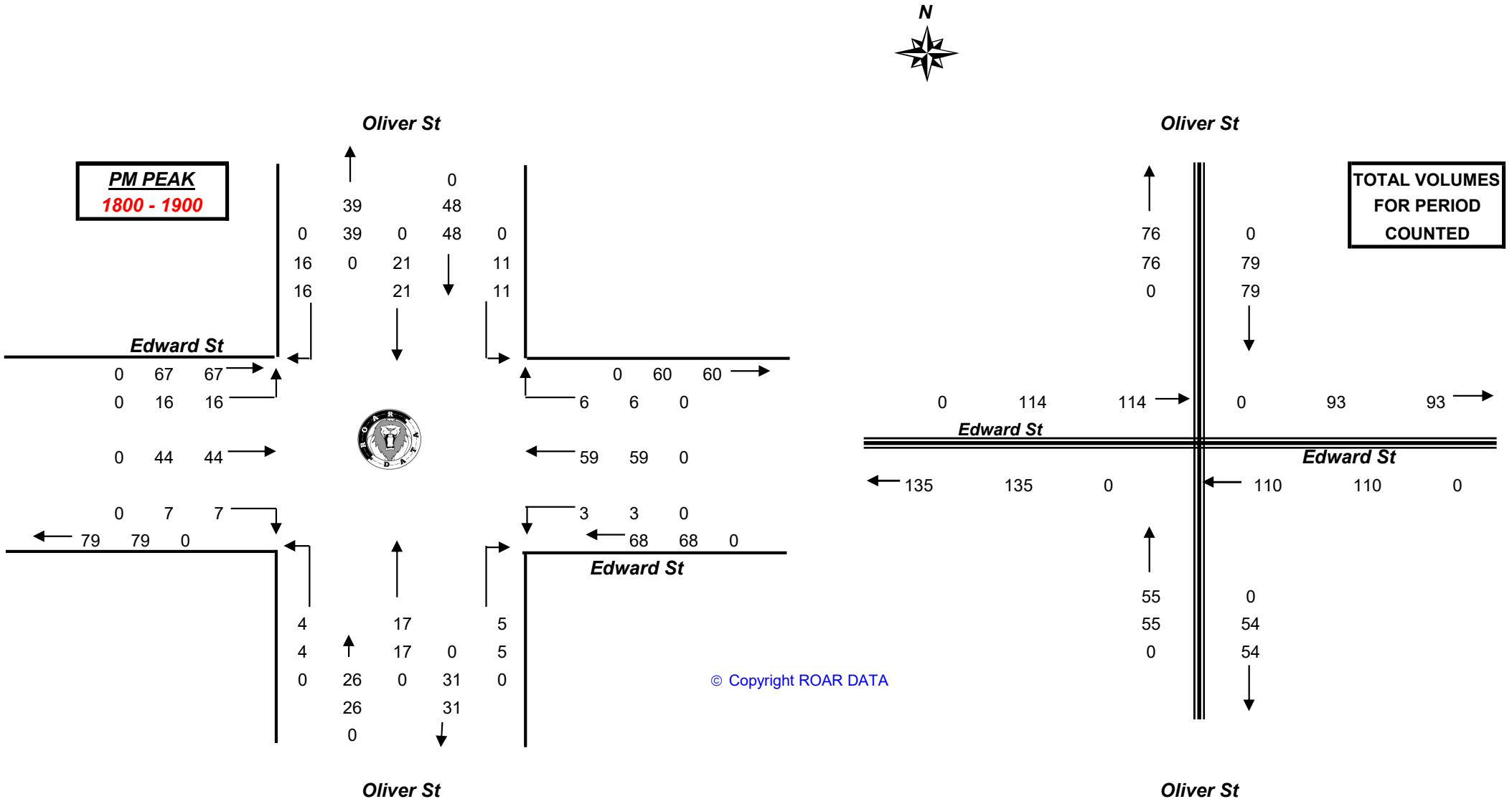
Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants

Job No/Name : 7084 BEXLEY NORTH 72 Laycock St

Day/Date : Saturday 18th May 2019



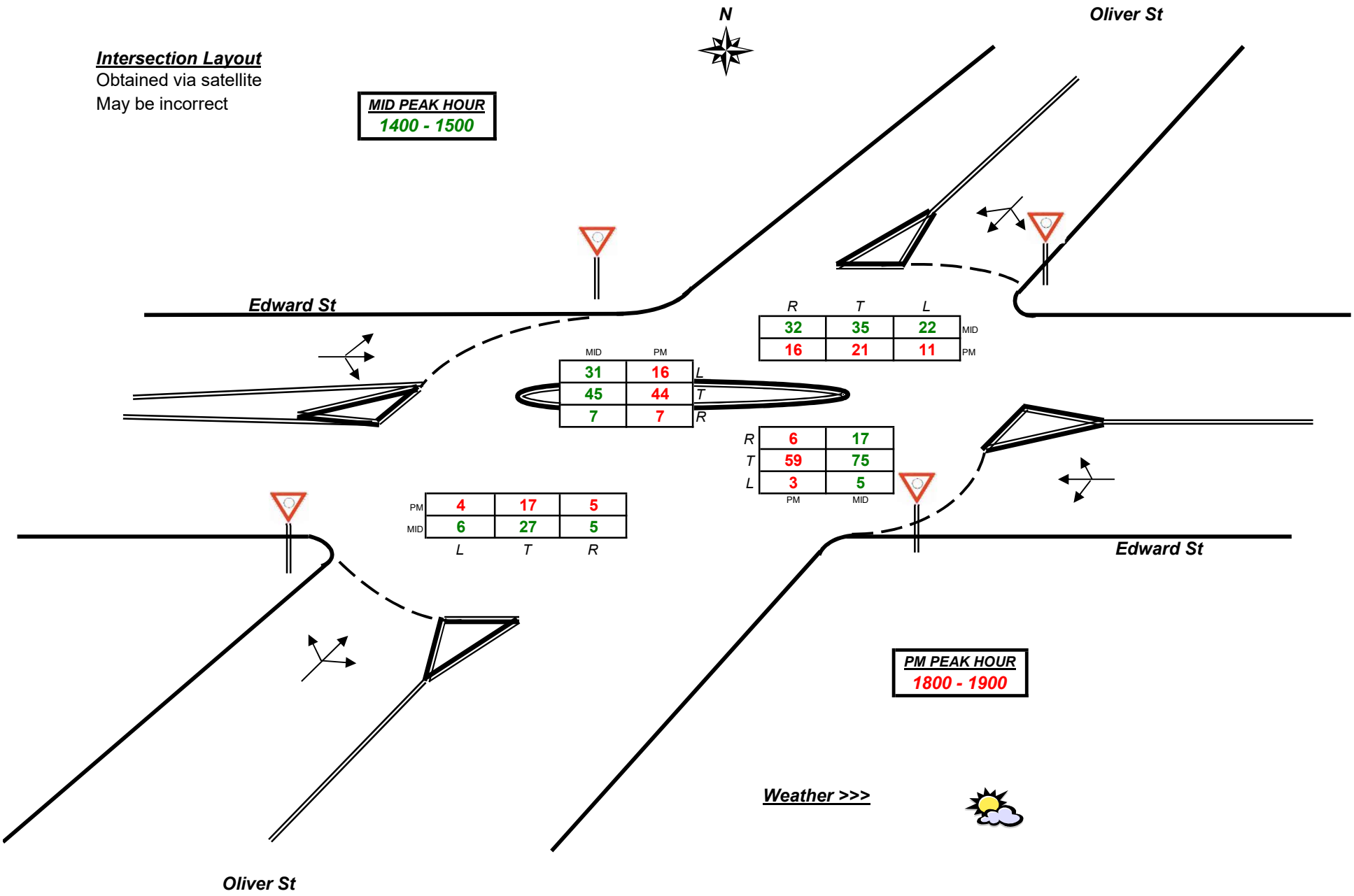
R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Mob. 0418 239019

Client : pdc Consultants
Job No/Name : 7084 BEXLEY NORTH 72 Laycock St
Day/Date : Saturday 18th May 2019

Intersection Layout
Obtained via satellite
May be incorrect

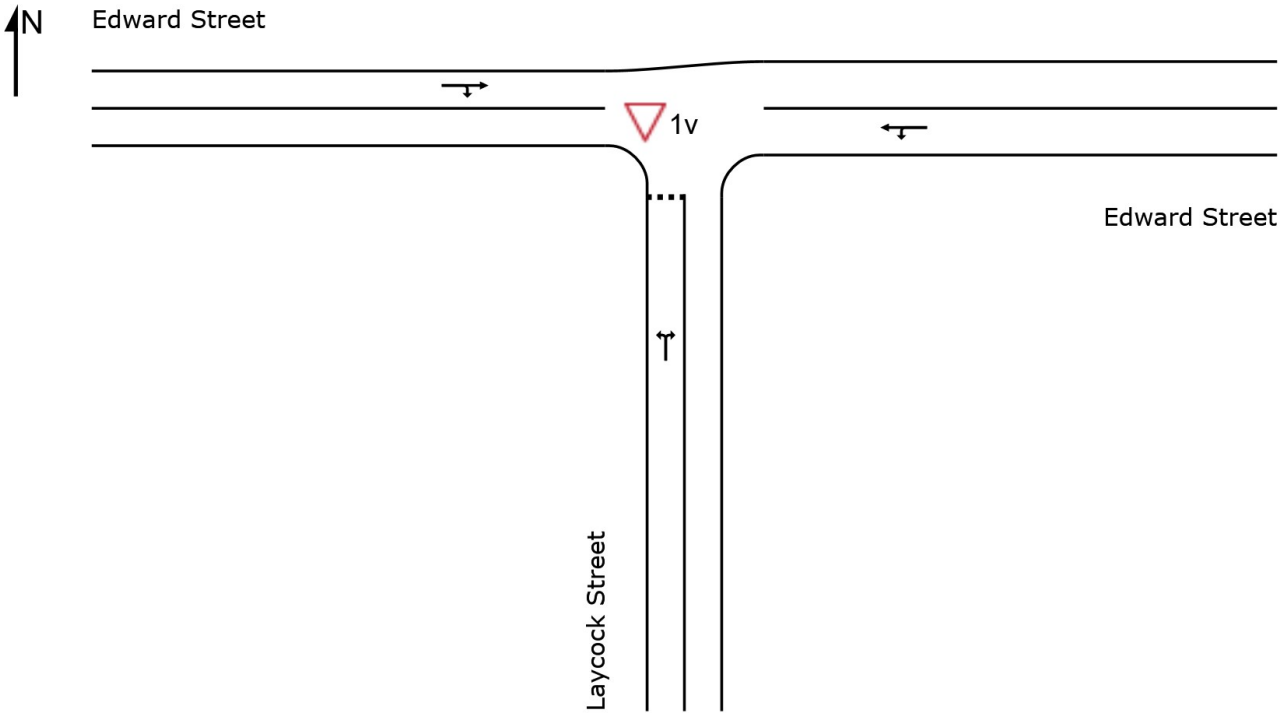


Appendix B

SITE LAYOUT

Site: 1v [Edward St x Laycock St - FRI EX]

Intersection: Edward Street & Laycock Street
Period: Friday
Scenario: Existing
Site Category: (None)
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 1v [Edward St x Laycock St - FRI EX]

Intersection: Edward Street & Laycock Street
Period: Friday
Scenario: Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Laycock Street												
1	L2	14	0.0	0.018	4.9	LOS A	0.1	0.5	0.23	0.52	0.23	47.2
3	R2	9	0.0	0.018	5.3	LOS A	0.1	0.5	0.23	0.52	0.23	46.7
Approach		23	0.0	0.018	5.1	LOS A	0.1	0.5	0.23	0.52	0.23	47.0
East: Edward Street												
4	L2	3	0.0	0.064	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.5
5	T1	132	0.0	0.064	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
Approach		135	0.0	0.064	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
West: Edward Street												
11	T1	86	0.0	0.047	0.0	LOS A	0.0	0.3	0.04	0.04	0.04	49.7
12	R2	7	0.0	0.047	5.0	LOS A	0.0	0.3	0.04	0.04	0.04	49.2
Approach		94	0.0	0.047	0.4	NA	0.0	0.3	0.04	0.04	0.04	49.6
All Vehicles		252	0.0	0.064	0.7	NA	0.1	0.5	0.04	0.07	0.04	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1v [Edward St x Laycock St - SAT EX]

Intersection: Edward Street & Laycock Street
Period: Saturday
Scenario: Existing
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Laycock Street												
1	L2	3	0.0	0.016	4.8	LOS A	0.1	0.4	0.22	0.52	0.22	47.2
3	R2	15	0.0	0.016	5.2	LOS A	0.1	0.4	0.22	0.52	0.22	46.7
Approach		18	0.0	0.016	5.1	LOS A	0.1	0.4	0.22	0.52	0.22	46.8
East: Edward Street												
4	L2	4	0.0	0.048	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	49.5
5	T1	97	0.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.9
Approach		101	0.0	0.048	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.9
West: Edward Street												
11	T1	86	0.0	0.047	0.0	LOS A	0.0	0.3	0.03	0.04	0.03	49.7
12	R2	6	0.0	0.047	4.9	LOS A	0.0	0.3	0.03	0.04	0.03	49.2
Approach		93	0.0	0.047	0.4	NA	0.0	0.3	0.03	0.04	0.03	49.7
All Vehicles		212	0.0	0.048	0.7	NA	0.1	0.4	0.03	0.07	0.03	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1v [Edward St x Laycock St - FRI EX + DEV]

Intersection: Edward Street & Laycock Street
Period: Friday
Scenario: Existing + Development
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Laycock Street												
1	L2	14	0.0	0.021	4.9	LOS A	0.1	0.5	0.24	0.52	0.24	47.5
3	R2	12	0.0	0.021	5.6	LOS A	0.1	0.5	0.24	0.52	0.24	47.6
Approach		25	0.0	0.021	5.2	LOS A	0.1	0.5	0.24	0.52	0.24	47.5
East: Edward Street												
4	L2	4	0.0	0.066	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	49.9
5	T1	136	0.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	50.3
Approach		140	0.0	0.066	0.1	NA	0.0	0.0	0.00	0.02	0.00	50.3
West: Edward Street												
11	T1	104	0.0	0.056	0.0	LOS A	0.1	0.4	0.04	0.04	0.04	51.4
12	R2	7	0.0	0.056	5.0	LOS A	0.1	0.4	0.04	0.04	0.04	50.0
Approach		112	0.0	0.056	0.4	NA	0.1	0.4	0.04	0.04	0.04	51.3
All Vehicles		277	0.0	0.066	0.7	NA	0.1	0.5	0.04	0.07	0.04	50.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1v [Edward St x Laycock St - SAT EX + DEV]

Intersection: Edward Street & Laycock Street
Period: Saturday
Scenario: Existing + Development
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

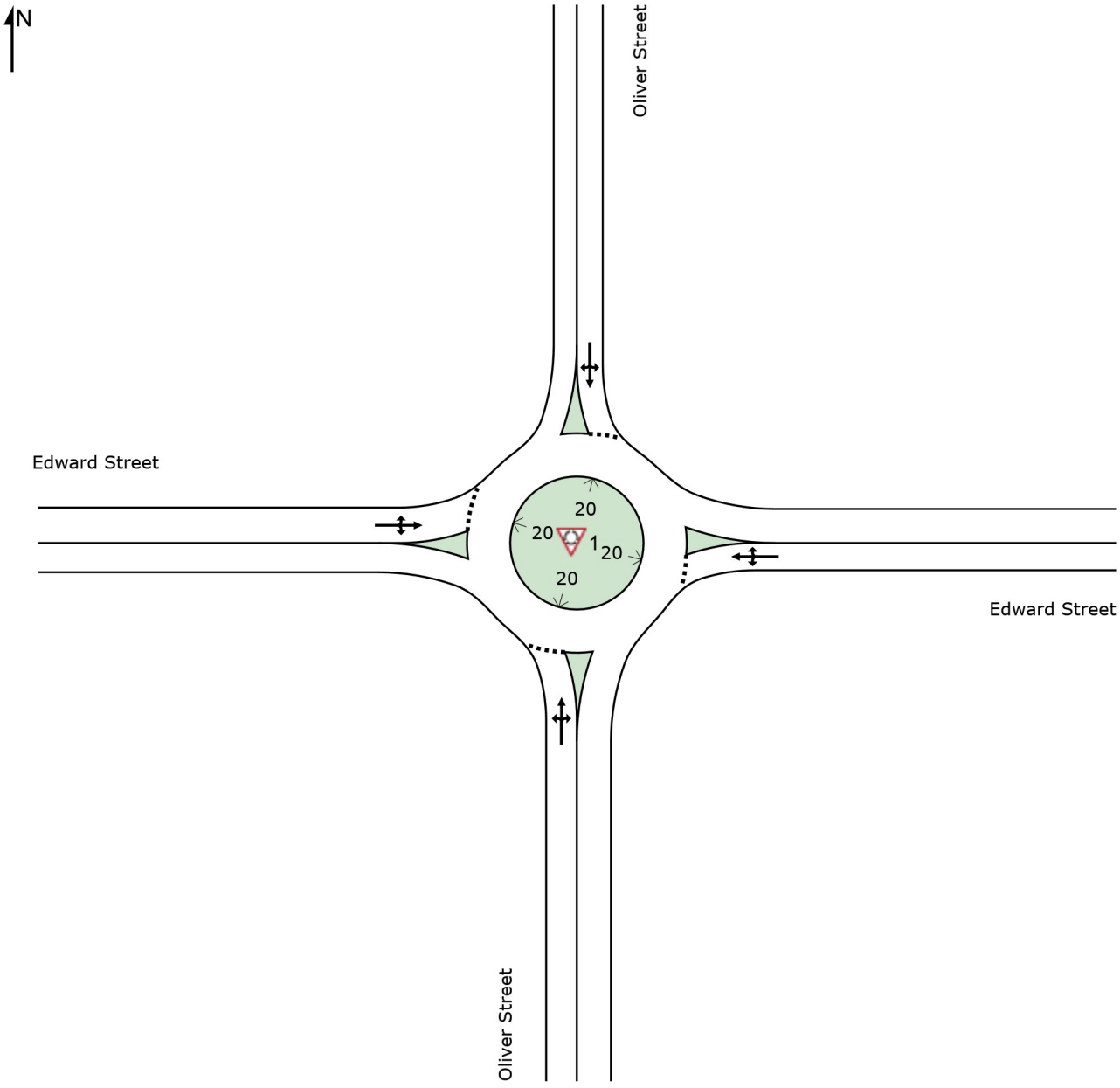
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Laycock Street												
1	L2	3	0.0	0.019	4.9	LOS A	0.1	0.4	0.24	0.53	0.24	47.8
3	R2	18	0.0	0.019	5.5	LOS A	0.1	0.4	0.24	0.53	0.24	47.9
Approach		21	0.0	0.019	5.4	LOS A	0.1	0.4	0.24	0.53	0.24	47.8
East: Edward Street												
4	L2	5	0.0	0.053	4.7	LOS A	0.0	0.0	0.00	0.03	0.00	50.3
5	T1	106	0.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	50.8
Approach		112	0.0	0.053	0.2	NA	0.0	0.0	0.00	0.03	0.00	50.8
West: Edward Street												
11	T1	98	0.0	0.052	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	50.9
12	R2	6	0.0	0.052	4.9	LOS A	0.0	0.3	0.03	0.03	0.03	49.8
Approach		104	0.0	0.052	0.3	NA	0.0	0.3	0.03	0.03	0.03	50.8
All Vehicles		237	0.0	0.053	0.7	NA	0.1	0.4	0.04	0.08	0.04	50.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

Site: 1 [Edward St x Oliver St - FRI EX]

Intersection: Oliver Street & Edward Street
Period: Friday
Scenario: Existing
Site Category: (None)
Roundabout



MOVEMENT SUMMARY

Site: 1 [Edward St x Oliver St - FRI EX]

Intersection: Oliver Street & Edward Street
Period: Friday
Scenario: Existing
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oliver Street												
1	L2	5	0.0	0.035	3.4	LOS A	0.2	1.1	0.27	0.39	0.27	48.1
2	T1	36	0.0	0.035	3.2	LOS A	0.2	1.1	0.27	0.39	0.27	48.0
3	R2	2	0.0	0.035	7.8	LOS A	0.2	1.1	0.27	0.39	0.27	48.6
Approach		43	0.0	0.035	3.5	LOS A	0.2	1.1	0.27	0.39	0.27	48.0
East: Edward Street												
4	L2	2	0.0	0.095	3.2	LOS A	0.5	3.4	0.23	0.38	0.23	47.4
5	T1	106	0.0	0.095	3.1	LOS A	0.5	3.4	0.23	0.38	0.23	48.4
6	R2	15	0.0	0.095	7.6	LOS A	0.5	3.4	0.23	0.38	0.23	47.1
Approach		123	0.0	0.095	3.6	LOS A	0.5	3.4	0.23	0.38	0.23	48.3
North: Oliver Street												
7	L2	16	0.0	0.066	3.2	LOS A	0.3	2.3	0.21	0.44	0.21	44.5
8	T1	45	0.0	0.066	3.0	LOS A	0.3	2.3	0.21	0.44	0.21	47.6
9	R2	24	0.0	0.066	7.6	LOS A	0.3	2.3	0.21	0.44	0.21	47.9
Approach		85	0.0	0.066	4.3	LOS A	0.3	2.3	0.21	0.44	0.21	47.3
West: Edward Street												
10	L2	26	0.0	0.068	3.1	LOS A	0.3	1.8	0.13	0.40	0.13	47.1
11	T1	54	0.0	0.068	2.9	LOS A	0.3	1.8	0.13	0.40	0.13	48.6
12	R2	13	0.0	0.068	7.4	LOS A	0.3	1.8	0.13	0.40	0.13	49.1
Approach		93	0.0	0.068	3.5	LOS A	0.3	1.8	0.13	0.40	0.13	48.4
All Vehicles		344	0.0	0.095	3.8	LOS A	0.5	3.4	0.20	0.40	0.20	48.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Edward St x Oliver St - SAT EX]

Intersection: Oliver Street & Edward Street
Period: Saturday
Scenario: Existing
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oliver Street												
1	L2	6	0.0	0.032	3.4	LOS A	0.1	1.0	0.25	0.41	0.25	48.0
2	T1	28	0.0	0.032	3.2	LOS A	0.1	1.0	0.25	0.41	0.25	47.8
3	R2	5	0.0	0.032	7.7	LOS A	0.1	1.0	0.25	0.41	0.25	48.4
Approach		40	0.0	0.032	3.8	LOS A	0.1	1.0	0.25	0.41	0.25	48.0
East: Edward Street												
4	L2	5	0.0	0.079	3.2	LOS A	0.4	2.8	0.22	0.40	0.22	47.4
5	T1	79	0.0	0.079	3.1	LOS A	0.4	2.8	0.22	0.40	0.22	48.3
6	R2	18	0.0	0.079	7.6	LOS A	0.4	2.8	0.22	0.40	0.22	46.9
Approach		102	0.0	0.079	3.9	LOS A	0.4	2.8	0.22	0.40	0.22	48.1
North: Oliver Street												
7	L2	23	0.0	0.071	3.1	LOS A	0.4	2.5	0.19	0.46	0.19	44.3
8	T1	37	0.0	0.071	3.0	LOS A	0.4	2.5	0.19	0.46	0.19	47.4
9	R2	34	0.0	0.071	7.5	LOS A	0.4	2.5	0.19	0.46	0.19	47.7
Approach		94	0.0	0.071	4.7	LOS A	0.4	2.5	0.19	0.46	0.19	47.0
West: Edward Street												
10	L2	33	0.0	0.065	3.1	LOS A	0.2	1.6	0.13	0.39	0.13	47.3
11	T1	47	0.0	0.065	2.8	LOS A	0.2	1.6	0.13	0.39	0.13	48.8
12	R2	7	0.0	0.065	7.4	LOS A	0.2	1.6	0.13	0.39	0.13	49.2
Approach		87	0.0	0.065	3.3	LOS A	0.2	1.6	0.13	0.39	0.13	48.3
All Vehicles		323	0.0	0.079	3.9	LOS A	0.4	2.8	0.19	0.41	0.19	47.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Edward St x Oliver St - FRI EX + DEV]

Intersection: Oliver Street & Edward Street
Period: Friday
Scenario: Existing + Development
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oliver Street												
1	L2	6	0.0	0.037	3.7	LOS A	0.2	1.1	0.28	0.40	0.28	48.8
2	T1	36	0.0	0.037	3.3	LOS A	0.2	1.1	0.28	0.40	0.28	48.1
3	R2	2	0.0	0.037	7.8	LOS A	0.2	1.1	0.28	0.40	0.28	48.6
Approach		44	0.0	0.037	3.6	LOS A	0.2	1.1	0.28	0.40	0.28	48.3
East: Edward Street												
4	L2	2	0.0	0.106	3.2	LOS A	0.5	3.8	0.24	0.39	0.24	47.7
5	T1	120	0.0	0.106	3.3	LOS A	0.5	3.8	0.24	0.39	0.24	49.3
6	R2	15	0.0	0.106	7.7	LOS A	0.5	3.8	0.24	0.39	0.24	47.5
Approach		137	0.0	0.106	3.7	LOS A	0.5	3.8	0.24	0.39	0.24	49.2
North: Oliver Street												
7	L2	16	0.0	0.070	3.2	LOS A	0.4	2.5	0.21	0.45	0.21	44.4
8	T1	45	0.0	0.070	3.1	LOS A	0.4	2.5	0.21	0.45	0.21	47.5
9	R2	28	0.0	0.070	7.8	LOS A	0.4	2.5	0.21	0.45	0.21	48.7
Approach		89	0.0	0.070	4.6	LOS A	0.4	2.5	0.21	0.45	0.21	47.5
West: Edward Street												
10	L2	27	0.0	0.071	3.1	LOS A	0.3	1.9	0.13	0.40	0.13	47.4
11	T1	56	0.0	0.071	2.9	LOS A	0.3	1.9	0.13	0.40	0.13	49.0
12	R2	14	0.0	0.071	7.5	LOS A	0.3	1.9	0.13	0.40	0.13	49.5
Approach		97	0.0	0.071	3.6	LOS A	0.3	1.9	0.13	0.40	0.13	48.7
All Vehicles		367	0.0	0.106	3.9	LOS A	0.5	3.8	0.21	0.41	0.21	48.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [Edward St x Oliver St - SAT EX + DEV]

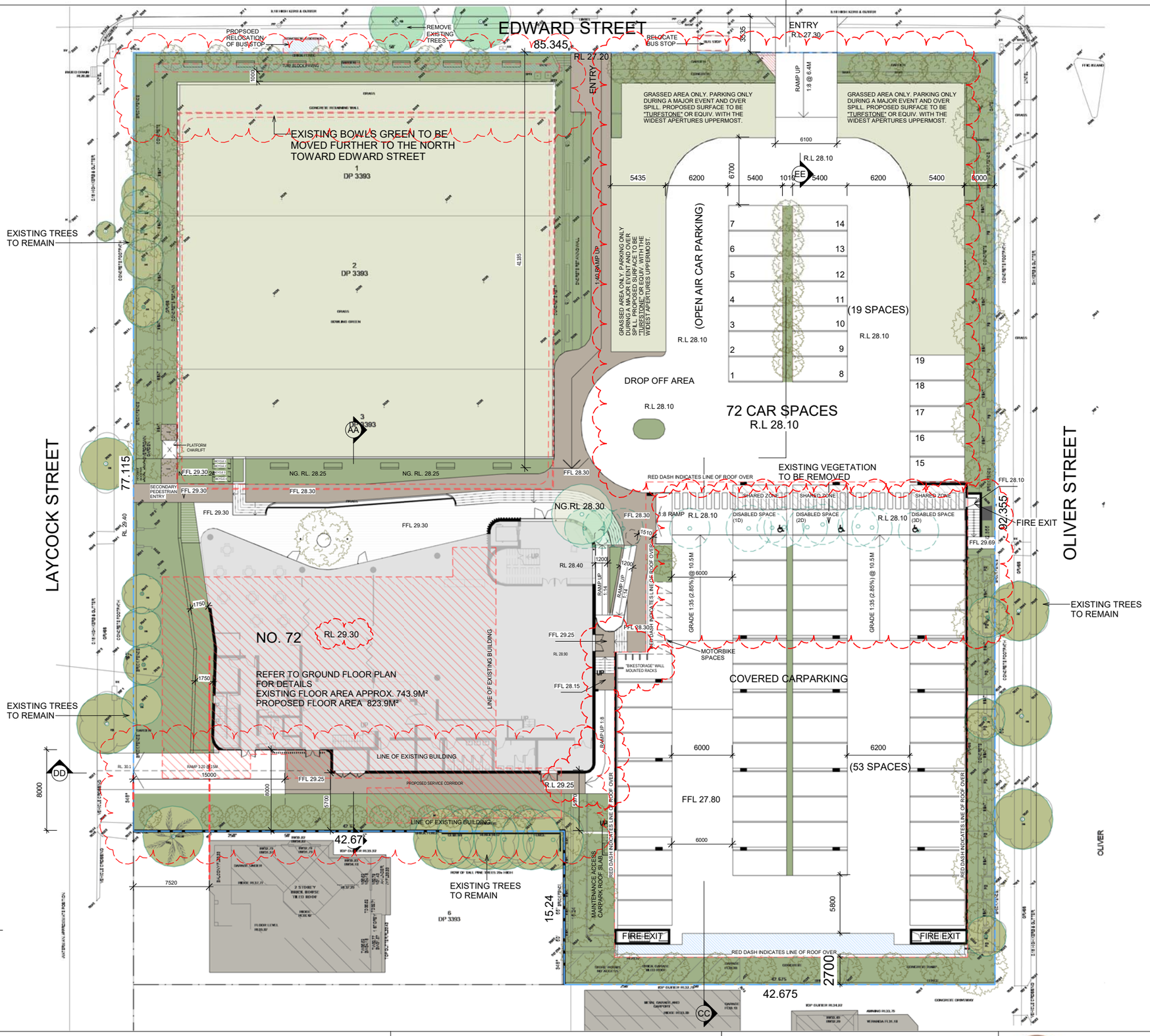
Intersection: Oliver Street & Edward Street
Period: Saturday
Scenario: Existing + Development
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Oliver Street												
1	L2	7	0.0	0.033	3.6	LOS A	0.1	1.0	0.26	0.41	0.26	48.7
2	T1	28	0.0	0.033	3.2	LOS A	0.1	1.0	0.26	0.41	0.26	48.0
3	R2	5	0.0	0.033	7.8	LOS A	0.1	1.0	0.26	0.41	0.26	48.5
Approach		41	0.0	0.033	3.9	LOS A	0.1	1.0	0.26	0.41	0.26	48.2
East: Edward Street												
4	L2	5	0.0	0.087	3.2	LOS A	0.4	3.0	0.23	0.41	0.23	47.6
5	T1	88	0.0	0.087	3.2	LOS A	0.4	3.0	0.23	0.41	0.23	49.1
6	R2	18	0.0	0.087	7.6	LOS A	0.4	3.0	0.23	0.41	0.23	47.3
Approach		112	0.0	0.087	3.9	LOS A	0.4	3.0	0.23	0.41	0.23	48.9
North: Oliver Street												
7	L2	23	0.0	0.074	3.1	LOS A	0.4	2.6	0.20	0.47	0.20	44.2
8	T1	37	0.0	0.074	3.0	LOS A	0.4	2.6	0.20	0.47	0.20	47.4
9	R2	37	0.0	0.074	7.7	LOS A	0.4	2.6	0.20	0.47	0.20	48.2
Approach		97	0.0	0.074	4.8	LOS A	0.4	2.6	0.20	0.47	0.20	47.2
West: Edward Street												
10	L2	37	0.0	0.071	3.2	LOS A	0.3	1.8	0.13	0.40	0.13	48.0
11	T1	52	0.0	0.071	3.0	LOS A	0.3	1.8	0.13	0.40	0.13	49.5
12	R2	8	0.0	0.071	7.6	LOS A	0.3	1.8	0.13	0.40	0.13	50.1
Approach		97	0.0	0.071	3.4	LOS A	0.3	1.8	0.13	0.40	0.13	49.1
All Vehicles		346	0.0	0.087	4.0	LOS A	0.4	3.0	0.20	0.42	0.20	48.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix C



1 -- SITE PLAN

1 : 200 @ A1

1 : 400 @ A3

CLOUDS INDICATE MODIFICATIONS

ARCHITECTURAL - GENERAL NOTES

A1 All dimensions are to be confirmed on site by the builder/subcontractor, any incongruencies must be reported to the Architect before commencement of any work
A2 The Builder/subcontractor will be held responsible for any construction details which have not been approved by the Architect.
A3 In the event of encountering any discrepencies on these drawings, specification or subsequent instructions issued, the Builder/Subcontractor shall contact the Architect before proceeding further with any work.
A4 The Builder/Subcontractor will be held responsible for the watertightness of the whole building for a minimum period of two years after the date of practical completion.
A5 It is the contractor's responsibility to have all Architectural & Structural documentation, including all site instructions any any details issued during the course of construction, approved by the relevent authorities including the local Council & the Water Board before any work may be proceeded with.
A6 All construction, control joints and expansion joints in the wall, floors, & other locations shall be in strict accordance with Architectural and/or Structural Engineering details. Nojoints or breakes other than specified, are allowed without written permission from the Architect and/or Engineer.
A7 Measurements for the fabrication of secondary components such as, windows, doors,internal frames, structural steel components and the like, are not to be taken from thesedocuments. Meaurements must be taken on site to suit the work as constructed.
A8 All structural components shall be in strict accordance to details and specifications as prepared by a structural engineer, and those details from part of the total specification.
A9 All existing structures need to be examined for structural adequacy, and it is the Contractor's responsibility to ensure that a certificate of structural adequacy is available prior to the start of any work.
A10 No construction work shall commence until a site survey has been completed. This work must be performed by a registered Surveyor.
A11 Foundation set-out, is to be performed by the Surveyor mentioned in 'A10' and recovery pegs must be protected during construction.
A12 All timber work is to comply with the requirments of the 'Light Timber Framing Code' S.A.A. Codes and Structural Engineer's details and specification.
A13 Copyrights of all documentation and designs relating to both Architectural and Structural Engineering, are retained by this office. Written authority is required for any reproduction.
A14 All Architectural documentation to be read in conjunction with the Structural Engineer's details and specification.
A15 Comply with the 'hazardous materials' clause of the specification

IMPORTANT NOTE

It is the Tenderer's & Contractor's responsibility to check that all Architectural, Structural and all other job related documentation's have been recieved before tendering and/or construction may commence. Should there be any doubt to the availability of such document's the Architect should be notified before further details be needed, the tenderer and/or Contractor shall obtain such details before signing of contract documents. Failure to adhere to these conditions, the Tenderer and/or Contractor nullifies any right or claim for extras, due to interpretation of documentation, and the Architect's &/or Engineer's direction shall be carried out at no extra cost.

DRAWN	DATE	ISSUE	AMENDMENT
KW	17.04.19	A	ISSUE FOR CONSULTANTS
KW	02.05.19	B	ISSUE FOR CONSULTANTS - CLIENT AMENDMENTS
KW	16.05.19	B	ISSUE FOR COUNCIL
KW	06.06.19	C	ISSUE FOR PRE DA
KW	09.07.19	D	ISSUE FOR DA CONSULTANTS
KW	12.08.19	E	ISSUE FOR DA
CK	10.10.19	F	AMENDED DA DOCUMENTS ADDRESSING COUNCIL LETTER DATED 27 SEPT 2019
CK	20.03.20	G	FURTHER AMENDMENTS FOR DISABLED PARKING

IMPORTANT NOTE
THESE DRAWINGS HAVE BEEN ISSUED FOR DEVELOPMENT APPLICATION PURPOSES ONLY. THEY ARE NOT ISSUED FOR CONSTRUCTION OR CONSTRUCTION CERTIFICATE OR FOR THE PURPOSES OF PRICING BY ANY CONTRACTOR

TRUE NORTH

Katris Architects Pty Ltd
Level 1 3-5 Burwood Road, Concord NSW 2137
PO Box 703 Burwood 1805 NSW Australia
ABN 79 001 639 970
p 02 9744 5421
f 02 9747 5046
www.katris.com.au
Nominated Architects Nick Katris (Reg 3878), Peter Katris (Reg 4569), Chris Katris (Reg 9724)

PROJECT: Lots 1-5 & 21-26 in DP3393 — 72 Laycock Street, Bexley North	CLIENT: AHEPA NSW			
	DRAWN: KW	ARCHITECTS APPROVAL: NK		JOB No.: 1375-17
TITLE: SITE PLAN	DATE: 20.03.2020	SCALE @ A3: 1:200	SCALE @ A1: 1 : 200	DRAWING No: A006 — ISSUE: G

Appendix D

Julius Boncato

From: Edward Osiowy <Edward.Osiowy@transport.nsw.gov.au>
Sent: Monday, 5 August 2019 4:45 PM
To: Julius Boncato
Subject: RE: Enquiry to Relocate a Bus Stop - 72 Laycock Street, Bexley North (Bexley Bowling Club)

Follow Up Flag: Follow up
Flag Status: Completed

Hi Julius,

Initial high-level review shows no particular issues with the proposed relocation of the westbound bus stop on Edward St (TSN 2207188). The two existing street trees however might be a factor in more detailed investigations.
The actual, final bus stop location and layout will be subject to more detailed assessment by Council and the local bus operator in relation to traffic and pedestrian safety, the two street trees, ELPs and the proposed new driveway.

Please let me know if you need more info.

Regards,

Edward Osiowy
Planner
Services
Greater Sydney Division
Transport for NSW

Level 2, 18 Lee Street, CHIPPENDALE NSW 2008,
(PO Box K659 Haymarket NSW 1240)

From: Julius Boncato [mailto:jboncato@pdcconsultants.com.au]
Sent: Monday, 5 August 2019 3:37 PM
To: Edward Osiowy
Subject: FW: Enquiry to Relocate a Bus Stop - 72 Laycock Street, Bexley North (Bexley Bowling Club)

FYI

Kind Regards,

Julius Boncato
Traffic Engineer

PDC Consultants
m: +61 435 957 061
e: jboncato@pdcconsultants.com.au
w: www.pdcconsultants.com.au
a: Suite 202 / 27-39 Abercrombie Street, Chippendale NSW 2008

We have moved! Please note our new address is Suite 202 / 27-39 Abercrombie St, Chippendale.

From: Julius Boncato
Sent: Tuesday, 23 July 2019 9:59 AM
To: information@transport.nsw.gov.au
Cc: Paul Corbett <pcorbett@pdcconsultants.com.au>
Subject: Enquiry to Relocate a Bus Stop - 72 Laycock Street, Bexley North (Bexley Bowling Club)

Hi TfNSW,

I am a traffic engineer, acting on behalf of our client. We are currently working on the proposed redevelopment of Bexley Bowling Club at 72, Laycock Street, Bexley North and we would like to enquire about a potential relocation of a bus stop fronting our site, along Edward Street (see attached screenshot). As per the Proposed Site Plan (see attached), the new access driveway onto Edward Street is located immediately east of the subject bus stop. Accordingly, we would like to understand the process and requirements to undertake a bus stop relocation.

It would be greatly appreciated if you could assist us with this enquiry.

Please do not hesitate to contact me if you require further information or wish to discuss.

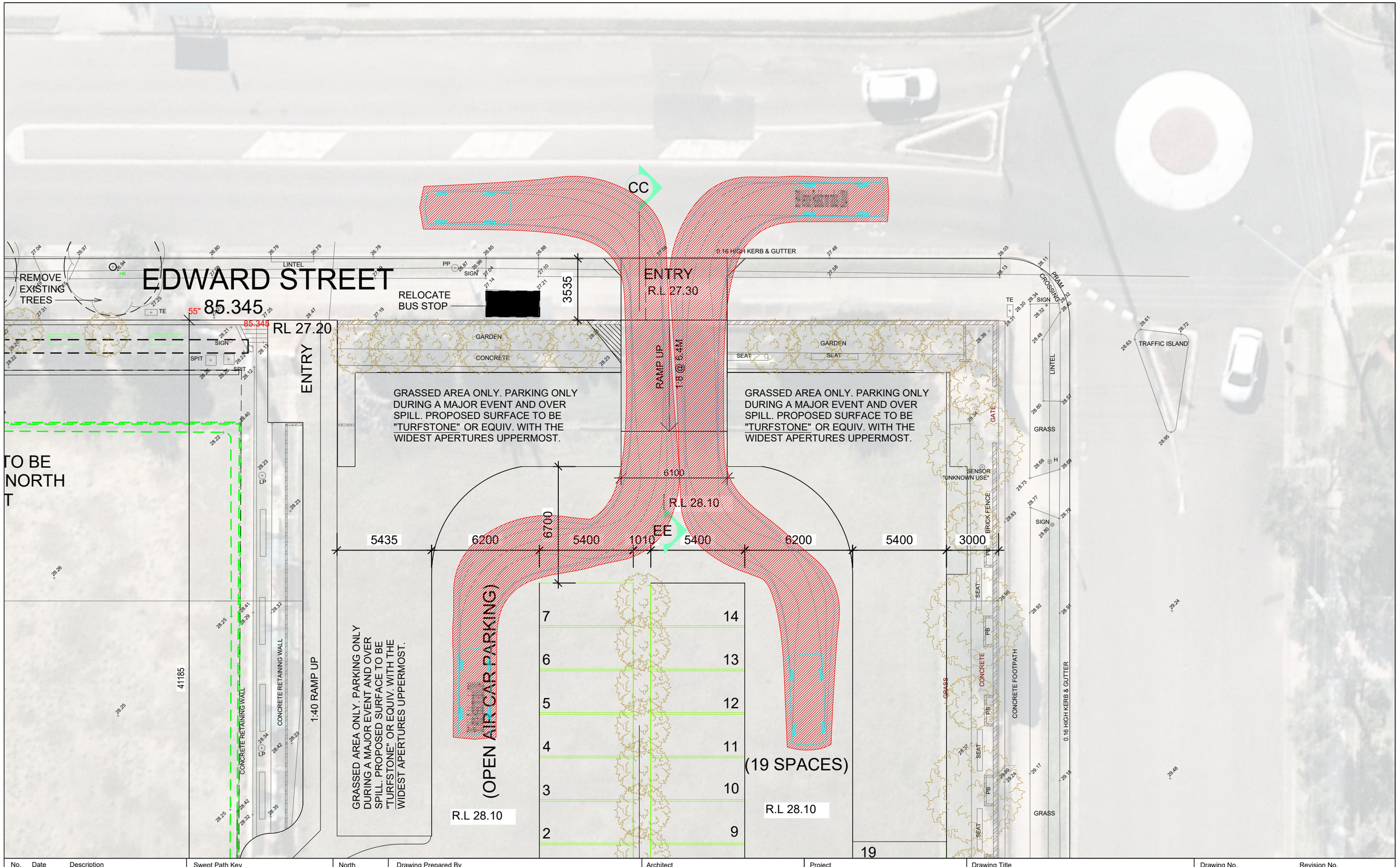
Kind Regards,

Julius Boncato
Traffic Engineer

PDC Consultants
m: +61 435 957 061
e: jboncato@pdcconsultants.com.au
w: www.pdcconsultants.com.au
a: Suite 202 / 27-39 Abercrombie Street, Chippendale NSW 2008

We have moved! Please note our new address is Suite 202 / 27-39 Abercrombie St, Chippendale.

Appendix E



No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

PDC Consultants
Suite 202 / 27-39 Abercrombie Street
Chippendale NSW 2008
t: +61 2 7900 6514
w: www.pdcconsultants.com.au
ABN: 70 615 064 670

Architect	Katris Architects Level 1, 3-5 Burwood Road Concord NSW 2137
Client	Order of AHEPA NSW Inc.
Project	72 Laycock Street Bexley North
Project No	0143
Drawing Title	Site Plan B99 & B85 Design Vehicle Swept Path Analysis Site Entry / Exit Vehicle Movements
Sheet Status	NOT FOR CONSTRUCTION
Drawing No.	001
Revision No.	A
Drawn By	JB
Date	6/04/2020
Scale	1:200 @ A3

0m 2 4 6 8

Typical Vehicle Movement through Drop Off / Pick-Up Area (1 of 2)

Typical Vehicle Movement through Drop Off / Pick-Up Area (2 of 2)

5435 6200 67 5400 1010 EE 5400 6200

GRASSED AREA ONLY. PARKING ONLY DURING A MAJOR EVENT AND OVER SPILL. PROPOSED SURFACE TO BE "TURFSTONE" OR EQUIV. WITH THE WIDEST APERTURES UPPERMOST.

(OPEN AIR CAR PARKING)

R.L 28.10

DROP OFF AREA

7 14
6 13
5 12
4 11
3 10
2 9
1 8

(19 SPACES)

19 18 17 16 15

72 CAR SPACES
R.L 28.10

1:40 RAMP UP

CONCRETE RETAINING WALL

41185

FFL 28.30

RED DASH INDICATES LINE OF ROOF OVER

SHARED ZONE SHARED ZONE

NG.RL 28.30

1:8 RAMP

DISABLED SPACE (1D)

1510

UP

RL 28.40

1200 1200

RAMP UP 1:14

GRADE 1:35 (2.85%) @ 10.5M

6000

FFL 29.25

RL 28.90

"BIKESTORAGE" WALL

MOTORBIKE SPACES

NG BUILDING

No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

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w: www.pdcconsultants.com.au
ABN: 70 615 064 670

Architect
Katris Architects
Level 1, 3-5 Burwood Road
Concord NSW 2137

Client
Order of AHEPA NSW Inc.

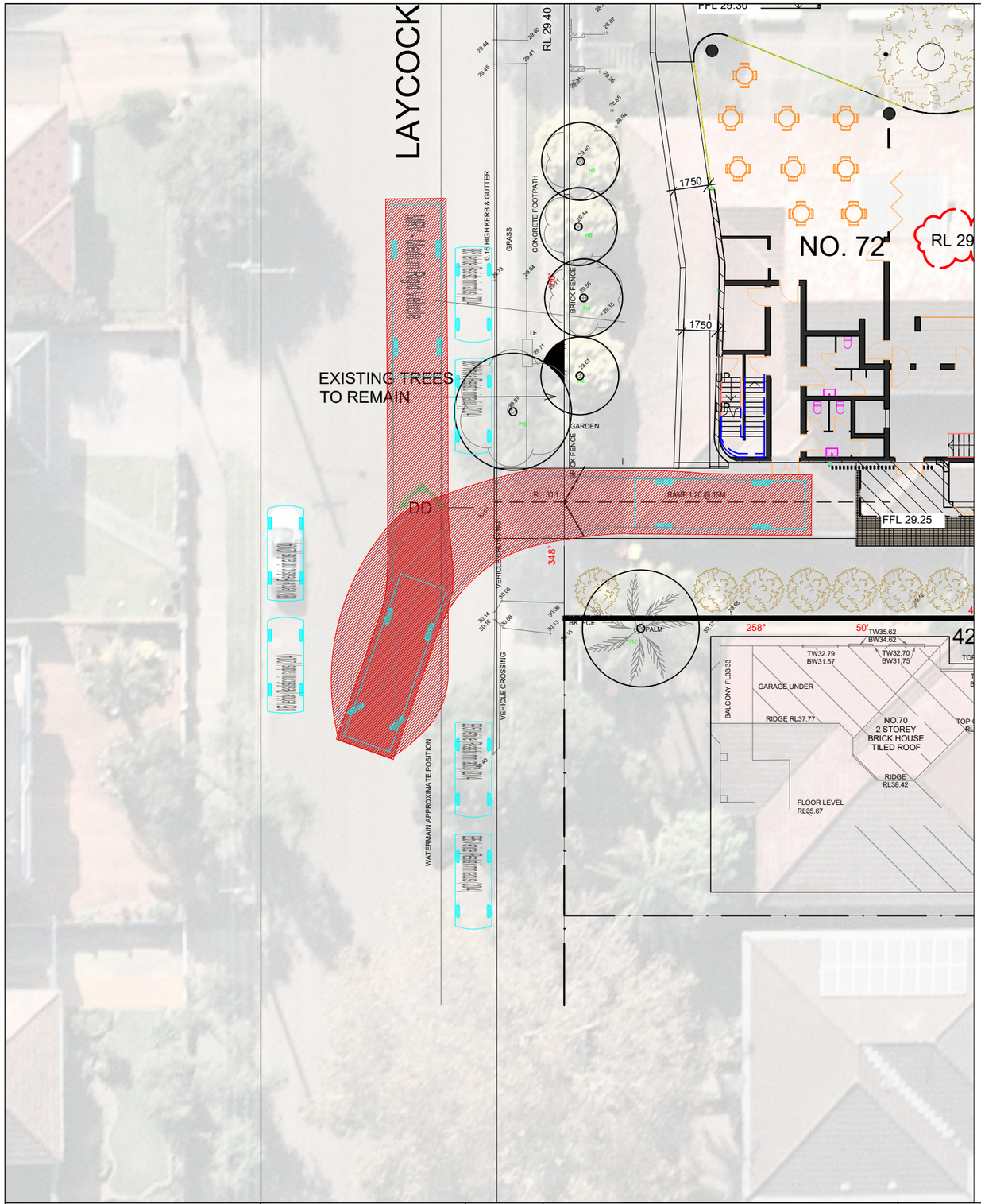
Project
72 Laycock Street
Bexley North

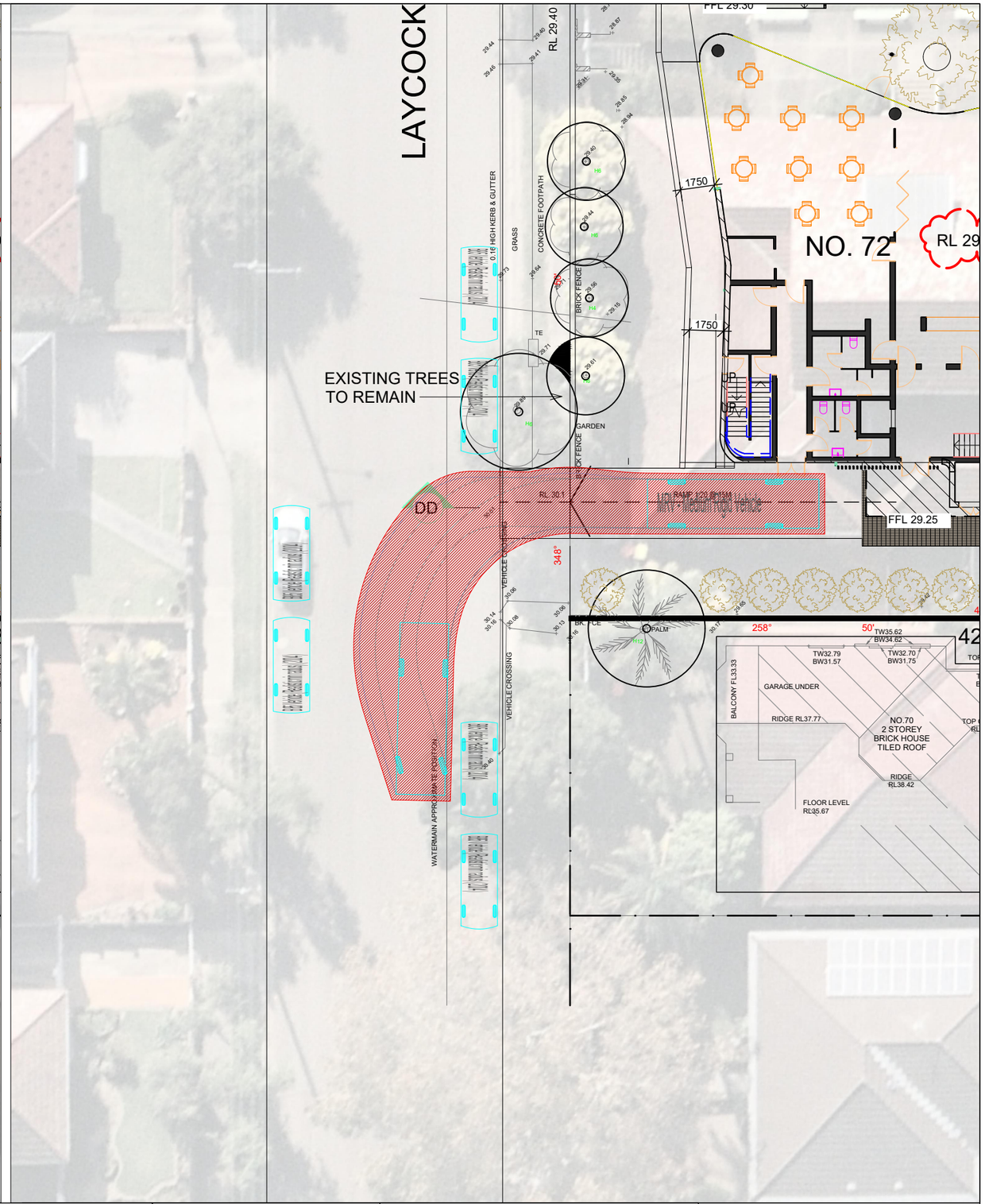
Project No
0143

Drawing Title
Site Plan
B99 Design Vehicle Swept Path Analysis
Vehicle Circulation Through Pick-Up / Drop-Off Area

Sheet Status
NOT FOR CONSTRUCTION

Drawing No. 002
Revision No. A
Drawn By JB
Date 6/04/2020
Scale 1:200 @ A3
0m 2 4 6 8





No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

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Concord NSW 2137

Client
Order of AHEPA NSW Inc.

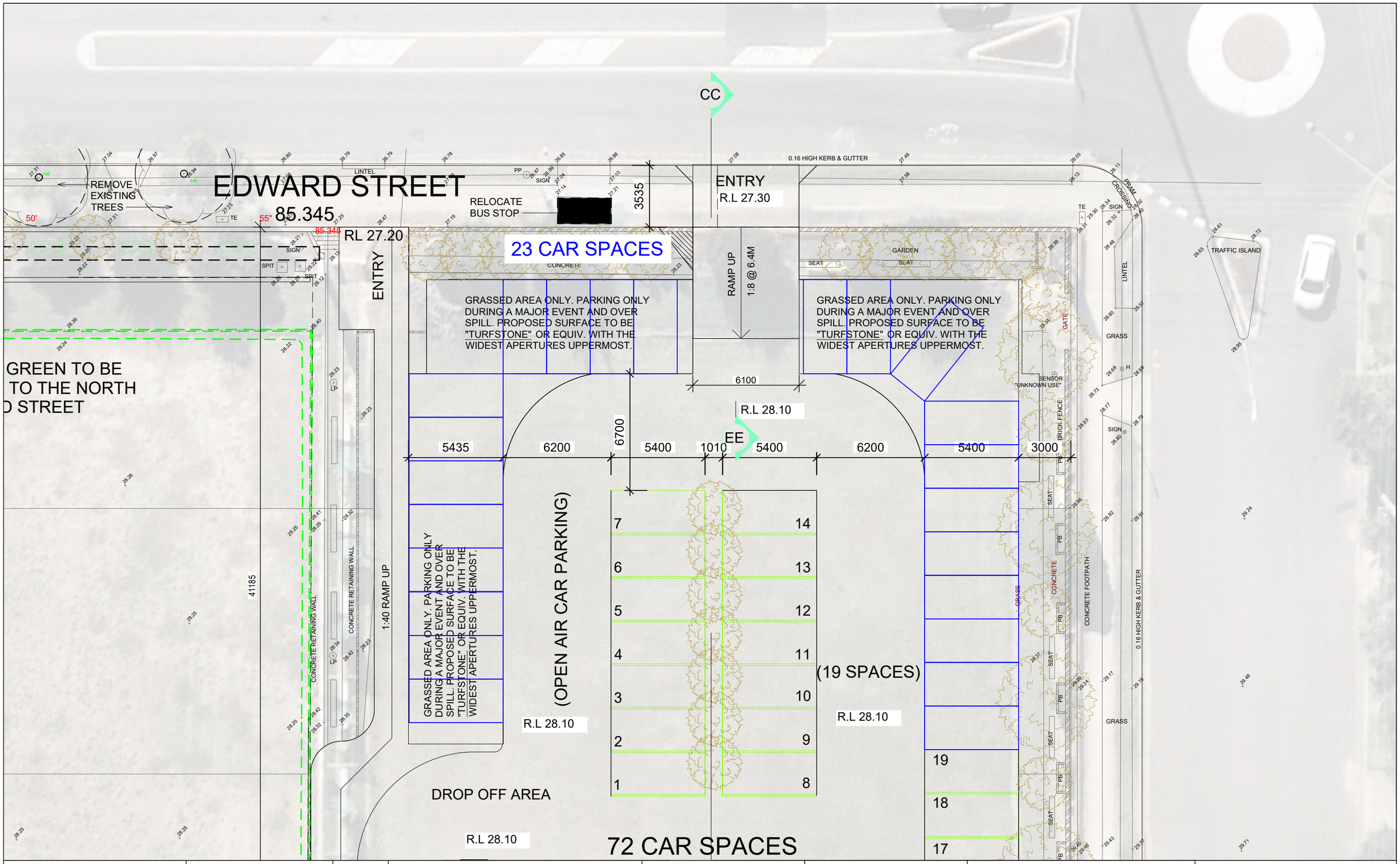
Project
72 Laycock Street
Bexley North

Project No
0143

Drawing Title
Site Plan
8.8m MRV Swept Path Analysis
Site Entry / Exit Movements

Sheet Status
NOT FOR CONSTRUCTION

Drawing No. 003
Revision No. A
Drawn By JB
Date 6/04/2020
Scale 1:250 @ A3



No.	Date	Description

Swept Path Key
- Vehicle Wheel Path
- Vehicle Body Envelope
- 300mm Vehicle Clearance

North

Drawing Prepared By

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Architect
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Concord NSW 2137

Client
Order of AHEPA NSW Inc.

Project
72 Laycock Street
Bexley North

Project No
0143

Drawing Title
Site Plan
Grassed Area Parking Indicative Car Park Layout
23 Car Spaces

Sheet Status
NOT FOR CONSTRUCTION

Drawing No.
004

Revision No.
-

Drawn By
JB

Date
6/04/2020

Scale
1:200 @ A3
0m 2 4 6 8

Appendix F

TRAFFIC GENERATION & DISTRIBUTION OF PROPOSED DEVELOPMENT

FRIDAY EVENING VOLUMES (36 IN, 9 OUT)
SATURDAY AFTERNOON VOLUMES (27 IN , 18 OUT)