1 Walmsleys Road, Bilambil Heights

Residential Development Traffic Impact Assessment

Bilambil Holdings

30 June 2021

Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

E: admin@bitziosconsulting.com.au

Document Issue History

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P5102.001R 1 Walmsleys Road Bilambil Heights TIA	J. Imai	B. James	B. James	30/06/2021	Ned Wales nedwales@gmail.com David Smouha smouha@mac.com

CONTENTS

		Page
1.	**INTRODUCTION**	**1**
1.1	Background	1
1.2	Proposed Development	1
1.3	Future Planning Context	2
1.4	Scope	3
2.	**EXISTING CONDITIONS**	**4**
2.1	Existing Site	4
2.2	Road Network	4
2.2.1	Key Road Network	4
2.2.2	Scenic Drive	4
2.2.3	Kennedy Drive	4
2.2.4	Walmsleys Road	5
2.3	Crash History	5
2.4	Public Transport	7
2.5	Active Transport	8
3.	**TRAFFIC ASSESSMENT**	**9**
3.1	Background Traffic	9
3.1.1	Background Traffic Growth	9
3.2	Development Traffic	9
3.2.1	Generation	9
3.2.2	Distribution	10
3.2.3	Kennedy Drive Capacity	10
3.3	Design Traffic	10
3.4	Intersection Analysis	10
3.5	Traffic Impact Summary	11
3.6	Section 7.11 Road Contributions	11
4.	**SITE ACCESS ASSESSMENT**	**12**
4.1	Overview	12
4.2	Walmsley Access	12
4.2.1	Location and Form	12
4.2.2	Access Sight Distance	12
4.2.3	Geometric Constraints	13
4.3	Scenic Drive Access	13
4.3.1	External Access Location and Form	13
4.3.2	Access Sight Distance	14
4.3.3	Turn Warrants	15
4.3.4	Geometric Constraints	15
4.3.5	Recommendations	16
5.	**PARKING ASSESSMENT**	**17**
5.1	Car Parking Requirements	17
5.2	Bicycle Parking Requirements	17
5.3	Internal Geometric Layout	17

6. SERVICING ASSESSMENT **19**
6.1 Servicing Vehicle 19
6.2 Refuse Collection 19
7. SUMMARY AND CONCLUSIONS **20**

Tables

Table 2.1: Surrounding Road Network
Table 2.2: Key Intersections
Table 2.3: Crash Review (2015-2019)
Table 3.1: Peak Hour Development Traffic Generation
Table 3.2: Development Traffic Directional Splits
Table 3.3: Daily Development Traffic Generation
Table 3.4: Scenic Drive / Warringa Drive SIDRA Intersection Results
Table 3.5: Development Road Contributions
Table 4.1: Vehicle Access Details
Table 4.2: Vehicle Access Details
Table 5.1: Car Parking Requirements
Table 5.2: Bicycle Parking Requirements – Council
Table 5.3: Internal Geometric Layout Requirements

Figures

Figure 1.1: Subject Site Location
Figure 1.2: Future Network Upgrades
Figure 2.1: Crash History
Figure 2.2: Surrounding Public Transport Network
Figure 2.3: Surrounding Active Transport Network
Figure 4.1: Walmselys Road Sight Distance Assessment
Figure 4.2: Scenic Drive Sight Distance Assessment
Figure 4.3: Scenic Drive Turn Warrants Assessment
Figure 4.4: Scenic Drive (Westbound) Geometric Constraints

Appendices

Appendix A: Development Plans
Appendix B: Traffic Surveys
Appendix C: Traffic Diagrams
Appendix D: SIDRA Outputs

1. INTRODUCTION

1.1 Background

Bitzios Consulting (Bitzios) has been engaged to prepare a Traffic Impact Assessment (TIA) for a proposed mixed use development located at 1 Walmsleys Road, Bilambil Heights. The subject site is formally described as Lot 1/DP1032820 and is shown in Figure 1.1.

Source: Nearmap

Figure 1.1: Subject Site Location

1.2 Proposed Development

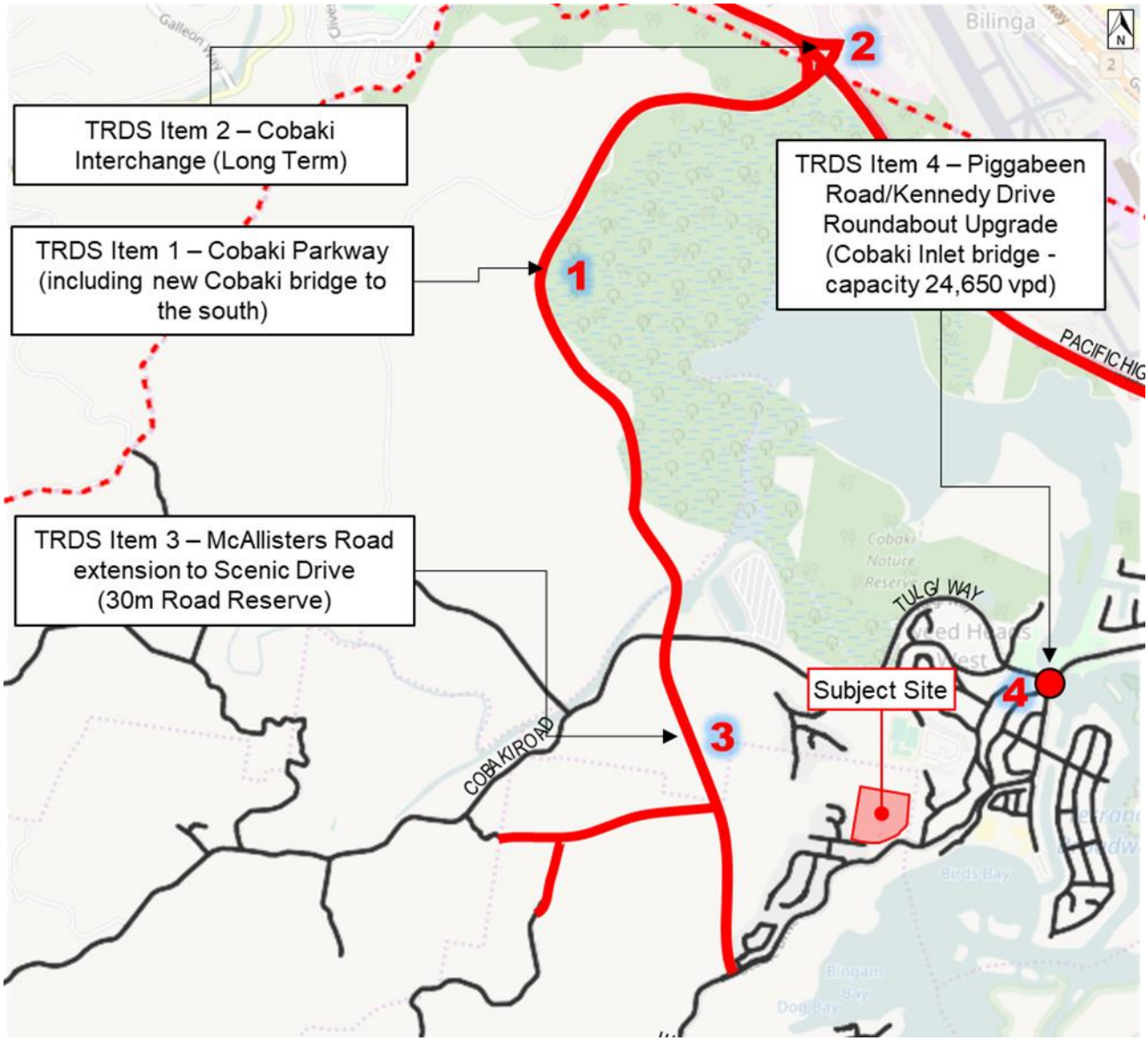
The proposed mixed use development will be comprised of:

- 92 units over four multi-storey buildings
- Three residential apartment buildings with a basement parking level
- One mixed use residential apartment building with food & beverage venue / gallery
- 94 visitor car parking spaces in a shared car park for the site (separate from residential parking provided within basement parking levels)
- Access via Walmselys Road and Scenic Drive on the western and eastern boundaries respectively.

A copy of development plans is provided at **Appendix A**.

1.3 Future Planning Context

The Tweed Road Development Strategy (2017) (TRDS) outlines all planned major public road infrastructure upgrades for the Tweed Shire and is based on forecast population and employment projections over the next 25 years. The TRDS is progressively reviewed and updated every six to eight years. The TRDS does not outline any definitive timing or prioritise delivery of road infrastructure. The key future planned road network infrastructure for West Tweed / Bilambil and its relevance to the subject site as shown in Figure 1.2.



SOURCE: Tweed Road Development Strategy (2017)

Figure 1.2: Future Network Upgrades

Prior to the upgrades in Figure 1.2, traffic in the area is required to use Kennedy Drive and the Piggabeen Road / Kennedy Drive intersection. Item 4 (roundabout upgrade) may allow for a slightly greater VPD capacity at the Piggabeen Road / Kennedy Drive intersection in the short term, however, we understand that Council does not yet have this intersection in their works schedule and its benefit to the network is limited until the Cobaki Parkway to the north comes online.

New connections to the M1 through Cobaki will impact the development traffic distribution onto the surrounding network and potentially re-route a large portion of trips to the west of the site before heading north to the M1.

Council has also provided details of a previous resolution which limits developments west of the Cobaki Inlet until such a time that Cobaki Parkway is constructed and remains active at the time of this assessment. In 2015 Council resolved to limit traffic generated by developments west of Kennedy Drive to a maximum daily road volume of 24,650 vehicles per day (vpd). This road capacity constrains was deemed to be the maximum traffic capacity of the two-lane section of Kennedy Drive at the Cobaki Inlet Bridge.

Council has based the spare capacity of existing Cobaki Inlet bridge on the following:

- A background traffic count from the original 2007 report which is around 18,540vpd. Background traffic volumes were not updated at the time of the 2015 Council resolution due to the impact of the Kennedy Drive "four-laning" upgrade works occurring around that time
- Approved or current development applications (DAs) west of the bridge (it is understood this did include around 50% of the proposed Bilambil Rise development and various other approved DAs as of 2015) adding approximately 5,450 vpd.

Based on the above, the **available capacity** for other 'new' developments west of the bridge is estimated to be around 658vpd. Bitzios is also aware of other recent developments in the area that have already impacted this available capacity. A conservative estimates indicate around **500-600vpd capacity** remains.

It should be noted that this resolution is five (5) years old and background / DA traffic data is due to be recalibrated by Council. However, we understand that no updates are likely to occur (or be finalised) in the short term and as such have not been considered within this assessment.

1.4 Scope

The scope of this assessment included:

- A review of the key surrounding road network, public transport and active transport network
- Estimation of the development traffic generation and quantitative distribution and impacts on the surrounding road network
- Assessment of the car and bicycle parking provision against the requirements of Tweed Shire Council (Council) Development Control Plan (DCP)
- Assessment of the parking geometric layout against Australian Standards AS2890
- Assessment of the proposed access location and form against Council's requirements and AS2890
- A review of the development facilities for servicing and refuse collection.

2. EXISTING CONDITIONS

2.1 Existing Site

The existing site is divided into residential and bio-diversity preservation land zonings with a singular residential dwelling located on the southern boundary. The residential dwelling has a vehicular access via Walmsleys Road and a secondary access on Scenic Drive which has deteriorated and is no longer in use. The subject site has a steep decline from the southern boundary (Walmsleys Road) and is covered in heavy vegetation throughout the site.

2.2 Road Network

2.2.1 Key Road Network

Details of the road network surrounding the subject site are outlined in Table 2.1.

Table 2.1: Surrounding Road Network

Road Name	Jurisdiction	No. of Lanes (two-way)	Hierarchy	Divided	Posted Speed
Scenic Drive	Council	2	Sub-arterial	No	60km/h
Kennedy Drive	Council	4	Sub-arterial	No	50km/h
Walmsleys Road	Council	2	Local Street	No	50km/h
Warringa Drive	Council	2	Local Access	No	50km/h

The surrounding key intersections are shown in Table 2.2.

Table 2.2: Key Intersections

Road 1 Name	Road 2 Name	Jurisdiction	Type
Piggabeen Road	Gollan Drive - Kennedy Drive	Council	Priority Controlled
Scenic Drive	Warringa Drive	Council	Priority Controlled

2.2.2 Scenic Drive

Scenic Drive is a rural sub-arterial road under the jurisdiction of Tweed Shire Council. The road operates as a two-lane, two-way road with a posted speed of 60km/h. The road alignment is steep approaching the subject site with a winding horizontal alignment. Scenic Drive connects to Kennedy Drive and experiences high 'tidal' traffic volumes during morning and afternoon peak periods. Scene Drive is also known to have a high occurrence of vehicle crashes along its length due to its poor alignment and steep drop-off on the southern side of the road.

2.2.3 Kennedy Drive

Kennedy Drive operates as the primary sub-arterial road for the north-western suburbs of the Tweed Shire. The road is under the jurisdiction of the Council and is the major connection to the Pacific Motorway for the Bilambil, Bilambil Heights, Cobaki and Piggabeen areas. The road operates as a four-lane, two-way road with a 50km/h speed limit. The development is subject to a Tweed Shire Council Resolution, which limits the available network capacity servicing the Bilambil Heights area until such a time that Cobaki Parkway is delivered. As the subject site is located to the west of the

Cobaki Lakes bridge, this resolution constrains the level of traffic that can be generated will be subject to the resolution.

2.2.4 Walmsleys Road

Walmsley Road is a residential access road connecting to the subject site from the west and operates as a two-lane, two-way road with a posted speed of 50km/h. It is under Council's jurisdiction and provides an existing access to the subject site. Walmsley Drive currently includes an undeveloped road corridor/easement across the subject site.

It is expected that the development would result in a significant uplift in traffic along this residential street as well as Nabilla Street and Warringa Drive (the adjoining access street).

2.3 Crash History

A crash history review was undertaken for the surrounding road network in proximity to the subject site. Table 2.3 details the crash history for the previous five years of available crash history.

Table 2.3: Crash Review (2015-2019)

Year	Road	Severity	RUM Code	Description
2015	Gollan Drive	Non-casualty (towaway)	13	Vehicles from adjacent directions (intersection only)
2015	Kennedy Drive	Serious Injury	87	Off path, on curve or turning
2016	Kennedy Drive	Minor/Other Injury	84	Off path, on curve or turning
2016	Gollan Drive	Minor/Other Injury	13	Vehicles from adjacent directions (intersection only)
2018	Scenic Drive	Non-casualty (towaway)	20	Vehicles from opposing directions
2018	Scenic Drive	Moderate Injury	20	Vehicles from opposing directions
2019	Gollan Drive	Minor/Other Injury	81	Off path, on curve or turning
2020	Gollan Drive	Serious Injury	30	Vehicle from same direction
2020	Gollan Drive	Serious Injury	32	Vehicle from same direction
2015	Scenic Drive	Serious Injury	73	Off path on straight
2015	Scenic Drive	Non-casualty (towaway)	80	Off path, on curve or turning
2015	Scenic Drive	Moderate Injury	81	Off path, on curve or turning
2016	Mount Bilinga Circuit	Non-casualty (towaway)	70	Off path on straight
2016	Scenic Drive	Non-casualty (towaway)	71	Off path on straight
2016	Scenic Drive	Moderate Injury	20	Vehicles from opposing directions
2018	Scenic Drive	Serious Injury	85	Off path, on curve or turning

From the previous five years of available crash data, 9 of the total 16 crashes (56%) were due to 'off path on straight' and 'off path on curve/turning'. Three of the off-path crashes occurred within proximity of the Scenic Drive / Warringa Drive intersection, along the median divided section of Scenic Drive. Of these crashes, there was no clear correlating factors.

Figure 2.1 shows the location of crashes surrounding the subject site.

SOURCE: Queensland Globe Open Source Crash Data

Figure 2.1: Crash History

2.4 Public Transport

The subject site is located 350m away from the nearest bus stop located on Scenic Drive and is serviced hourly by Route 608 which runs from Tweed City to Bilambil Heights via Kennedy Drive and Tweed Heads West. Figure 2.2 shows the location of the bus stops and the desired pedestrian route following the existing footpath network.

In addition, there are school bus stops to the west that are serviced by multiple school buses connecting to the surrounding public and high schools within the Tweed Shire.

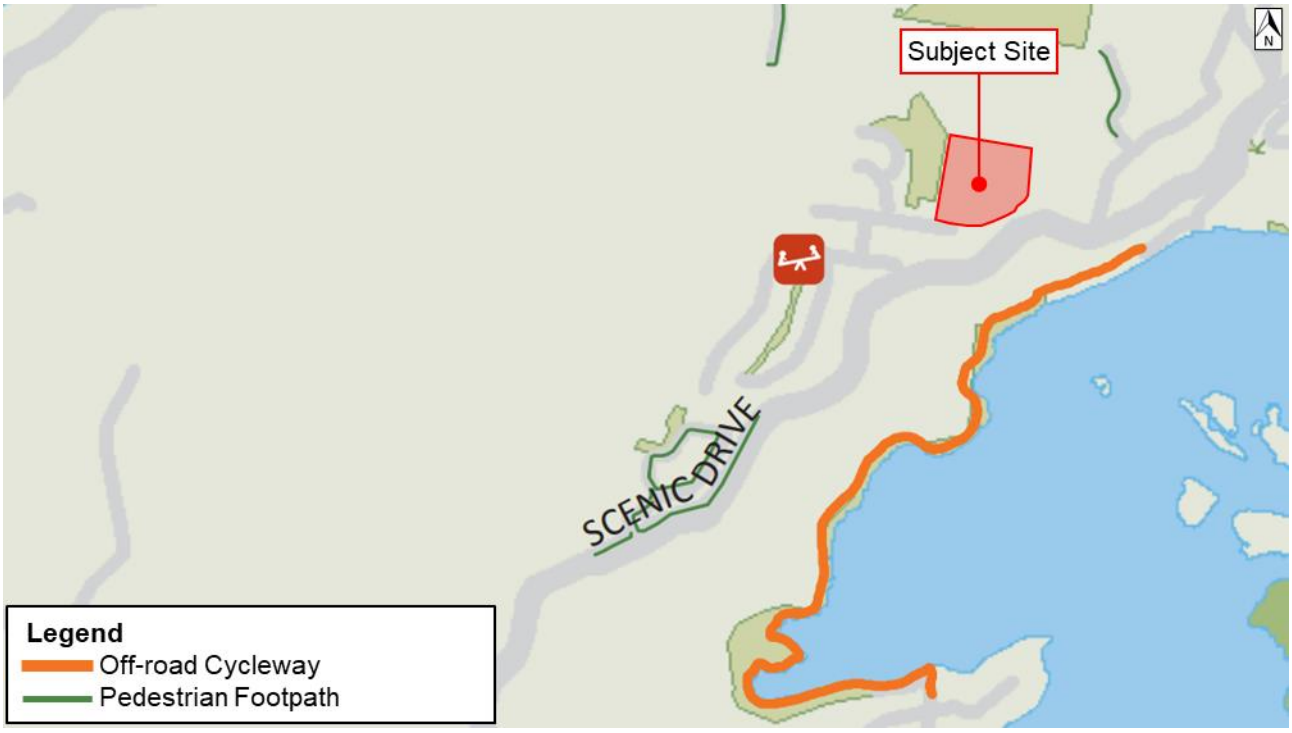
Source: Nearmap

Figure 2.2: Surrounding Public Transport Network

The topography of Scenic Drive provides insufficient shoulder width to include any bus stops fronting the development site. The existing bus stops to the west and south are considered sufficient to service the site.

2.5 Active Transport

Pedestrian facilities surrounding the subject site are shown in Figure 2.3



Source: Council Cycleways and Footpaths Map

Figure 2.3: Surrounding Active Transport Network

The proposed development site is located in a rural area with low walking demand and does not trigger the need for new or upgraded active transport facilities in the surrounding network. However, it is recommended that the proposed development provide a footpath connection to the site boundary at Walmsleys Road.

Furthermore, considering the road conditions specified above, the environment of Scenic Drive provides unsafe conditions for walking and cycling. As such, further upgrades to active transport connectivity along Scenic Drive is not deemed warranted and active transport connectivity should remain similar to the existing provisions of the surrounding properties fronting Scenic Drive.

3. TRAFFIC ASSESSMENT

3.1 Background Traffic

Background traffic was surveyed at the intersection of Scenic Drive / Warringa Drive on the 5 May 2021. Peak hours observed from the traffic survey were 7:45am-8:45am and 3:45pm-4:45pm. A copy of the traffic survey data is attached at **Appendix B**.

3.1.1 Background Traffic Growth

A growth of 2% p.a. compounding annually was applied to the 2021 surveys to forecast background traffic volumes for the anticipated year of opening (assumed 2023) and a ten-year design horizon (2033). This growth rate is consistent with previous assessments undertaken in the area (*ref: P4622.001R Scenic Drive Bilambil Subdivision TIA – DA21/0404 Lodged 03/06/2021*).

This is considered a conservative growth rate assumption as, historically, no significant development has occurred in the region over the past 10 years. Growth rates have only been applied to 'through' volumes on Scenic Drive as Warringa Drive is an enclosed residential loop with no wider network connections and limited room for additional developments. It is assumed the only growth on Warringa Drive will be that of the proposed development.

A copy of the forecast background traffic is attached at **Appendix C**.

3.2 Development Traffic

3.2.1 Generation

Development traffic was estimated using the Transport for New South Wales (TfNSW formerly RMS) *Guide to Traffic Generating Developments* (2002) and the *Technical Direction* (2013) to source trip generation rates for the existing and proposed developments.

The estimated net traffic generation of the proposed development is outlined in Table 3.1.

Table 3.1: Peak Hour Development Traffic Generation

Land Use	Quantity	Traffic Generation Rates		Trips (vph)	
		AM	PM	AM	PM
Existing Development					
Low Density	1	0.71	0.78	(-) 1	(-) 1
Proposed Development					
High Density	92	0.53	0.32	(+) 49	(+) 30
			Net Increase in Trips	**48**	**29**

The proposed development is estimated to result in a net increase of 48 trips in the AM and 29 trips during the PM peak. Assuming uniform flow, this would equate to approximately one additional trip approximately every minute in the AM peak, and one additional trip every two minutes in the PM peak.

This quantum of traffic is considered low and the operational capacity of the surrounding road network is not expected be adversely impacted. However, considering the low level of traffic currently utilising Walmsleys Road and Warringa Drive additional intersection capacity analysis has been undertaken at the nearby Scenic Drive / Warringa Drive priority controlled intersection to ensure there are no impacts as a result of the development that warrant mitigation measures (Section 3.4).

3.2.2 Distribution

A typical residential 'IN:OUT' split was adopted for this assessment to estimate the distribution of the development traffic onto the surrounding road network. The 'IN:OUT' split of development traffic is summarised in Table 3.2.

Table 3.2: Development Traffic Directional Splits

Land Use	Peak Trips		AM Split		PM Split		AM Trips		PM Trips	
	AM	PM	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Multiple Dwelling	49	29	20%	80%	70%	30%	10	40	21	9

The distribution of development traffic has been based on background traffic surveys and an understanding of the surrounding trip attractors, generally favouring eastbound trips to Tweed Heads, the beach and the Pacific Motorway. The development traffic distributions and assignment are attached at **Appendix C**.

3.2.3 Kennedy Drive Capacity

Expected daily traffic generation of the existing and proposed developments are outlined in Table 3.3.

Table 3.3: Daily Development Traffic Generation

Land Use	Quantity	Trip Generation Rate	Trips (vpd)
Existing Development			
Residential Dwelling	1	7.4	(-) 8
Proposed Development			
High Density Residential	92	4.58	(+) 422
		Total	**414**

The proposed development results in 414 additional daily vehicle trips being introduced onto Kennedy Drive. This is within the allowable daily increase as determined by Council's Resolution (2015) and it is estimated that between 100-200vpd would remain after the introduction of the development. It should be noted that traffic impacts to the wider network and other pinch point locations along Kennedy Drive are considered outside the scope of this assessment and should be addressed as part of Councils wider TRDS.

3.3 Design Traffic

The forecast background traffic was combined with the development traffic to determine the design traffic volumes for the years 2023 and 2033. The design traffic volumes are attached at **Appendix C**.

3.4 Intersection Analysis

SIDRA Intersection 9 was used to assess the development traffic impacts on the Scenic Drive / Warringa Drive priority controlled intersection. No changes to the intersection layout were made for either the year of opening (2023) or 10-year design horizon (2033). The layout of the Scenic Drive / Warringa intersection used in the SIDRA assessment is attached at **Appendix D**.

Acceptable key performance indicators for a priority controlled intersection include:

- Degree of saturation (DOS) less than 0.8
- Average delay less than 25 seconds per vehicle
- 95th percentile back of queue length not resulting in upstream or short lane blockages

The SIDRA output summary is provided in Table 3.4, with full Movement Output Summaries attached at **Appendix D**.

Table 3.4: Scenic Drive / Warringa Drive SIDRA Intersection Results

Year	Time Period	Scenario	DOS (v/c)	Average Delay (sec)	95th% Back of Queue (m)
2023	AM	Background	0.24	1.0	2.3
		Design	0.24	1.5	4.0
	PM	Background	0.22	0.7	0.9
		Design	0.22	1.0	1.5
2033	AM	Background	0.30	1.0	2.8
		Design	0.30	1.5	4.8
	PM	Background	0.27	0.6	1.0
		Design	0.27	0.9	1.5

The development generated traffic has minimal impact on the Scenic Drive, resulting in a negligible increase in average delay and queue in all design scenarios.

3.5 Traffic Impact Summary

The development traffic is not anticipated to result in any significant net worsening to the surrounding road network nor surpass Council's Resolution limit on Kennedy Drive. There are therefore no issues that warrant any intersection upgrades or mitigation measures to be implemented to the surrounding road network as a result of the proposed development.

3.6 Section 7.11 Road Contributions

The subject site is located in Sector 4 – Bilambil Heights of Council's Local Area Contributions as per Section 7.11 of the *Tweed Road Contribution Plan* (2020) which requires a Standard Trip End Cost $1,312 per end trip. Table 3.5 summarises estimated daily trips for the purposes of Road Contributions for the development.

Table 3.5: Development Road Contributions

Land Use	Trip Rate	Quantity	Daily Trips
Multi Dwelling Housing	3.9 per dwelling	92 dwellings	359
Refreshments Room (e.g. Restaurant)	60 per 100m^2 GLA	400m^2	240
Discounts	**Rate**	**Quantity**	**Reduction Trips**
Existing Dwelling House	6.5 per dwelling	1 dwelling	(-) 6.5
Employment Generation Discount (Commercial only)	40% reduction	240 Daily Trips	(-) 96
		Total	**497**

The above daily trips are estimated to require contributions as follows:

- Road Contribution trips: 497 per day
- Trip End Rate: $1,317 per trip
- ***Estimated Road Contribution:*** ***$65,459***

It should be noted that this trip end rate is based on Council's publicly available *CP04 Section 7.11 Plan – Tweed Road Contribution Plan* (2020) and is subject to change.

4. SITE ACCESS ASSESSMENT

4.1 Overview

The development proposes two access locations, being on Walmsleys Road and Scenic Drive. Primary access for development traffic, including servicing and refuse collection has been proposed via the Walmsleys Road as a two-way, all-movements access. The Scenic Drive access is intended as a secondary access in the form of left-in / left-out only.

4.2 Walmsley Access

4.2.1 Location and Form

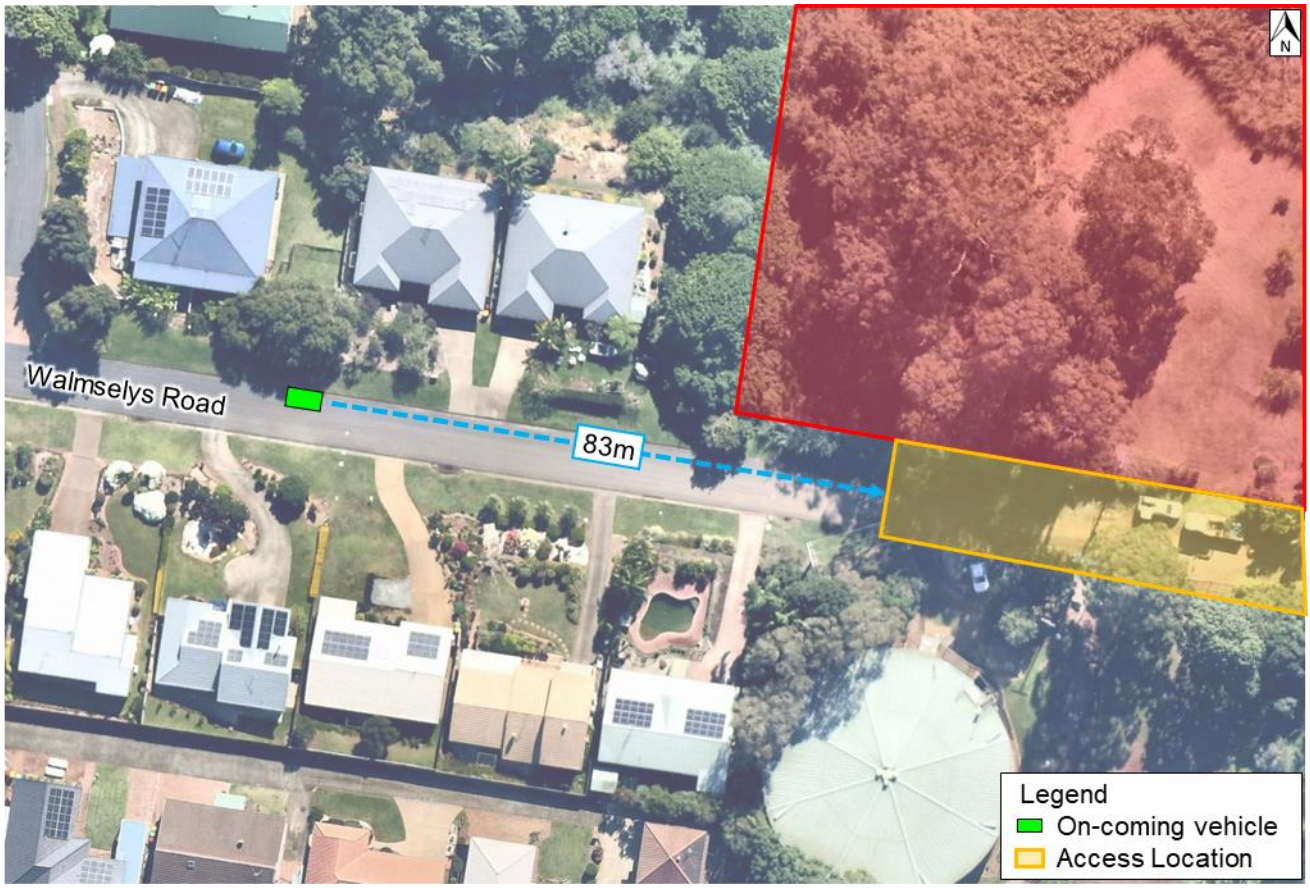
The Walmselys Road access is proposed at the end of the Walmsleys Road cul-de-sac, towards the western side of the subject site's southern boundary. The crossover location shares an easement with the adjacent Council utility lot. The vehicular access form will be generally in accordance with the requirements of Council's Driveways and Crossings Code and AS2890, with the design parameters summarised in Table 4.1.

Table 4.1: Vehicle Access Details

Design Element	Details
Access Facility Category	Access Category 2 (101 to 300 parking space / local road)
Crossover Form	Minimum 6.0m width – Designed in accordance with Council's Standard Drawing S.D.017
Pedestrian Sight Line Triangle	Pedestrian sight line triangles are required on both sides of the driveway at 2.0m along the property boundary, 2.5m into site as per Figure 3.3 in AS2890.1. The area within the triangle is to be kept clear of all obstructions to visibility.
Crossover Location	Minimum 2.0m separation from the side property boundary Minimum 3.0m separation from any adjacent crossovers

4.2.2 Access Sight Distance

The alignment of Walmsleys Road is generally straight with a decline towards the subject site. The development is the last Lot on Walmselys Road and is not expected to have any negative impacts on the surrounding developments. AS2890.1 Figure 3.2 requires a sight distance of 83m to achieve a desirable five second gap for a design speed frontage road of 60km/h (50km/h posted speed + 10km/h). Figure 4.1 shows the required sight distance for the Walmselys Road access.



SOURCE: Nearmap

Figure 4.1: Walmselys Road Sight Distance Assessment

4.2.3 Geometric Constraints

Walmselys Road has a channel drain running along the northern side of the road, which departs from the road before reaching the subject site. There are also a number of in-ground utilities located in the easement. There are no geometric constraints in proximity to the Walmsleys Road access that would constrain the proposed access.

4.3 Scenic Drive Access

4.3.1 External Access Location and Form

An access assessment has been undertaken for Scenic Drive to determine the feasibility, form and required works to achieve a desirable outcome. It is understood that a left-in / left-out vehicular access has been proposed on Scenic Drive towards the eastern side of the southern boundary consistent with the existing access location. The vehicular access form will be generally in accordance with the requirements of Council's Driveways and Crossings Code and AS2890, with the design parameters summarised in Table 4.2.

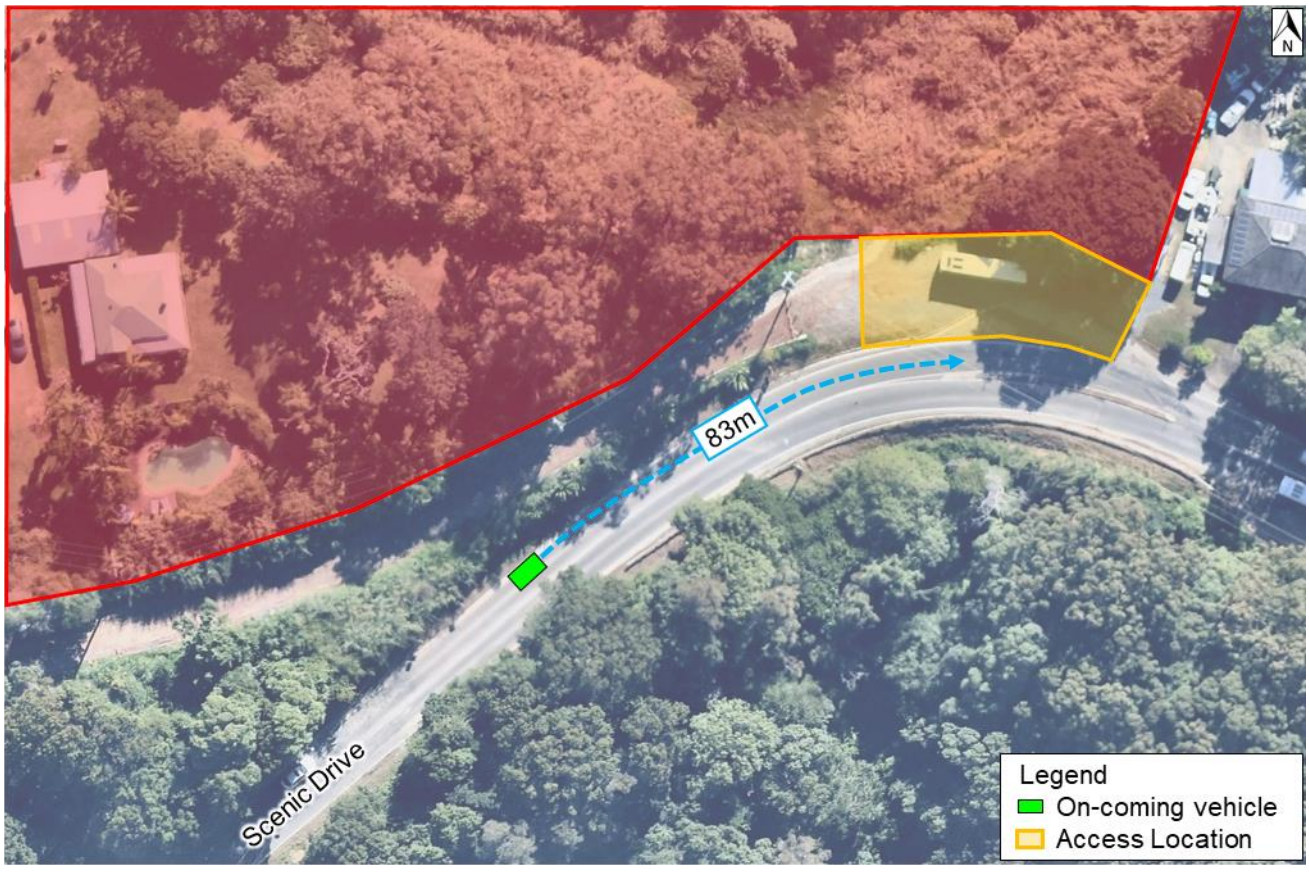
Table 4.2: Vehicle Access Details

Design Element	Details
Access Facility Category	Access Category 2 (101 to 300 parking space / local road)
Crossover Form	Minimum 6.0m width – Designed in accordance with Council's Standard Drawing S.D.017
Pedestrian Sight Line Triangle	Pedestrian sight line triangles are required on the egress side of the driveway at 2.0m along the property boundary, 2.5m into site as per Figure 3.3 in AS2890.1. The area within the triangle is to be kept clear of all obstructions to visibility.
Crossover Location	Minimum 2.0m separation from the side property boundary Minimum 3.0m separation from any adjacent crossovers

4.3.2 Access Sight Distance

A 7-day tube count was undertaken on Scenic Drive located 260m east of Warringa Drive. The 85th percentile speed was recorded to be 57km/h at this location. *AS2890.1 Figure 3.2 (2004)* specifies for a frontage speed of 60km/h, the desired five second gap requires a sight distance of 83m.

Figure 4.2 illustrates the available sight distance on Scenic Drive for the left-in/left-out only access, complaint with AS2890.1, noting that the proposed access location is on a curve in the road and is generally on slight decline towards the east.

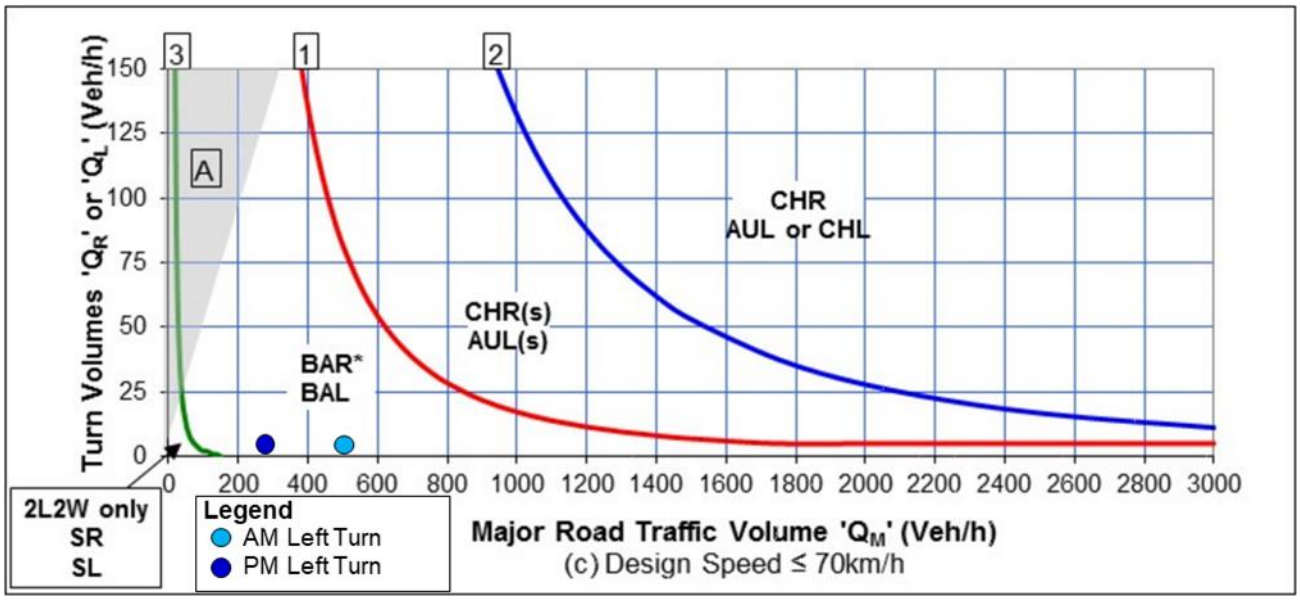


SOURCE: Nearmap

Figure 4.2: Scenic Drive Sight Distance Assessment

4.3.3 Turn Warrants

A turn warrants assessment was undertaken to determine the level of works required to implement a safe access arrangement on Scenic Drive. Based on the survey data and the proposed development generated traffic and distribution splits, the development would require a Basic Auxiliary Left turn (BAL) treatment as shown in Figure 4.3.



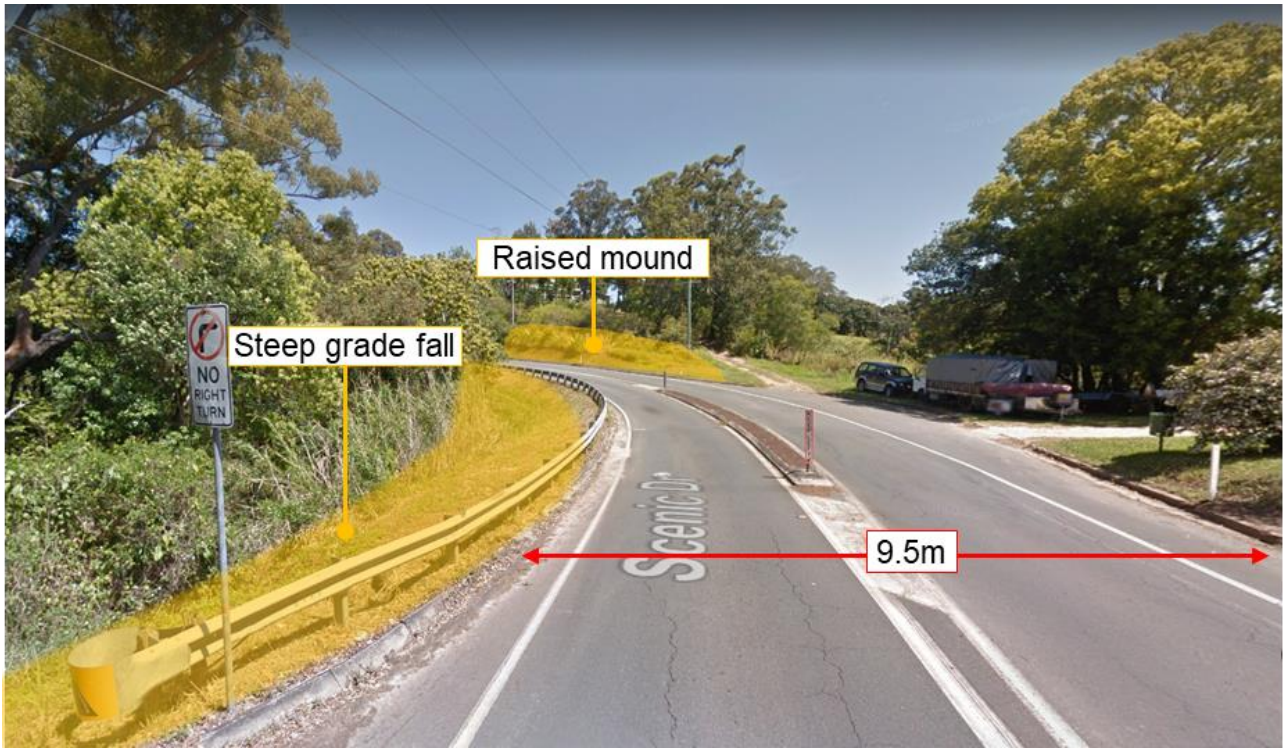
SOURCE: Figure 4A-A3 Supplement to Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersection

Figure 4.3: Scenic Drive Turn Warrants Assessment

4.3.4 Geometric Constraints

The section of Scenic Drive fronting the proposed access location is bounded by heavy vegetation and a vertical drop on the southern side. The existing road has a width of 9.5m, the minimum to accommodate two 3.5m travel lanes, two 1.0m shoulder and a 0.5m concrete centre median fronting the subject site. Further analysis would be required to calculate additional widening based on largest design vehicle swept paths.

Turn warrants (refer Section 4.3.3) indicate that a BAL turn treatment is required. Figure 4.4 shows the geometric constraints on Scenic Drive.



SOURCE: Google Maps

Figure 4.4: Scenic Drive (Westbound) Geometric Constraints

4.3.5 Recommendations

To provide anything greater than a left-in/left-out only access onto Scenic Drive significant works would be required to provide a safe access for the development.

It is recommended that the Scenic Drive access is maintained as left-in / left-out only with minor widening for a BAL treatment. To achieve a compliant BAL treatment, Scenic Drive would need to be widened to accommodate an additional 3.0m shoulder lane, requiring excavation of the raised mount on the northern side of Scenic Drive or encroaching on the existing steep slope to the south and relocation of the existing centre median.

Furthermore, Scenic Drive should only be used as a secondary access with the majority of development movements encouraged to utilise the Walmsleys Road access.

5. PARKING ASSESSMENT

5.1 Car Parking Requirements

The car parking requirements for the proposed mixed use dwelling development have been assessed against Council's *Development Control Plan* (2014) requirements.

Table 5.1 details the car parking requirements and provision for the proposed development.

Table 5.1: Car Parking Requirements

Land Use	Quantity	Parking Rate	Parking Type	Spaces Required
Residential Flat Building	92 2-bedroom Units	1.5 per 2-bedroom unit	Residential	138
		1 per 4 units	Visitor	23
Food & Drink	400m^2 GFA	1 per staff	Staff	TBC
		3.5/100m^2 GFA	Visitor	14

It is understood that the residential parking shall be supplied as basement parking for each of the four proposed buildings to be assessed as part of future development applications. The publicly accessible food and beverage / gallery parking shall also be assessed as part of future development applications when more information is known about the operation of the food & beverage / gallery land uses. Currently, 94 visitor parking spaces have been proposed as part of the food & beverage / gallery.

5.2 Bicycle Parking Requirements

The bicycle parking requirements for the proposed multiple dwelling development have been assessed against Council's DCP requirements.

Table 5.2 details the bicycle parking requirements and provisions for the proposed development.

Table 5.2: Bicycle Parking Requirements – Council

Land Use	Quantity	Parking Rate	Parking Type	Spaces Required
Multi Dwelling Housing	92	1 per units	Class B	92
		1 per 8 units	Class C	12
Food & Beverage	400m^2	1 per 100m^2 GFA	Class B	4
		1 per 50m^2 GFA	Class C	8

Similar to the car parking provision, the bicycle parking supply shall also be addressed at as part of future development applications. Visitor bicycle parking shall be located within proximity of the building entrances where passive surveillance can occur.

5.3 Internal Geometric Layout

The proposed development's car parking, internal road geometry and layout shall comply with the requirements of Council's *DCP* (2014) and Australian Standards (AS2890). The internal road layout shall also cater for the largest design vehicle, anticipated to be Council's front-loader RCV.

Table 5.3 summarises the geometric requirements for the development.

Table 5.3: Internal Geometric Layout Requirements

Design Element	Requirements
Residential Parking Bays (User Class 1A)	2.4m wide x 5.4m long
Visitor Parking Bays (User Class 2)	2.5m wide x 5.4m long
Visitor Parking Bays (User Class 3)	2.6m wide x 5.4m long
Parking Aisle width	5.8m
Internal Road Width (Two-way)	5.5m plus 0.3m per side bound by a wall
Visitor Turnaround Bays	Sufficient space to turn around
Blind Aisle Extension	1.0m
Clearance to vertical obstructions	0.3m
Column Intrusions	As per Figure 5.2 in AS2890.1 (2004)
Grades (Entry)	Max. 1:20 for first 6m into site
Grades (Parking Module)	Max. 1:20 measured parallel to the angle of parking. Max 1:16 measured in any other direction
Height Clearance	Minimum 2.2m clearance to overhead structure and obstructions
Resident Bicycle Parking (User Class 2)	0.5m wide x 1.8m long with 1.5m access aisle Located in a secure room / structure protected from weather
Resident Bicycle Parking (User Class 3)	0.5m wide x 1.8m long with 1.5m access aisle Located in well-lit where passive surveillance is likely, as close as practical to the user's destination

6. SERVICING ASSESSMENT

6.1 Servicing Vehicle

In the absence of servicing requirements for a subdivision within the Tweed Shire region, it is understood a maximum of an 8.8m medium rigid vehicle (MRV) is expected to service the development internally (i.e. removalist truck). The MRV can access the site's road network to successfully enter and exit in a forward gear. Service vehicle maximum grades (AS2890.2) should be considered as part of future DA assessments.

6.2 Refuse Collection

It is understood that refuse collection for the proposed site is to be undertaken via bulk bin collection on-site within the public car park by Council's 12.3m front-lift Refuse Collection Vehicle (RCV). The visitor car park shall be designed to allow entry/exit in forward gear to and from the Walmsleys Road access and be assessed as part of future development applications.

7. SUMMARY AND CONCLUSIONS

The key findings of the TIA for the proposed development located at 1 Walmsleys Road, Bilambil Heights are as follows:

- The proposed development consists of:
  - 92 units over four multi-storey buildings
  - Three residential apartment buildings with a basement parking level
  - One mixed-use residential apartment building with food & Beverage venue / gallery
  - 94 visitor car parking spaces as part of the food & beverage / gallery land uses
  - Access via Walmselys Road and Scenic Drive
- The existing development consists of a single residential dwelling
- The Tweed Road Development Strategy (2017) outlines the following planned infrastructure in the Bilambil locality:
  - Item 1: Cobaki Parkway
  - Item 2: Cobaki Interchange
  - Item 3: McAllisters Road extension to Scenic Drive
  - Item 4: Piggabeen Road / Kenney Drive roundabout Upgrade
- A Tweed Council Resolution (2015) has limited the level daily traffic increase on Kennedy Drive, it is estimated between 500-600vpd capacity remains as part of the Resolution. This resolution limits development to the west of the Cobaki Inlet until such a time that Cobaki Parkway is constructed. The development is anticipated to add 414 trips onto Kennedy Drive, within the allowable daily increase as determined by Council's Resolution. After inclusion of the development generated traffic, there is anticipated to be between 100-200vpd remaining capacity
- A crash history review showed 16 crashes occurring on Scenic Drive within the last five years of available crash data. 56% of the crashes on Scenic Drive were the result of motorists going off-path on a straight or curve, however three have occurred in proximity to the Scenic Drive / Warringa Drive access. Of the three off-path crashes, no underlying crash trends were identified
- The subject site is serviced by Route 608, providing connections to Tweed City and Tweed Heads West and does not trigger the need for additional public transport facilities
- The development is located in a rural area with low walking demand and does not trigger the need for new active transport facilities
- Traffic Surveys for the Scenic Drive / Warringa Drive intersection were undertaken on 5 May 2021 and a 7-day tube count was undertaken on Scenic Drive from 6 May 2021 – 12 May 2021. The 85th percentile speed was found to be 57km/h
- The development is anticipated to generate 48 trips in the AM peak and 29 trips in the PM peak
- SIDRA 9 was used to analyse the development impacts at the Scenic Drive / Warringa Drive intersection. The development generated traffic was found to result in minimal impacts
- The Scenic Drive access assessment is as follows:
  - Recommended to be a secondary access, designed in accordance with Council's DCP (2014) and AS2890 requirements
  - Sight distances exceeds the required 85m as per AS2890 for a 60km/h frontage road
  - The access would require a Basic Left Turn treatment and a minimum road widening of 3.0m
  - Scenic Drive is bound by a steep drop off on the southern side and a raised mound on the northern side
- The Walmselys Road access assessment is as follows:
  - Recommended to be the primary access, designed in accordance with Council's DCP (2014) and AS2890 requirements
  - Sight distances exceeds the required 85m as per AS2890 for a 60km/h frontage road

- The development is required to provide 138 residential and 23 visitor parking spaces as part of the residential component, and 14 visitor parking spaces as part of the food & Beverage / gallery land use with additional parking for staff
- Currently, 94 visitor spaces are provided for the food & beverage / gallery land uses with additional spaces to be included within the residential buildings, subject to future DA assessments
- The development is required to provide 92 residential bicycle parking spaces and 12 visitor bicycle parking spaces as well as 4 staff bicycle parking spaces as 8 visitor parking spaces for the food & Beverage component
- The internal geometric layout shall comply with the requirements of Council's *DCP* (2014) and Australian Standards (AS2890)
- Servicing for the is anticipated to be undertaken by an MRV which shall manoeuvre in/out of the development in a forward gear via Walmsleys Road
- Service vehicle maximum grades should be considered as part of future DA assessments
- Refuse collection is proposed to be collected by bulk bins located within the internal public car park fronting the Food & Beverage and shall be able to enter/exit the development in a forward gear
- Refuse vehicle maximum grades should be considered as part of future DA assessments.

Based on the above assessment, we conclude that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds.

Appendix A: Development Plans

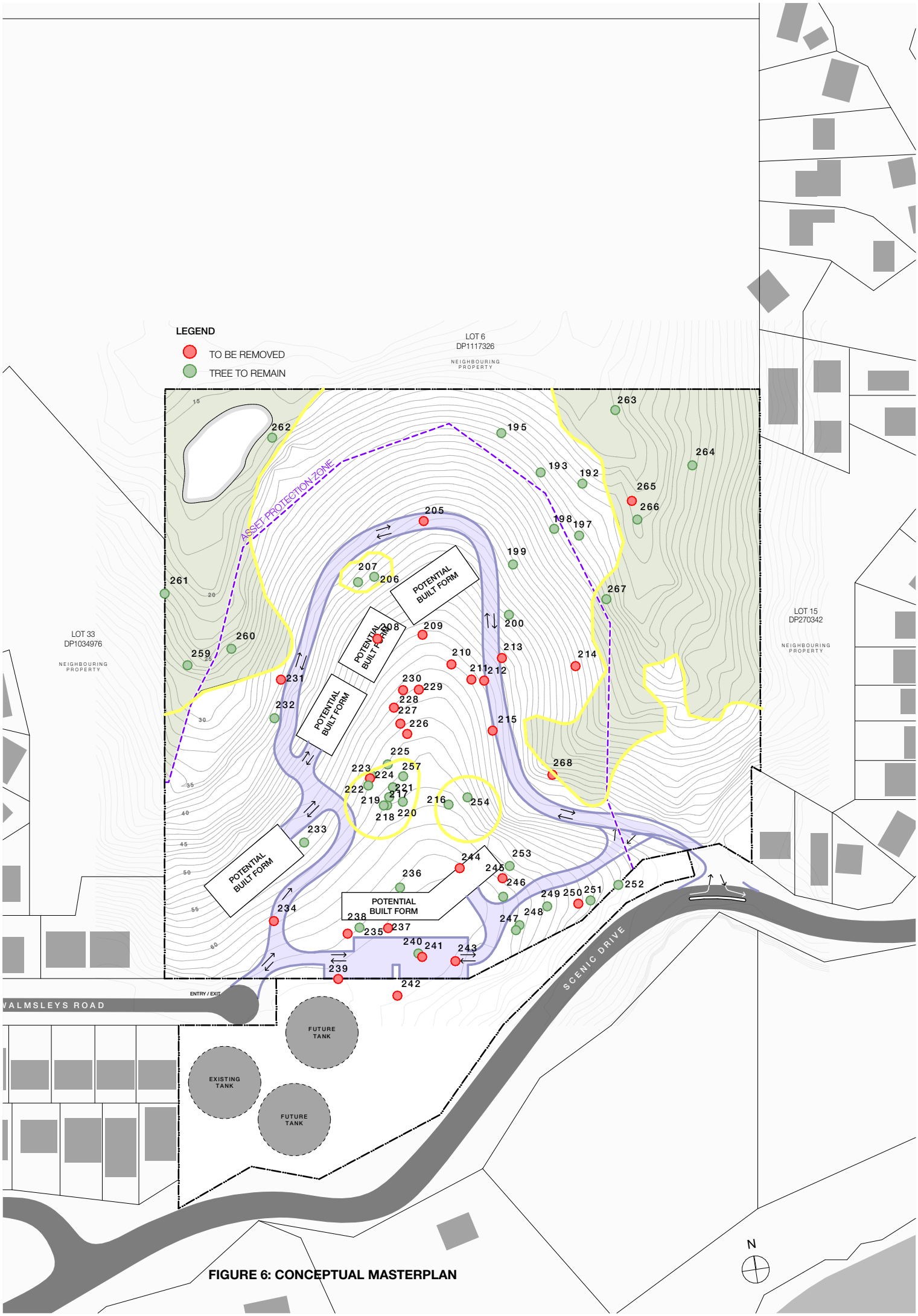


FIGURE 6: CONCEPTUAL MASTERPLAN

Appendix B: Traffic Surveys

Scenic Drive, Bilambil - 260 metres east of Warringa Dr

Co-ordinates -28.19827 153.49924

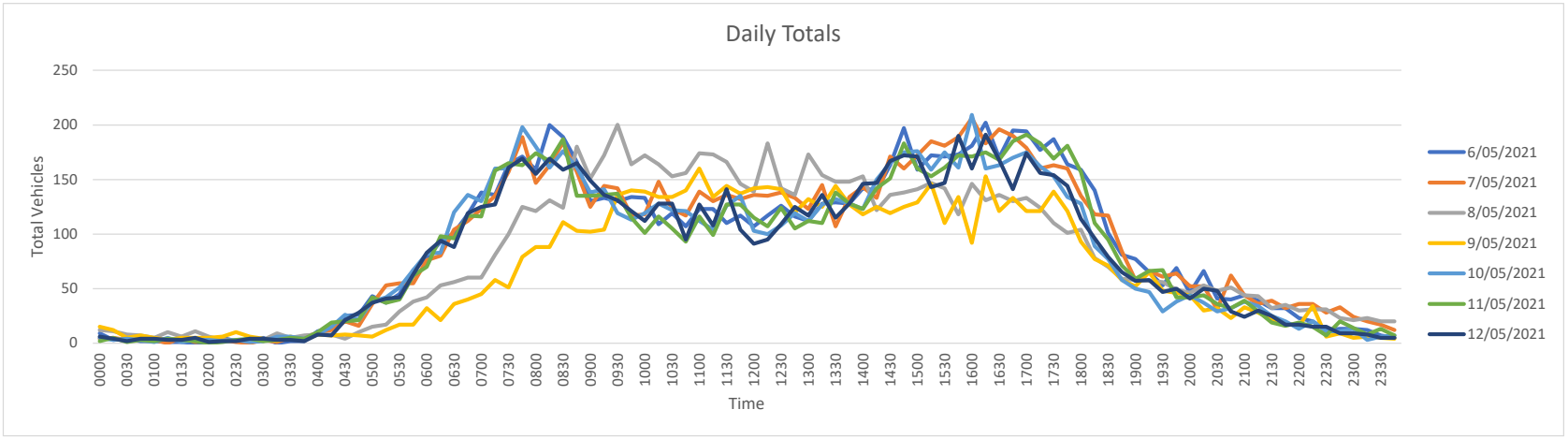
TDC Traffic Data & Control

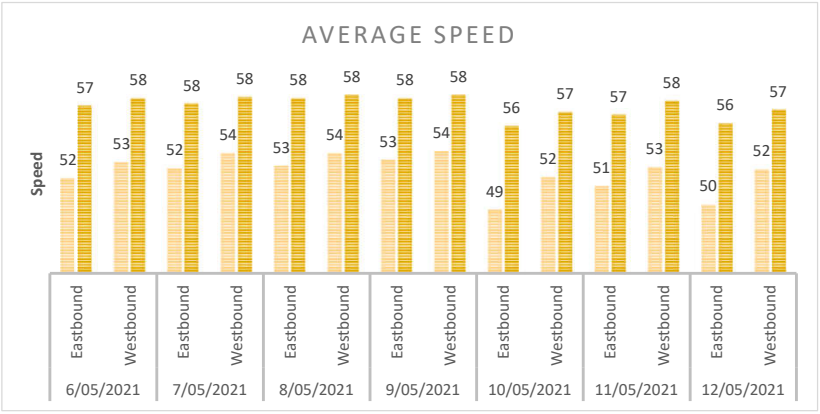
Day

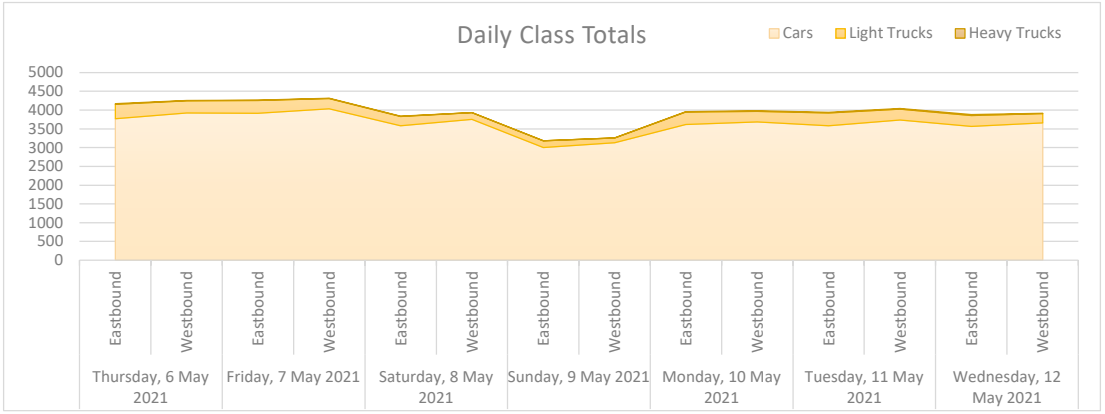
- 6/05/2021
- 7/05/2021
- 8/05/2021
- 9/05/2021
- 10/05/2021
- 11/05/2021
- 12/05/2021

Direction

- Eastbound
- Westbound







Eastbound

Westbound

TDC
Traffic Data & Control

6/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	4	4	0	0	53.4	-
0015	2	1	1	0	56.5	-
0030	3	3	0	0	56.7	-
0045	1	0	1	0	37.4	-
0100	0	0	0	0	-	-
0115	0	0	0	0	-	-
0130	1	1	0	0	45.3	-
0145	0	0	0	0	-	-
0200	0	0	0	0	-	-
0215	4	3	1	0	51.6	-
0230	1	1	0	0	47.1	-
0245	1	1	0	0	50	-
0300	4	3	1	0	60.3	-
0315	0	0	0	0	-	-
0330	2	2	0	0	56.2	-
0345	1	1	0	0	59.6	-
0400	10	7	3	0	56.3	-
0415	11	11	0	0	56	63.2
0430	23	20	3	0	59	67
0445	24	22	2	0	55.8	62.6
0500	38	34	4	0	55.5	61.6
0515	31	25	5	1	54.8	58.8
0530	39	35	4	0	54.6	59.4
0545	56	52	4	0	54.3	58.5
0600	65	58	7	0	54.4	59.9
0615	75	64	11	0	53.8	59.1
0630	81	72	7	2	52.8	58.5
0645	82	76	6	0	53.5	57.4
0700	104	97	7	0	50.6	57.3
0715	96	87	9	0	50.7	56.2
0730	120	110	10	0	52.6	57.6
0745	121	110	11	0	53.3	58.6
0800	108	101	7	0	52.1	57.1
0815	142	129	13	0	51.9	56.6
0830	112	104	7	1	52.4	56.5
0845	110	101	8	1	51.8	56
0900	80	73	7	0	52.3	57.2
0915	75	68	7	0	49.4	54.2
0930	77	70	7	0	49.8	54.1
0945	76	68	8	0	50.1	55.2
1000	66	61	5	0	49.9	56
1015	62	58	4	0	50.8	56.1
1030	72	64	8	0	46.4	52.9
1045	56	49	7	0	36.2	42.8
1100	62	54	8	0	42.6	48.7
1115	63	58	5	0	46.8	52.7
1130	58	53	5	0	48.9	54.4
1145	49	38	10	1	49	56.7
1200	58	50	7	1	49.1	53.8
1215	50	45	5	0	52.2	57.1
1230	67	62	5	0	51.7	57.3
1245	51	43	8	0	51	55.8
1300	59	52	6	1	52.1	55.8
1315	56	52	4	0	50.4	56.3
1330	55	51	3	1	52	56.3
1345	45	38	7	0	51.7	58.1
1400	66	55	10	1	51	57.2
1415	47	42	5	0	53.3	59.7
1430	70	66	4	0	51.2	58.3
1445	105	91	12	2	50.5	55.4
1500	82	79	3	0	51.5	56.1
1515	67	57	10	0	52.2	56.7
1530	77	74	3	0	51.1	55.9
1545	68	64	4	0	52.8	57
1600	73	68	5	0	51.8	56.7
1615	75	61	14	0	50.3	56.5
1630	57	51	6	0	53.7	59
1645	63	58	4	1	53.8	59.5
1700	65	62	3	0	54.6	58.7
1715	52	46	6	0	52	56
1730	61	57	4	0	53.2	57.8
1745	51	50	1	0	51.8	58
1800	47	45	1	1	51.2	54.7
1815	52	44	8	0	48.6	54
1830	42	38	4	0	52.3	60.3
1845	27	25	1	1	54.6	59.4
1900	21	19	2	0	53	61.3
1915	27	27	0	0	53	60.6
1930	18	14	4	0	53.5	59.7
1945	19	16	2	1	51.1	59.8
2000	14	14	0	0	54.6	63.9
2015	14	13	1	0	54.9	58.6
2030	17	14	3	0	58.9	70.3
2045	19	17	2	0	54.1	57.4
2100	13	13	0	0	51.8	55.7
2115	8	8	0	0	54.5	-
2130	11	10	1	0	62.4	73.2
2145	7	6	1	0	53.5	-
2200	12	10	2	0	54.6	62.5
2215	1	1	0	0	62.5	-
2230	3	2	1	0	51.1	-
2245	4	4	0	0	54.2	-
2300	2	2	0	0	58.2	-
2315	5	5	0	0	51.4	-
2330	1	1	0	0	33.2	-
2345	2	2	0	0	69.8	-
07-09	**913**	**839**	**72**	**2**	**52**	**56.9**
09-16	**1819**	**1635**	**177**	**7**	**49.9**	**55.8**
16-18	**497**	**453**	**43**	**1**	**52.6**	**57.8**
00-00	**4174**	**3773**	**385**	**16**	**51.6**	**57.4**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	5	4	1	0	52.8	-
0015	1	1	0	0	59.8	-
0030	1	1	0	0	56.6	-
0045	1	1	0	0	49.6	-
0100	2	2	0	0	61.4	-
0115	1	1	0	0	60.6	-
0130	0	0	0	0	-	-
0145	0	0	0	0	-	-
0200	1	1	0	0	59.2	-
0215	1	1	0	0	51.8	-
0230	1	1	0	0	47.1	-
0245	0	0	0	0	-	-
0300	1	1	0	0	62.4	-
0315	0	0	0	0	-	-
0330	0	0	0	0	-	-
0345	1	1	0	0	40.5	-
0400	1	1	0	0	52.4	-
0415	2	1	1	0	33.9	-
0430	2	2	0	0	57.6	-
0445	2	1	1	0	52.1	-
0500	5	5	0	0	56.7	-
0515	6	4	2	0	43.3	-
0530	6	6	0	0	47.2	-
0545	11	8	3	0	51.3	55.8
0600	13	12	0	1	55.2	60.8
0615	18	18	0	0	55.1	58.3
0630	20	17	3	0	54.1	60.9
0645	36	31	5	0	56.7	62.9
0700	34	29	5	0	53.8	59.8
0715	40	29	11	0	52.2	56.3
0730	44	34	10	0	51.3	56.9
0745	50	44	6	0	53.6	59.1
0800	51	47	4	0	53	58.1
0815	58	52	5	1	51.7	56.5
0830	77	69	8	0	51.5	55.1
0845	56	51	5	0	55.3	60.6
0900	50	42	7	1	52.3	58.3
0915	58	54	4	0	54.5	58.4
0930	53	47	6	0	52.4	56.7
0945	58	49	9	0	52.2	57.3
1000	67	57	10	0	49.4	53.4
1015	47	43	4	0	50.9	54.5
1030	47	40	7	0	47.3	52.2
1045	51	42	9	0	36.4	43.8
1100	61	48	13	0	42.6	49.8
1115	60	55	5	0	50.2	54.9
1130	52	48	4	0	49.7	55.8
1145	68	63	5	0	52.2	56.3
1200	49	47	2	0	51.7	55.5
1215	67	62	4	1	53.7	58
1230	59	56	3	0	53.5	58.1
1245	65	61	4	0	54.7	59
1300	53	46	5	2	53.2	58.3
1315	72	62	10	0	53.2	59.6
1330	74	70	4	0	54.7	60.9
1345	83	80	3	0	54.2	58.9
1400	76	71	5	0	55.2	60.2
1415	93	86	7	0	52.9	56.7
1430	93	87	6	0	53.9	57.9
1445	92	86	6	0	53.6	58.1
1500	77	73	4	0	53.4	57.1
1515	105	100	5	0	55.1	59.9
1530	94	88	6	0	54.8	58.4
1545	105	97	8	0	54.7	59.4
1600	108	98	10	0	53.7	59.2
1615	127	120	6	1	54.4	58.5
1630	113	105	7	1	53.1	58.3
1645	132	124	8	0	54.7	58.9
1700	129	119	10	0	53.3	59
1715	125	117	8	0	52.6	56.2
1730	126	120	6	0	52.5	56.7
1745	113	109	4	0	54.1	57.9
1800	112	109	3	0	51.3	56.5
1815	88	86	2	0	52.8	57
1830	59	56	2	1	52.6	58.9
1845	54	51	3	0	54.3	60.1
1900	56	53	3	0	52.9	57.9
1915	38	37	1	0	53.4	58.7
1930	35	34	1	0	54.5	58.7
1945	50	49	1	0	53.4	58.6
2000	32	30	2	0	52.1	57.7
2015	52	49	3	0	53.4	58.2
2030	24	23	1	0	54.6	60.1
2045	21	20	1	0	54.3	60.6
2100	31	29	2	0	54.9	59.5
2115	31	28	3	0	53.2	58.7
2130	21	20	1	0	57.2	75.3
2145	25	24	1	0	54.3	61.7
2200	11	11	0	0	55	61.8
2215	19	19	0	0	53.2	56.7
2230	9	9	0	0	51.4	-
2245	9	9	0	0	53.3	-
2300	11	11	0	0	55.9	65.6
2315	7	7	0	0	52.9	-
2330	6	6	0	0	58.9	-
2345	3	3	0	0	50.9	-
07-09	**410**	**355**	**54**	**1**	**52.7**	**57.2**
09-16	**1929**	**1760**	**165**	**4**	**52.4**	**57.6**
16-18	**973**	**912**	**59**	**2**	**53.6**	**58**
00-00	**4254**	**3921**	**324**	**9**	**52.9**	**58**

Eastbound

Westbound

TDC
Traffic Data & Control

7/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	1	1	0	0	43.8	-
0015	2	2	0	0	55.3	-
0030	2	2	0	0	56.1	-
0045	1	1	0	0	50.2	-
0100	2	2	0	0	64.6	-
0115	0	0	0	0	-	-
0130	2	2	0	0	54.9	-
0145	0	0	0	0	-	-
0200	0	0	0	0	-	-
0215	3	3	0	0	54.1	-
0230	0	0	0	0	-	-
0245	0	0	0	0	-	-
0300	3	2	0	1	53.3	-
0315	1	1	0	0	50.9	-
0330	2	2	0	0	43.9	-
0345	4	3	1	0	56.4	-
0400	8	6	2	0	58.9	-
0415	12	12	0	0	59.1	69.8
0430	18	16	2	0	59.3	66.1
0445	15	13	2	0	59.2	68.1
0500	31	29	2	0	56	60.1
0515	52	45	7	0	54.4	58.7
0530	52	46	5	1	55.5	61.2
0545	51	44	7	0	54.6	59.4
0600	67	54	12	1	54.7	60.4
0615	59	56	3	0	54.3	59
0630	73	66	7	0	54.2	59
0645	78	71	6	1	53.9	58.5
0700	91	81	10	0	50	54.5
0715	91	81	10	0	53.9	58
0730	106	95	11	0	51.6	58.3
0745	133	126	7	0	52.7	57
0800	105	95	10	0	50.4	55.9
0815	100	94	6	0	51.8	57.4
0830	118	110	8	0	50.6	56.7
0845	92	86	6	0	52.1	56.6
0900	89	86	3	0	52.4	57.1
0915	95	85	8	2	51.6	56
0930	80	76	4	0	50.1	56
0945	66	58	8	0	49.6	57.8
1000	55	50	5	0	51.2	56.6
1015	85	79	6	0	51.2	56.9
1030	55	50	4	1	51.8	56.8
1045	60	50	10	0	51.6	58.1
1100	75	67	8	0	51.6	55.8
1115	59	49	9	1	50.8	56.7
1130	60	56	4	0	51.6	59.5
1145	63	56	6	1	53	58.6
1200	59	52	7	0	52	57.6
1215	64	60	4	0	52.6	59.1
1230	63	60	3	0	54	59.5
1245	60	55	5	0	51.3	55.6
1300	66	62	4	0	50.5	55.6
1315	70	65	5	0	51.3	55.9
1330	43	41	2	0	52.5	57.1
1345	75	69	6	0	52.6	56.4
1400	71	64	7	0	52.4	56.6
1415	52	48	4	0	51.7	57.1
1430	74	68	6	0	54.3	59.8
1445	81	78	3	0	52.4	57.1
1500	69	62	6	1	52.6	57.3
1515	85	77	7	1	51.9	56.7
1530	62	57	5	0	52	57.4
1545	73	69	4	0	51.4	56.1
1600	79	71	8	0	53	57.2
1615	70	64	6	0	51.9	55.5
1630	75	70	5	0	51.9	56.3
1645	64	59	5	0	54	58.3
1700	68	64	4	0	52.1	56.2
1715	63	61	2	0	52.4	56.7
1730	64	62	2	0	53	58.5
1745	65	61	3	1	51.6	56.5
1800	52	48	3	1	53.3	59.8
1815	42	36	5	1	49.9	54.1
1830	54	46	8	0	52.8	57.4
1845	31	30	1	0	53.2	61.2
1900	23	21	2	0	52.5	58.9
1915	25	24	1	0	53.4	61.8
1930	16	15	1	0	54.4	59.9
1945	31	30	1	0	49.6	59
2000	25	23	2	0	55.7	60.4
2015	17	17	0	0	55.5	63.6
2030	5	5	0	0	56.8	-
2045	19	19	0	0	50.6	55.4
2100	12	12	0	0	52.7	62.3
2115	15	15	0	0	52.1	58.5
2130	8	8	0	0	57.7	-
2145	7	7	0	0	54.9	-
2200	13	13	0	0	52.3	58.3
2215	9	9	0	0	53.7	-
2230	8	8	0	0	49.5	-
2245	5	4	1	0	48.3	-
2300	2	2	0	0	47.9	-
2315	7	5	2	0	52.6	-
2330	5	4	1	0	49.9	-
2345	4	4	0	0	58.4	-
07-09	**836**	**768**	**68**	**0**	**51.6**	**57.1**
09-16	**1909**	**1749**	**153**	**7**	**51.9**	**57.1**
16-18	**548**	**512**	**35**	**1**	**52.5**	**56.9**
00-00	**4267**	**3913**	**340**	**14**	**52.4**	**57.6**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	55.6	-
0015	3	3	0	0	56.8	-
0030	1	1	0	0	47.5	-
0045	4	4	0	0	55.2	-
0100	1	1	0	0	56.4	-
0115	0	0	0	0	-	-
0130	3	3	0	0	51.5	-
0145	1	1	0	0	49	-
0200	2	2	0	0	58.1	-
0215	0	0	0	0	-	-
0230	1	1	0	0	48.3	-
0245	0	0	0	0	-	-
0300	0	0	0	0	-	-
0315	0	0	0	0	-	-
0330	3	2	1	0	50.2	-
0345	2	1	1	0	47.7	-
0400	1	1	0	0	51.4	-
0415	0	0	0	0	-	-
0430	2	2	0	0	57.4	-
0445	1	1	0	0	45	-
0500	5	5	0	0	51.1	-
0515	1	1	0	0	57.2	-
0530	3	3	0	0	56.6	-
0545	4	3	1	0	51.6	-
0600	9	7	2	0	58.6	-
0615	21	21	0	0	56.6	60.2
0630	31	29	2	0	55.8	61.7
0645	34	28	6	0	53.8	58.2
0700	32	30	2	0	54.5	58
0715	44	39	5	0	54	59.9
0730	51	42	8	1	53	58
0745	56	53	3	0	53.7	58.3
0800	42	38	4	0	53.6	58.5
0815	63	57	6	0	52.7	56.7
0830	66	62	4	0	53.4	57.8
0845	65	60	5	0	53.2	58.7
0900	36	33	3	0	54.7	60
0915	49	42	7	0	53.9	57.7
0930	62	60	2	0	53.1	57.4
0945	51	47	4	0	53.9	57.9
1000	63	53	9	1	53.6	58.4
1015	63	56	7	0	52.1	58.6
1030	68	62	6	0	54.1	58
1045	57	53	4	0	54.9	59.8
1100	64	58	5	1	52.5	57.8
1115	71	67	4	0	52.8	57.3
1130	76	73	3	0	53.5	57.7
1145	69	65	4	0	55.1	59
1200	77	73	4	0	53.6	57.8
1215	71	66	5	0	54.9	58.8
1230	75	74	1	0	53.4	57.1
1245	73	70	3	0	54.2	58.3
1300	57	55	2	0	55	58.5
1315	75	66	9	0	54.5	58.6
1330	64	59	5	0	55.1	59.4
1345	59	55	4	0	54	58.5
1400	72	70	2	0	55.4	60
1415	81	74	6	1	53.4	58.8
1430	97	91	6	0	53.2	57.8
1445	79	72	7	0	51.5	58
1500	103	95	8	0	52.9	56.8
1515	100	93	7	0	53.3	57.8
1530	119	113	6	0	54	57.8
1545	116	109	7	0	53.6	57.4
1600	127	114	13	0	52.4	56.5
1615	113	107	6	0	54.5	58.6
1630	121	117	4	0	53.5	57.7
1645	126	119	7	0	54.1	57.4
1700	111	104	7	0	52.3	56.7
1715	97	94	3	0	52.2	57.5
1730	99	90	9	0	52.7	57.4
1745	95	92	2	1	53.2	56.7
1800	83	81	2	0	52.6	57.9
1815	76	74	2	0	52.4	57.1
1830	63	57	6	0	54	58.9
1845	53	50	3	0	54.2	60.2
1900	35	32	3	0	52.2	57.5
1915	41	39	2	0	54.4	59.8
1930	45	44	1	0	54.2	62.7
1945	33	33	0	0	52.4	59
2000	27	26	1	0	54.2	59
2015	35	34	1	0	51.6	57.8
2030	26	23	3	0	54.6	59
2045	43	40	3	0	53.3	58
2100	32	31	1	0	54	59.1
2115	21	21	0	0	51.9	57.5
2130	31	31	0	0	56.1	61.9
2145	25	23	2	0	54.4	58.8
2200	23	22	1	0	55.1	64.2
2215	27	24	3	0	53.2	60.4
2230	20	20	0	0	54	58.3
2245	28	28	0	0	54	60.6
2300	22	21	1	0	52.4	57.7
2315	13	13	0	0	53.6	60.5
2330	12	11	1	0	54.6	62.4
2345	8	8	0	0	52.6	-
07-09	**419**	**381**	**37**	**1**	**53.4**	**58**
09-16	**2047**	**1904**	**140**	**3**	**53.7**	**58.1**
16-18	**889**	**837**	**51**	**1**	**53.1**	**57.3**
00-00	**4313**	**4031**	**277**	**5**	**53.6**	**58.1**

Eastbound

Westbound

TDC
Traffic Data & Control

8/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	53.2	-
0015	4	4	0	0	53.2	-
0030	3	3	0	0	54	-
0045	6	6	0	0	53.4	-
0100	0	0	0	0	-	-
0115	2	2	0	0	67.3	-
0130	4	4	0	0	55.9	-
0145	5	4	1	0	51.3	-
0200	3	3	0	0	58.8	-
0215	1	1	0	0	57.6	-
0230	1	0	1	0	58.8	-
0245	1	1	0	0	87.9	-
0300	2	2	0	0	46.3	-
0315	2	2	0	0	46.8	-
0330	5	5	0	0	54.2	-
0345	5	4	1	0	51.6	-
0400	5	5	0	0	53.1	-
0415	6	5	1	0	57.5	-
0430	4	3	1	0	54.4	-
0445	7	7	0	0	60.3	-
0500	13	12	1	0	55.1	61.7
0515	16	15	1	0	53	58.5
0530	26	23	3	0	54.1	59.2
0545	31	28	3	0	53.4	59.8
0600	31	28	3	0	54.1	59.3
0615	44	40	3	1	52.3	59.1
0630	40	35	4	1	54.1	59.4
0645	40	35	5	0	54.2	59.5
0700	33	30	3	0	54.4	59.5
0715	59	54	4	1	54.6	59.2
0730	66	60	6	0	54.3	59.8
0745	77	74	3	0	53.8	59.4
0800	73	66	7	0	53.4	57.6
0815	87	76	11	0	52.9	57.9
0830	82	77	4	1	52.1	57
0845	115	103	10	2	51.1	56.4
0900	85	80	5	0	52.6	58.9
0915	104	99	4	1	52	57.3
0930	131	119	12	0	50.2	55.3
0945	108	100	8	0	50.6	55.4
1000	94	89	4	1	51.5	56.1
1015	91	86	5	0	51.4	56.7
1030	93	88	5	0	50.7	55.1
1045	79	77	2	0	49.9	55.6
1100	100	90	10	0	51.1	55.3
1115	90	84	6	0	52.2	58.6
1130	82	78	4	0	53.4	59
1145	79	74	4	1	52.2	57.8
1200	61	57	4	0	52.6	58.1
1215	68	66	2	0	52.1	58.4
1230	59	51	8	0	51.5	56
1245	66	63	3	0	52.6	57.9
1300	78	74	4	0	51.3	57.3
1315	63	60	3	0	53.4	57.7
1330	53	49	4	0	52.9	58.8
1345	62	58	4	0	53.4	58.3
1400	67	61	6	0	52.9	58.2
1415	57	51	6	0	52.5	57.4
1430	49	45	4	0	53.8	61.2
1445	49	44	4	1	52.3	58
1500	54	50	4	0	53.9	59.7
1515	72	64	8	0	53.5	58.9
1530	64	59	5	0	52.4	58.3
1545	42	40	2	0	52.4	58
1600	60	59	1	0	53.7	59.3
1615	53	50	3	0	52.3	57.2
1630	54	52	2	0	54.6	57.9
1645	52	51	1	0	54.1	59.2
1700	57	54	3	0	53.6	58.3
1715	56	53	3	0	52.3	56.2
1730	50	48	2	0	52.4	55.3
1745	43	42	1	0	51.5	57.5
1800	35	35	0	0	52	57.2
1815	32	31	1	0	54	59.6
1830	26	25	1	0	51.8	53.8
1845	19	17	2	0	50.8	59.2
1900	27	27	0	0	53.8	59.7
1915	23	23	0	0	51.4	60.4
1930	19	19	0	0	54	59.2
1945	15	14	1	0	55.9	69.6
2000	20	19	1	0	55.6	59.4
2015	22	22	0	0	53.6	57.6
2030	13	13	0	0	52.9	60.1
2045	25	25	0	0	53	58.9
2100	12	10	2	0	53.4	60.9
2115	18	17	1	0	52.8	61
2130	11	10	1	0	51.8	58.6
2145	17	17	0	0	52.9	59.6
2200	12	12	0	0	56.3	67.9
2215	13	13	0	0	53.8	60.1
2230	16	15	1	0	55.1	59.6
2245	10	10	0	0	51.4	-
2300	6	5	0	1	59	-
2315	8	7	1	0	54	-
2330	8	7	1	0	53.1	-
2345	7	7	0	0	46.4	-
07-09	**592**	**540**	**48**	**4**	**53**	**58**
09-16	**2100**	**1956**	**140**	**4**	**52**	**57.4**
16-18	**425**	**409**	**16**	**0**	**53.1**	**57.6**
00-00	**3841**	**3585**	**245**	**11**	**52.6**	**58**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	9	8	1	0	53.4	-
0015	7	7	0	0	49.1	-
0030	5	5	0	0	59.5	-
0045	1	1	0	0	50	-
0100	5	5	0	0	60.8	-
0115	8	8	0	0	55	-
0130	2	2	0	0	51.1	-
0145	6	6	0	0	53.4	-
0200	3	3	0	0	57.7	-
0215	2	2	0	0	60.7	-
0230	1	1	0	0	43.3	-
0245	2	2	0	0	63.4	-
0300	1	1	0	0	53.2	-
0315	7	6	1	0	51.1	-
0330	0	0	0	0	-	-
0345	2	2	0	0	51.7	-
0400	3	2	1	0	54.5	-
0415	2	2	0	0	52.1	-
0430	0	0	0	0	-	-
0445	3	3	0	0	56.8	-
0500	2	0	2	0	50.4	-
0515	1	1	0	0	53.2	-
0530	3	3	0	0	51.7	-
0545	7	5	2	0	44.1	-
0600	11	11	0	0	54	60.5
0615	9	8	1	0	55.1	-
0630	16	15	1	0	56.2	63.3
0645	20	19	1	0	58.6	66.6
0700	27	25	2	0	51	56.4
0715	22	21	1	0	51.5	56.6
0730	34	32	2	0	53.1	56.9
0745	48	45	2	1	51.9	56.7
0800	48	46	2	0	54.3	57.6
0815	44	41	3	0	53.8	57.5
0830	42	38	3	1	53.2	58.4
0845	65	62	3	0	52.5	57.3
0900	66	63	3	0	53.1	57.6
0915	68	64	4	0	52.8	58.3
0930	69	67	2	0	51.7	55.3
0945	56	52	4	0	51.6	55
1000	78	77	1	0	52	56.8
1015	73	68	5	0	53	57.6
1030	60	58	2	0	54.8	58.6
1045	77	76	1	0	54.4	58.7
1100	74	69	5	0	53.4	58
1115	83	81	2	0	54.8	59.8
1130	84	75	9	0	55.1	58.5
1145	67	63	4	0	54.2	58.1
1200	78	77	1	0	53.6	59.3
1215	115	112	3	0	54.9	59.4
1230	83	80	3	0	53.7	59
1245	70	68	2	0	54.6	58.9
1300	95	86	9	0	53.8	57.7
1315	91	88	3	0	55.2	59.6
1330	95	92	3	0	54	59
1345	86	81	5	0	53.1	58.5
1400	86	79	7	0	52.4	57.6
1415	65	64	1	0	53.6	56.7
1430	87	84	3	0	54.1	59.1
1445	89	86	3	0	54.5	58.1
1500	87	80	7	0	52.3	57.6
1515	75	72	3	0	54.5	59
1530	78	72	6	0	54.1	57.7
1545	76	74	2	0	54.1	57.5
1600	86	80	5	1	53.7	58.5
1615	78	74	4	0	54.2	58.9
1630	82	80	2	0	54.6	58.5
1645	78	74	4	0	53.9	59.1
1700	76	74	2	0	53.3	57.7
1715	68	61	7	0	52.5	57.1
1730	60	59	1	0	52.4	57.7
1745	58	54	4	0	51.4	56.8
1800	69	69	0	0	52.3	57.7
1815	46	44	2	0	51.6	57.8
1830	44	43	1	0	55	58.4
1845	40	40	0	0	54.6	60.6
1900	31	30	1	0	53.4	59.3
1915	34	34	0	0	52.9	58.1
1930	37	35	2	0	53.3	59.1
1945	34	31	3	0	53.9	57.2
2000	26	26	0	0	52.7	61.3
2015	31	30	1	0	53.9	58.2
2030	35	34	1	0	52.3	58.4
2045	26	25	1	0	53.9	58.9
2100	32	31	1	0	55.1	59.3
2115	25	25	0	0	51.2	56
2130	21	21	0	0	54.8	57.6
2145	18	18	0	0	55.2	59.5
2200	18	17	1	0	54.7	61.7
2215	18	18	0	0	53	57.2
2230	15	15	0	0	55.5	62.8
2245	13	13	0	0	55.3	61
2300	15	15	0	0	55.4	61.6
2315	15	15	0	0	52.4	58.6
2330	12	12	0	0	52.8	59.9
2345	13	13	0	0	54.2	61.3
07-09	**330**	**310**	**18**	**2**	**52.8**	**57.2**
09-16	**2211**	**2108**	**103**	**0**	**53.7**	**58.3**
16-18	**586**	**556**	**29**	**1**	**53.4**	**58**
00-00	**3933**	**3756**	**174**	**3**	**53.6**	**58.3**

Eastbound

Westbound

TDC
Traffic Data & Control

9/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	9	8	1	0	53.6	-
0015	2	2	0	0	59.5	-
0030	2	2	0	0	50.4	-
0045	2	2	0	0	48.2	-
0100	2	2	0	0	55	-
0115	0	0	0	0	-	-
0130	2	2	0	0	55.1	-
0145	2	2	0	0	49.4	-
0200	0	0	0	0	-	-
0215	3	3	0	0	53.8	-
0230	5	5	0	0	58.3	-
0245	6	6	0	0	48	-
0300	1	1	0	0	45.6	-
0315	2	2	0	0	45.8	-
0330	2	1	1	0	49.9	-
0345	2	2	0	0	59.4	-
0400	7	7	0	0	57.5	-
0415	5	4	1	0	52.5	-
0430	6	6	0	0	52.3	-
0445	6	5	1	0	63.3	-
0500	5	5	0	0	57.2	-
0515	11	10	1	0	54.2	64.1
0530	14	13	1	0	53.9	59.6
0545	15	14	1	0	56.5	63.4
0600	26	21	3	2	52.9	59.3
0615	16	15	1	0	54.3	60.5
0630	26	26	0	0	53.8	58.7
0645	32	30	2	0	53.4	60.3
0700	34	31	3	0	53.2	58.6
0715	43	42	1	0	54.1	59.9
0730	33	31	2	0	53.6	59.3
0745	57	47	9	1	52.9	57.7
0800	60	58	2	0	54	58.1
0815	50	44	6	0	54.5	59.6
0830	71	65	6	0	52.9	57.5
0845	73	68	5	0	53.2	58.1
0900	68	61	7	0	51.7	56.9
0915	68	62	6	0	52.7	57.8
0930	79	76	3	0	53	58
0945	91	89	2	0	51.8	56.5
1000	83	79	4	0	53.2	57.3
1015	68	64	4	0	54.7	59.7
1030	71	66	5	0	51.8	57.3
1045	84	79	5	0	52.7	57.8
1100	80	76	4	0	52.1	55.6
1115	74	70	4	0	53	57.9
1130	72	67	5	0	53.7	58.2
1145	67	64	3	0	51.5	56.8
1200	60	59	1	0	53.6	59.5
1215	67	66	1	0	51.6	57.2
1230	71	66	5	0	53.4	58.7
1245	50	47	3	0	53.3	57.8
1300	66	62	4	0	54.2	58.3
1315	59	55	4	0	52.7	57.6
1330	64	57	7	0	53.4	59
1345	49	48	1	0	54.4	59
1400	41	40	1	0	55	58.4
1415	52	51	1	0	54	61.2
1430	46	46	0	0	52.5	57.6
1445	44	42	2	0	51.6	56.1
1500	44	41	3	0	52	55.5
1515	59	55	4	0	53.9	58.3
1530	46	43	3	0	53.2	58
1545	54	51	3	0	53.4	59
1600	39	36	3	0	53.8	60.1
1615	67	65	2	0	53.4	57
1630	65	63	2	0	50.7	55.8
1645	70	66	4	0	52.8	57.3
1700	57	52	5	0	53.6	59.1
1715	47	45	2	0	51	54.7
1730	54	51	3	0	52.1	57.5
1745	58	58	0	0	51.1	56.1
1800	37	35	2	0	53.5	58.4
1815	36	33	3	0	53.8	60.1
1830	31	31	0	0	54.4	59.2
1845	17	16	1	0	55	62.4
1900	19	19	0	0	51.5	58.1
1915	20	20	0	0	53.6	58
1930	21	18	3	0	55	59.7
1945	17	16	1	0	52.8	60
2000	17	17	0	0	54.6	59.2
2015	9	8	1	0	50.5	-
2030	11	9	2	0	54.6	59.6
2045	8	8	0	0	55.9	-
2100	13	12	1	0	53.7	64.9
2115	13	13	0	0	52	57.1
2130	7	5	2	0	51.9	-
2145	2	2	0	0	63.3	-
2200	6	6	0	0	52.9	-
2215	18	18	0	0	50	55
2230	3	3	0	0	50.2	-
2245	3	3	0	0	47.3	-
2300	1	1	0	0	44.8	-
2315	2	2	0	0	68	-
2330	2	2	0	0	55	-
2345	3	3	0	0	61.6	-
07-09	**421**	**386**	**34**	**1**	**53.5**	**58.3**
09-16	**1777**	**1682**	**95**	**0**	**53**	**57.8**
16-18	**457**	**436**	**21**	**0**	**52.3**	**57.2**
00-00	**3182**	**3000**	**179**	**3**	**53.1**	**58**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	6	6	0	0	54.7	-
0015	10	9	1	0	53.5	-
0030	3	3	0	0	49.8	-
0045	5	5	0	0	51.6	-
0100	3	3	0	0	54.2	-
0115	3	3	0	0	48.6	-
0130	3	3	0	0	49.5	-
0145	3	3	0	0	48.9	-
0200	5	5	0	0	50.4	-
0215	3	3	0	0	53.8	-
0230	5	5	0	0	50.9	-
0245	0	0	0	0	-	-
0300	3	3	0	0	53.8	-
0315	0	0	0	0	-	-
0330	4	3	1	0	56.4	-
0345	1	1	0	0	55.6	-
0400	1	1	0	0	47.8	-
0415	2	2	0	0	50.5	-
0430	2	2	0	0	52.1	-
0445	1	1	0	0	43	-
0500	1	1	0	0	51.2	-
0515	1	1	0	0	63.8	-
0530	3	2	1	0	50.2	-
0545	2	2	0	0	55.4	-
0600	6	6	0	0	53.4	-
0615	5	5	0	0	54.7	-
0630	10	9	1	0	53	-
0645	8	8	0	0	54.9	-
0700	11	11	0	0	51.9	63.1
0715	15	14	1	0	55	59.2
0730	18	18	0	0	52.7	60.5
0745	22	20	2	0	52.6	56.8
0800	28	25	3	0	55.4	61
0815	38	34	4	0	54.1	58.8
0830	40	37	3	0	54.9	61.8
0845	30	29	1	0	55.7	61.2
0900	34	32	2	0	55.2	58.3
0915	36	36	0	0	56.4	63.1
0930	57	56	1	0	54.2	58.6
0945	49	47	2	0	52.2	56.1
1000	56	52	4	0	54	58.9
1015	66	65	1	0	55.2	58.9
1030	63	59	3	1	55.1	59.8
1045	56	54	2	0	54.7	58.3
1100	80	75	5	0	53.6	57.8
1115	60	58	2	0	54.3	59.8
1130	72	71	1	0	53.5	58.2
1145	70	68	1	1	54.9	58.9
1200	82	79	3	0	53.1	56.9
1215	76	74	2	0	54.7	58.4
1230	70	69	1	0	53.5	58.6
1245	70	65	5	0	54.5	58.7
1300	66	61	5	0	53.6	58.3
1315	66	63	3	0	53.4	58
1330	80	75	5	0	53.5	56.9
1345	78	77	1	0	52.7	57.5
1400	77	74	2	1	53.3	56.9
1415	73	70	3	0	54	58.3
1430	73	73	0	0	54.2	59.9
1445	81	79	2	0	53.5	57
1500	85	83	2	0	53.9	57.7
1515	87	82	5	0	54.4	58.6
1530	64	61	3	0	55.4	59.6
1545	80	76	4	0	53	57.4
1600	53	50	3	0	54.6	58.6
1615	86	81	5	0	53.8	58.3
1630	56	53	3	0	54.8	59.5
1645	63	61	2	0	53.9	59.2
1700	64	59	5	0	53.4	58.4
1715	74	68	6	0	53.3	57.4
1730	85	83	2	0	51.1	55.5
1745	63	61	2	0	52.8	56.5
1800	56	53	3	0	52.5	57.5
1815	41	41	0	0	54	59.3
1830	40	40	0	0	53.8	60.2
1845	41	38	3	0	52.6	56.7
1900	33	33	0	0	51.8	59.5
1915	45	43	2	0	53.6	58.1
1930	27	27	0	0	53.5	58.6
1945	29	27	2	0	54.2	59.7
2000	27	26	1	0	54.4	61.5
2015	21	21	0	0	53.2	60.1
2030	21	21	0	0	52.2	57.2
2045	15	15	0	0	55	61.7
2100	20	19	1	0	52.5	56.4
2115	15	15	0	0	55.8	62.9
2130	15	15	0	0	56.4	62.9
2145	16	16	0	0	53.3	57.8
2200	10	9	1	0	52.7	-
2215	16	14	2	0	49.6	55.3
2230	3	3	0	0	55.5	-
2245	6	6	0	0	55.4	-
2300	4	4	0	0	55.8	-
2315	4	4	0	0	51.1	-
2330	3	3	0	0	56.1	-
2345	1	1	0	0	59	-
07-09	**202**	**188**	**14**	**0**	**54.3**	**60.2**
09-16	**1907**	**1834**	**70**	**3**	**54**	**58.1**
16-18	**544**	**516**	**28**	**0**	**53.3**	**57.8**
00-00	**3261**	**3127**	**131**	**3**	**53.8**	**58.3**

Eastbound

Westbound

TDC
Traffic Data & Control

10/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	2	2	0	0	59.3	-
0015	2	2	0	0	47.1	-
0030	2	2	0	0	56.7	-
0045	1	1	0	0	49.8	-
0100	1	1	0	0	52.6	-
0115	3	3	0	0	62	-
0130	1	1	0	0	54.3	-
0145	2	2	0	0	58	-
0200	1	1	0	0	46.9	-
0215	1	0	1	0	60.5	-
0230	3	3	0	0	51.3	-
0245	1	1	0	0	57.6	-
0300	1	1	0	0	49.9	-
0315	3	3	0	0	50.5	-
0330	4	3	0	1	52.9	-
0345	4	3	1	0	53.8	-
0400	8	6	1	1	53.3	-
0415	14	13	1	0	56.9	71
0430	25	24	1	0	57.1	63.6
0445	19	17	2	0	57.6	68.9
0500	35	33	2	0	54.6	58.4
0515	36	35	1	0	55.7	59.8
0530	47	43	4	0	55.5	61.6
0545	56	48	7	1	54.8	58.8
0600	68	59	7	2	54.6	59.5
0615	59	52	7	0	55.4	59.8
0630	87	78	9	0	54.7	59.1
0645	96	89	7	0	51.5	56.7
0700	89	76	12	1	51.3	56
0715	113	107	6	0	49.2	53.8
0730	112	105	7	0	43.7	48.8
0745	138	123	15	0	42.8	47.9
0800	133	122	11	0	43.2	47.9
0815	102	95	7	0	47.8	51.9
0830	107	99	8	0	47	51.8
0845	98	88	10	0	46.2	52.4
0900	83	73	10	0	47.4	52.5
0915	80	73	7	0	46.3	52.1
0930	67	58	9	0	33.7	47.1
0945	66	63	3	0	46.2	51.6
1000	63	60	3	0	47.7	52.2
1015	70	64	6	0	46.2	50.8
1030	64	57	7	0	41.7	46.8
1045	67	64	2	1	44.2	47.7
1100	67	61	6	0	43.2	48.5
1115	47	43	4	0	43.5	48
1130	62	53	9	0	45.1	49.6
1145	67	63	4	0	44.9	51.3
1200	49	39	9	1	48.1	53.1
1215	37	36	1	0	48.6	53.2
1230	50	45	4	1	47.6	56.4
1245	55	52	3	0	48.8	52.1
1300	49	46	3	0	49	53
1315	57	52	5	0	46.8	51.5
1330	69	64	5	0	47.6	53.1
1345	53	47	6	0	46.2	52.9
1400	58	49	9	0	48.3	52.6
1415	71	63	7	1	51.3	57.8
1430	65	56	9	0	51.5	55.4
1445	86	79	7	0	51.7	56.2
1500	97	89	8	0	51	56.3
1515	70	63	7	0	51.1	55.9
1530	74	68	6	0	51	57.4
1545	54	52	2	0	52.8	57.4
1600	58	53	4	1	51.3	54.6
1615	46	41	4	1	52.4	58
1630	57	50	7	0	53.9	58.8
1645	55	53	2	0	54.6	58.5
1700	68	62	6	0	51	55.3
1715	54	48	5	1	53.1	59
1730	51	49	2	0	52.3	56.6
1745	43	39	4	0	52.7	58.1
1800	34	32	1	1	52.2	57.5
1815	19	16	3	0	50.2	57.2
1830	30	30	0	0	53.2	59.7
1845	16	14	2	0	57.4	65.5
1900	17	15	1	1	55.4	61.1
1915	14	13	1	0	51.4	56.2
1930	12	11	1	0	52.6	61.6
1945	10	9	1	0	55.1	-
2000	13	13	0	0	57.3	69.2
2015	13	12	0	1	52.3	59.3
2030	10	10	0	0	52.5	-
2045	13	13	0	0	55.9	60.4
2100	11	11	0	0	53.7	58.3
2115	7	7	0	0	53.8	-
2130	9	9	0	0	52.8	-
2145	7	7	0	0	60.8	-
2200	4	3	1	0	51.2	-
2215	6	6	0	0	49	-
2230	2	2	0	0	54.6	-
2245	4	4	0	0	49.4	-
2300	3	3	0	0	49	-
2315	2	2	0	0	58.7	-
2330	1	1	0	0	46.1	-
2345	2	2	0	0	53.7	-
07-09	**892**	**815**	**76**	**1**	**46.1**	**52**
09-16	**1797**	**1632**	**161**	**4**	**47.3**	**53.5**
16-18	**432**	**395**	**34**	**3**	**52.6**	**57.6**
00-00	**3962**	**3613**	**333**	**16**	**49.1**	**55.8**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	49.6	-
0015	1	1	0	0	49.8	-
0030	2	2	0	0	52.7	-
0045	2	2	0	0	46.8	-
0100	0	0	0	0	-	-
0115	2	2	0	0	55.4	-
0130	0	0	0	0	-	-
0145	1	1	0	0	45.6	-
0200	2	2	0	0	48.4	-
0215	1	1	0	0	63.8	-
0230	0	0	0	0	-	-
0245	0	0	0	0	-	-
0300	1	1	0	0	50.8	-
0315	3	3	0	0	50.4	-
0330	2	1	1	0	55.2	-
0345	0	0	0	0	-	-
0400	0	0	0	0	-	-
0415	1	1	0	0	52.7	-
0430	1	1	0	0	63.1	-
0445	2	1	1	0	49.5	-
0500	3	3	0	0	53.6	-
0515	6	6	0	0	53	-
0530	4	3	1	0	58.2	-
0545	11	10	1	0	56	71.7
0600	14	14	0	0	55.4	63
0615	24	20	4	0	54.1	61.5
0630	33	29	4	0	52.5	57.7
0645	40	36	3	1	55	60.4
0700	41	36	5	0	50.8	56.1
0715	47	36	11	0	49.3	54.6
0730	48	40	8	0	47.5	53.9
0745	60	51	9	0	47	51.8
0800	47	45	2	0	47.4	50.6
0815	59	55	4	0	49.1	54.7
0830	69	63	6	0	48.9	54.1
0845	63	56	7	0	46.4	54.1
0900	55	53	2	0	48.9	52.8
0915	61	58	3	0	49	52.5
0930	52	49	3	0	43	46.8
0945	47	40	6	1	47.2	51.5
1000	56	48	8	0	48.7	53.8
1015	58	50	8	0	45.7	52.2
1030	58	56	2	0	47.8	51.7
1045	54	48	6	0	50	54.2
1100	45	41	4	0	48.3	52.6
1115	57	49	7	1	45	51.3
1130	64	59	5	0	49.3	54
1145	68	65	3	0	51.3	56.5
1200	54	53	1	0	51.6	55.6
1215	63	61	2	0	51.6	56.4
1230	58	55	3	0	50	54.7
1245	64	60	4	0	52.2	55.9
1300	63	57	6	0	51	56
1315	70	61	9	0	50.5	55.4
1330	63	58	4	1	51.5	57.4
1345	75	70	5	0	52.2	57.1
1400	65	60	5	0	53.4	57.6
1415	79	72	7	0	52.8	56.7
1430	100	96	4	0	52.4	56.5
1445	89	83	6	0	53	58.1
1500	79	72	7	0	52.7	58.3
1515	89	80	9	0	55.2	59.4
1530	101	98	3	0	53.9	58.1
1545	107	97	8	2	53.1	57.7
1600	151	141	10	0	53.8	57.8
1615	114	108	4	2	52.4	57.5
1630	106	98	7	1	55	58.3
1645	115	109	6	0	53.7	57.1
1700	107	101	5	1	53.7	57.5
1715	108	102	6	0	52.5	57
1730	102	97	3	2	51.5	57.4
1745	91	85	6	0	53.3	57.5
1800	94	88	5	1	52.5	57.2
1815	70	67	3	0	54.8	61.1
1830	47	45	2	0	52.9	56.8
1845	42	42	0	0	52.7	58.1
1900	33	29	3	1	54.7	62.2
1915	33	31	2	0	51.9	58.2
1930	17	16	1	0	55.7	60.1
1945	28	28	0	0	52.5	56.9
2000	31	29	2	0	50.3	55.4
2015	24	22	2	0	54.8	60.2
2030	19	18	1	0	54.9	61.4
2045	19	18	1	0	54.8	64.3
2100	27	27	0	0	55.5	63.8
2115	27	27	0	0	54.8	63.4
2130	16	16	0	0	53.9	63.8
2145	13	13	0	0	54.5	62.8
2200	9	9	0	0	57.2	-
2215	14	14	0	0	54.6	60.8
2230	9	7	1	1	54.4	-
2245	7	7	0	0	54.1	-
2300	10	10	0	0	54.7	-
2315	1	1	0	0	53.6	-
2330	5	5	0	0	55.7	-
2345	5	5	0	0	52.1	-
07-09	**434**	**382**	**52**	**0**	**48.2**	**53.8**
09-16	**1894**	**1749**	**140**	**5**	**50.9**	**56.2**
16-18	**894**	**841**	**47**	**6**	**53.3**	**57.6**
00-00	**3981**	**3689**	**277**	**15**	**51.7**	**56.9**

Eastbound

Westbound

TDC
Traffic Data & Control

11/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	0	0	0	0	-	-
0015	2	1	1	0	57.8	-
0030	0	0	0	0	-	-
0045	2	2	0	0	72.8	-
0100	0	0	0	0	-	-
0115	1	1	0	0	50.1	-
0130	1	1	0	0	60.5	-
0145	1	1	0	0	51.6	-
0200	0	0	0	0	-	-
0215	1	1	0	0	56.4	-
0230	2	2	0	0	51.2	-
0245	4	4	0	0	53.7	-
0300	2	2	0	0	52.2	-
0315	2	2	0	0	50.7	-
0330	5	4	1	0	59.9	-
0345	3	3	0	0	45.5	-
0400	9	6	3	0	52.4	-
0415	17	14	3	0	55.3	63
0430	20	17	3	0	52.3	57.7
0445	20	17	3	0	52.3	57.4
0500	38	33	4	1	50.2	54.6
0515	32	30	2	0	53.6	59.9
0530	35	34	1	0	51.6	55.8
0545	54	49	5	0	51.1	55.9
0600	62	57	4	1	52.3	55.5
0615	78	66	10	2	53.2	58
0630	71	63	8	0	50.8	55
0645	76	64	11	1	51.5	57.3
0700	85	77	8	0	52.8	58.2
0715	111	101	9	1	52.1	56.9
0730	125	108	16	1	49.2	55.3
0745	112	102	10	0	52.1	57.8
0800	131	128	3	0	50.6	55.5
0815	105	99	6	0	50.8	55.1
0830	107	101	5	1	51	56.2
0845	83	71	12	0	50.5	55.1
0900	90	82	8	0	51	55.3
0915	75	63	12	0	50.5	55.8
0930	76	71	5	0	51.7	57.1
0945	64	58	6	0	49.9	55.4
1000	53	49	4	0	47.7	54
1015	65	62	3	0	49	54.6
1030	52	48	3	1	47.6	53.4
1045	37	34	3	0	49.3	55.1
1100	63	57	6	0	50.4	55.6
1115	40	37	3	0	49.9	54.7
1130	69	61	7	1	47	51.4
1145	53	50	3	0	46.6	52.9
1200	59	52	7	0	46.1	52.4
1215	54	47	7	0	52.6	57.7
1230	55	52	3	0	45.2	51.2
1245	38	35	3	0	40.7	45.6
1300	48	46	2	0	42.4	50.1
1315	60	52	8	0	46.8	54
1330	50	47	3	0	51.1	56.2
1345	62	56	6	0	48.4	55.4
1400	57	51	5	1	50.2	56
1415	58	53	5	0	52.9	59.5
1430	61	54	6	1	51.2	56.6
1445	89	80	8	1	50.4	56.7
1500	79	72	7	0	52.5	57.1
1515	50	41	8	1	52.8	56.5
1530	67	64	3	0	52.6	56.8
1545	75	68	7	0	52	59.1
1600	60	55	5	0	52.1	55.7
1615	56	50	6	0	53.9	58.7
1630	60	53	7	0	51.3	56.8
1645	61	59	2	0	54.2	59.4
1700	64	59	4	1	53	58.3
1715	60	53	6	1	53	59
1730	54	53	1	0	54.4	59.5
1745	60	56	4	0	52.5	57.6
1800	50	49	1	0	52.4	57.8
1815	46	44	2	0	52.2	59.9
1830	41	36	5	0	54.3	60.1
1845	25	24	1	0	53.9	59
1900	21	20	1	0	54.2	59.9
1915	31	23	8	0	54.4	61.2
1930	28	25	3	0	56.9	63.1
1945	12	12	0	0	55.5	60.3
2000	14	14	0	0	54.3	59.6
2015	19	17	2	0	53.9	63.5
2030	8	7	1	0	58.1	-
2045	9	8	1	0	51.4	-
2100	6	5	1	0	54	-
2115	8	8	0	0	52.6	-
2130	4	4	0	0	55.9	-
2145	10	10	0	0	48.6	-
2200	5	5	0	0	48	-
2215	4	4	0	0	42.8	-
2230	3	3	0	0	47.3	-
2245	8	7	1	0	49.7	-
2300	8	7	1	0	50	-
2315	3	3	0	0	55.9	-
2330	4	3	1	0	47.1	-
2345	2	1	1	0	56.6	-
07-09	**859**	**787**	**69**	**3**	**51.1**	**56.5**
09-16	**1699**	**1542**	**151**	**6**	**49.5**	**55.6**
16-18	**475**	**438**	**35**	**2**	**53**	**58**
00-00	**3940**	**3580**	**344**	**16**	**51**	**56.7**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	2	2	0	0	64.6	-
0015	3	3	0	0	54.5	-
0030	1	1	0	0	45.7	-
0045	1	1	0	0	65.8	-
0100	2	2	0	0	64.7	-
0115	3	3	0	0	49	-
0130	2	2	0	0	54	-
0145	1	1	0	0	49.8	-
0200	0	0	0	0	-	-
0215	0	0	0	0	-	-
0230	1	1	0	0	52	-
0245	0	0	0	0	-	-
0300	0	0	0	0	-	-
0315	1	1	0	0	53.4	-
0330	0	0	0	0	-	-
0345	1	1	0	0	58.5	-
0400	1	1	0	0	43.5	-
0415	2	1	1	0	49.9	-
0430	0	0	0	0	-	-
0445	1	1	0	0	44.4	-
0500	4	4	0	0	53.1	-
0515	5	5	0	0	51	-
0530	5	5	0	0	52.9	-
0545	8	8	0	0	53.5	-
0600	8	8	0	0	53.1	-
0615	20	18	2	0	54.2	58.7
0630	25	20	5	0	51.7	57.7
0645	41	36	5	0	52.5	58.8
0700	31	26	5	0	53.9	58.8
0715	47	38	7	2	50	58.4
0730	40	32	7	1	51.6	56.5
0745	51	49	1	1	54.6	59.3
0800	43	39	4	0	53.7	58.2
0815	62	58	4	0	52.1	56.2
0830	80	74	6	0	52.1	57.1
0845	52	44	8	0	53.3	57.6
0900	45	41	4	0	53.1	57.8
0915	61	50	11	0	52.8	58.3
0930	61	54	6	1	50.6	55
0945	51	49	2	0	52.5	56.8
1000	48	43	5	0	51.8	56.8
1015	51	47	4	0	53	57.3
1030	53	48	5	0	51.6	54.9
1045	56	48	7	1	49.8	55
1100	53	50	3	0	52.5	57.2
1115	59	56	3	0	53	58.9
1130	58	55	3	0	51.1	55.3
1145	74	67	7	0	50.6	54.9
1200	56	52	4	0	45.2	56.1
1215	53	49	4	0	55.4	59.2
1230	69	64	4	1	49.3	55.7
1245	67	61	6	0	40.5	45.5
1300	64	58	6	0	42.6	49.2
1315	50	47	3	0	51.3	55
1330	88	79	9	0	51.6	57.2
1345	66	56	10	0	52.2	56.2
1400	66	62	4	0	55.1	59.5
1415	84	78	6	0	52	56.8
1430	90	87	3	0	55.2	60.7
1445	94	90	4	0	53.7	58.5
1500	81	74	6	1	53	58.3
1515	103	94	8	1	53.1	57.4
1530	94	87	7	0	54.5	58.5
1545	97	91	6	0	53.4	57.6
1600	111	102	9	0	53.1	57.5
1615	119	112	7	0	53.8	58.9
1630	108	101	7	0	53.5	58
1645	124	118	6	0	54.5	58.2
1700	127	119	8	0	54.1	58.5
1715	123	116	7	0	54.1	58
1730	115	108	7	0	53.4	57
1745	121	115	5	1	52.7	57.6
1800	107	96	10	1	52.2	56.9
1815	64	63	1	0	53.7	56.9
1830	54	50	4	0	52.9	58.5
1845	46	41	5	0	54.4	58.7
1900	38	37	1	0	53.7	58.7
1915	35	34	1	0	55.3	60.9
1930	39	39	0	0	54.8	60.7
1945	30	28	2	0	54	60.9
2000	28	27	1	0	55.3	59.8
2015	25	25	0	0	52.8	59.6
2030	28	23	4	1	52.7	58.1
2045	23	22	1	0	53.7	57.3
2100	33	33	0	0	54.1	59.4
2115	21	20	1	0	52.6	55.6
2130	15	14	1	0	50.3	60.2
2145	6	6	0	0	51.2	-
2200	14	14	0	0	52.5	61.2
2215	11	10	1	0	50.6	54.8
2230	4	4	0	0	49.3	-
2245	12	12	0	0	53.5	58.9
2300	6	6	0	0	53.8	-
2315	5	5	0	0	48.3	-
2330	9	9	0	0	53.4	-
2345	5	5	0	0	53.4	-
07-09	**406**	**360**	**42**	**4**	**52.6**	**57.8**
09-16	**1892**	**1737**	**150**	**5**	**51.6**	**57.2**
16-18	**948**	**891**	**56**	**1**	**53.7**	**58**
00-00	**4042**	**3736**	**294**	**12**	**52.5**	**57.8**

Eastbound

Westbound

TDC
Traffic Data & Control

12/05/2021

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	52.4	-
0015	3	3	0	0	56.4	-
0030	1	1	0	0	49.8	-
0045	1	1	0	0	48	-
0100	2	1	1	0	37	-
0115	0	0	0	0	-	-
0130	0	0	0	0	-	-
0145	2	2	0	0	48.8	-
0200	1	1	0	0	55.8	-
0215	1	1	0	0	51.1	-
0230	2	2	0	0	45	-
0245	4	4	0	0	49.8	-
0300	3	3	0	0	45.2	-
0315	2	2	0	0	56.8	-
0330	1	1	0	0	64.8	-
0345	2	1	1	0	54.7	-
0400	5	3	2	0	51.8	-
0415	7	7	0	0	59.3	-
0430	20	18	2	0	56.4	59.1
0445	27	27	0	0	53.9	58.7
0500	34	31	3	0	53.8	58.2
0515	40	38	2	0	54.7	59.2
0530	39	35	4	0	54.1	58.1
0545	51	47	4	0	53.1	58
0600	67	62	5	0	52.9	57.4
0615	76	68	7	1	53.7	57.1
0630	64	55	7	2	52.8	56.9
0645	79	75	3	1	52.1	57.8
0700	88	79	8	1	52.8	57.4
0715	93	87	5	1	50.8	55.4
0730	111	101	10	0	51.5	56.1
0745	127	121	6	0	48.9	53.5
0800	112	101	9	2	49.6	55.3
0815	120	112	7	1	51.9	55.8
0830	102	95	7	0	49.9	54.5
0845	108	100	8	0	47.6	52.4
0900	96	85	11	0	48.3	53.3
0915	82	78	4	0	48.3	52.9
0930	79	71	7	1	40.8	47.5
0945	75	70	5	0	35.2	42.7
1000	62	55	5	2	28.6	37
1015	63	59	3	1	27.7	43.5
1030	64	59	5	0	46.8	51.3
1045	53	52	1	0	49.8	55.9
1100	67	62	5	0	49.3	54.6
1115	62	58	4	0	48.6	54.5
1130	68	61	7	0	49.4	56.4
1145	44	38	6	0	52.1	57.1
1200	42	36	4	2	51.9	58.6
1215	35	34	1	0	53	61.8
1230	42	36	5	1	53.3	58.5
1245	54	47	6	1	53.2	57.6
1300	67	63	4	0	52.2	56.5
1315	68	61	7	0	51.2	56.1
1330	56	50	5	1	51.4	55.8
1345	57	54	3	0	49.7	55.9
1400	67	59	8	0	51.4	55.4
1415	54	50	3	1	49.6	54.5
1430	59	56	3	0	50.3	55.4
1445	78	68	10	0	48	53.9
1500	82	73	9	0	50	55.1
1515	63	51	12	0	50.6	56.2
1530	58	51	7	0	50.9	56.3
1545	68	65	3	0	52.1	56.6
1600	46	44	2	0	51.4	57.2
1615	74	61	13	0	52.2	58.1
1630	58	56	2	0	52.2	56.6
1645	48	45	3	0	51.6	57.1
1700	59	58	0	1	49.8	55.8
1715	53	49	4	0	52.3	57.6
1730	58	58	0	0	51.9	56
1745	50	44	5	1	49.2	55.5
1800	37	35	1	1	44.4	49.7
1815	32	31	1	0	44.4	52.3
1830	21	20	1	0	47.2	52.7
1845	21	19	2	0	46.6	56.1
1900	16	16	0	0	50.2	59.5
1915	26	24	2	0	52.2	56.7
1930	15	15	0	0	51.3	57.2
1945	17	16	1	0	52.4	57
2000	6	5	1	0	55.1	-
2015	12	12	0	0	54.5	58.8
2030	16	16	0	0	52.5	58.2
2045	5	5	0	0	51.7	-
2100	8	8	0	0	50.4	-
2115	7	7	0	0	50.8	-
2130	8	8	0	0	49.5	-
2145	4	4	0	0	56.9	-
2200	4	4	0	0	47.9	-
2215	1	1	0	0	58.5	-
2230	3	3	0	0	59.6	-
2245	2	2	0	0	52.1	-
2300	1	1	0	0	38.3	-
2315	3	3	0	0	56.9	-
2330	1	1	0	0	33.5	-
2345	2	2	0	0	57.5	-
07-09	**861**	**796**	**60**	**5**	**50.3**	**55.1**
09-16	**1765**	**1602**	**153**	**10**	**47.6**	**55.3**
16-18	**446**	**415**	**29**	**2**	**51.4**	**56.9**
00-00	**3877**	**3563**	**292**	**22**	**49.5**	**56**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile
0000	3	3	0	0	53.9	-
0015	1	1	0	0	54.4	-
0030	1	1	0	0	49.7	-
0045	3	3	0	0	54.7	-
0100	2	2	0	0	39.7	-
0115	3	3	0	0	53.2	-
0130	3	3	0	0	50.4	-
0145	3	3	0	0	46.7	-
0200	0	0	0	0	-	-
0215	1	1	0	0	57.9	-
0230	0	0	0	0	-	-
0245	0	0	0	0	-	-
0300	1	1	0	0	54.1	-
0315	1	1	0	0	52.8	-
0330	2	1	1	0	60.7	-
0345	0	0	0	0	-	-
0400	3	3	0	0	52.7	-
0415	0	0	0	0	-	-
0430	1	1	0	0	59.6	-
0445	1	1	0	0	43.3	-
0500	3	3	0	0	52.8	-
0515	1	1	0	0	48.4	-
0530	3	3	0	0	54.5	-
0545	12	8	4	0	50.6	54
0600	16	15	1	0	54.7	60.5
0615	18	17	1	0	53.4	57.7
0630	24	20	4	0	53.3	58.3
0645	40	33	7	0	51.6	58.4
0700	37	29	6	2	53.1	58.2
0715	34	29	5	0	53.2	58.3
0730	50	45	5	0	54.2	60.5
0745	42	41	1	0	53.1	57.7
0800	43	42	1	0	54.2	57.6
0815	49	45	4	0	53.1	57.8
0830	57	52	5	0	53.1	58.6
0845	57	53	3	1	52.7	57
0900	53	49	4	0	50.4	55.6
0915	54	51	3	0	52.6	56.7
0930	52	50	2	0	45.6	54.4
0945	46	39	7	0	43	53.6
1000	50	47	3	0	49.1	54.7
1015	65	61	4	0	45.1	50.5
1030	64	59	5	0	51	54.9
1045	42	40	2	0	50.5	53.6
1100	60	54	6	0	52	56.8
1115	46	43	3	0	51	56.5
1130	73	70	3	0	54.8	59.7
1145	60	58	2	0	53.2	57.4
1200	49	46	3	0	54.2	58.7
1215	60	56	4	0	54.6	57.9
1230	67	60	6	1	53.1	57.2
1245	71	62	8	1	55	59.1
1300	50	46	4	0	52.6	58.7
1315	68	68	0	0	53.2	57.4
1330	59	53	6	0	52.9	56.7
1345	71	64	7	0	53.1	58.7
1400	79	73	6	0	51.1	56
1415	93	85	7	1	51.9	56.1
1430	108	104	4	0	52.6	56.4
1445	94	82	12	0	51.5	56.7
1500	89	79	10	0	52.3	56.9
1515	80	75	5	0	52.7	57.4
1530	89	88	1	0	49.6	53.2
1545	122	118	3	1	53.2	56.8
1600	114	102	12	0	53.8	57.4
1615	117	113	4	0	53.8	58.1
1630	110	103	7	0	53.7	57.5
1645	93	87	6	0	52.8	56.5
1700	115	110	4	1	53.6	57.2
1715	103	100	3	0	52.6	56.6
1730	96	93	3	0	52.1	56.7
1745	94	86	6	2	52.2	56.3
1800	77	73	4	0	50.5	55
1815	64	60	4	0	51.2	54.5
1830	58	56	2	0	53.4	57.6
1845	44	41	3	0	52.3	57.8
1900	41	38	3	0	52.3	55.5
1915	32	32	0	0	53.7	58.4
1930	32	31	1	0	52.8	58.4
1945	33	33	0	0	52.2	56.3
2000	35	35	0	0	52.4	59.8
2015	38	37	1	0	52.2	57.3
2030	32	31	1	0	52.3	57.4
2045	24	21	3	0	55.1	60.4
2100	16	15	1	0	53.2	58.7
2115	23	23	0	0	53.5	58.1
2130	17	17	0	0	53	57.4
2145	13	12	1	0	52.1	57.4
2200	13	13	0	0	52.3	55.8
2215	14	14	0	0	55.8	61.9
2230	12	12	0	0	53.5	62.7
2245	7	7	0	0	54.4	-
2300	8	7	1	0	54.9	-
2315	5	5	0	0	57.2	-
2330	4	4	0	0	52.7	-
2345	3	3	0	0	47.1	-
07-09	**369**	**336**	**30**	**3**	**53.3**	**58.1**
09-16	**1914**	**1780**	**130**	**4**	**51.7**	**56.7**
16-18	**842**	**794**	**45**	**3**	**53.1**	**57.1**
00-00	**3916**	**3658**	**248**	**10**	**52.3**	**57.1**

Site ID: 1

Location: Scenic Dr & Warringa Dr, Bilambil Heights

Date: 5-May-2021

Period 1 Time: 7:00 AM to 10:00 AM

Weather: Fine

Period 1 Peak Hour: 7:45 AM to 8:45 AM

TDC Traffic Data & Control

TOTALS AND PEAKS

Period 1 Total	118	3	1	21	2	0	0	0	0	0	553	35	1	64	3	0	0	0	0	0	19	2	0	1040	28	2	0	0	0	0	1892	145	656	1091
Period 1 Peak Hr	41	2	1	9	1	0	0	0	0	0	206	9	1	16	1	0	0	0	0	0	7	2	0	413	10	0	0	0	0	0	719	54	233	432

Time Starting	Warringa Dr SB Left	Warringa Dr SB Left	Warringa Dr SB Left	Warringa Dr SB Right	Warringa Dr SB Right	Warringa Dr SB Right	Warringa Dr SB U-turn	Warringa Dr SB U-turn	Warringa Dr SB U-turn	Warringa Dr SB Cross 1	Scenic Dr WB Through	Scenic Dr WB Through	Scenic Dr WB Through	Scenic Dr WB Right	Scenic Dr WB Right	Scenic Dr WB Right	Scenic Dr WB U-turn	Scenic Dr WB U-turn	Scenic Dr WB U-turn	Scenic Dr WB Cross 1	Scenic Dr EB Left	Scenic Dr EB Left	Scenic Dr EB Left	Scenic Dr EB Through	Scenic Dr EB Through	Scenic Dr EB Through	Scenic Dr EB U-turn	Scenic Dr EB U-turn	Scenic Dr EB U-turn	Scenic Dr EB Cross 1	GRAND TOTAL	Warringa Dr SB TOTAL	Scenic Dr WB TOTAL	Scenic Dr EB TOTAL
	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Pedestrians	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Pedestrians	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Lights (1-2)	Trucks	Bicycles on Road	Pedestrians	TOTALS	All Classes	All Classes	All Classes
07:00	12	0	0	0	0	0	0	0	0	0	32	3	0	2	0	0	0	0	0	0	0	0	0	87	3	0	0	0	0	0	**139**	12	37	90
07:15	12	0	0	6	0	0	0	0	0	0	41	5	0	5	0	0	0	0	0	0	0	0	0	80	1	0	0	0	0	0	**150**	18	51	81
07:30	14	0	0	1	0	0	0	0	0	0	47	7	0	2	0	0	0	0	0	0	2	0	0	102	4	0	0	0	0	0	**179**	15	56	108
07:45	7	0	0	2	0	0	0	0	0	0	45	1	0	3	0	0	0	0	0	0	1	0	0	116	5	0	0	0	0	0	**180**	9	49	122
08:00	4	1	0	4	0	0	0	0	0	0	48	3	0	3	0	0	0	0	0	0	1	1	0	107	1	0	0	0	0	0	**173**	9	54	110
08:15	15	0	0	1	0	0	0	0	0	0	55	2	1	6	0	0	0	0	0	0	4	1	0	73	1	0	0	0	0	0	**159**	16	64	79
08:30	15	1	1	2	1	0	0	0	0	0	58	3	0	4	1	0	0	0	0	0	1	0	0	117	3	0	0	0	0	0	**207**	20	66	121
08:45	11	0	0	1	0	0	0	0	0	0	55	3	0	5	0	0	0	0	0	0	4	0	0	74	3	2	0	0	0	0	**158**	12	63	83
09:00	5	0	0	2	0	0	0	0	0	0	40	2	0	6	1	0	0	0	0	0	1	0	0	89	2	0	0	0	0	0	**148**	7	49	92
09:15	11	1	0	0	0	0	0	0	0	0	54	1	0	10	0	0	0	0	0	0	2	0	0	76	2	0	0	0	0	0	**157**	12	65	80
09:30	7	0	0	0	0	0	0	0	0	0	44	1	0	6	1	0	0	0	0	0	0	0	0	64	2	0	0	0	0	0	**125**	7	52	66
09:45	5	0	0	2	1	0	0	0	0	0	34	4	0	12	0	0	0	0	0	0	3	0	0	55	1	0	0	0	0	0	**117**	8	50	59

Site ID: 1

Location: Scenic Dr & Warringa Dr, Bilambil Heights

Date: 5-May-2021

Period 2 Time: 3:00 PM to 6:00 PM

Weather: Fine

Period 2 Peak Hour: 3:45 PM to 4:45 PM

TDC Traffic Data & Control

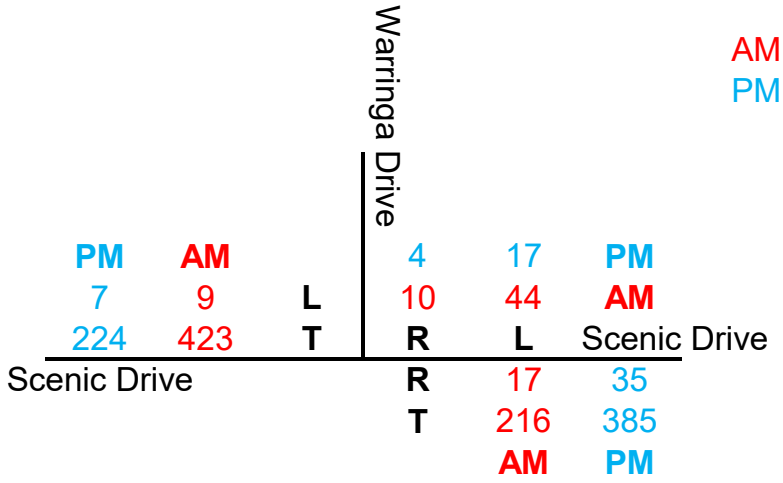
TOTALS AND PEAKS

Period 2 Total	59	3	0	8	1	0	0	0	0	0	1014	12	0	103	1	0	0	0	0	0	18	2	0	604	20	0	0	0	0	0	1845	71	1130	644
Period 2 Peak Hr	16	1	0	3	1	0	0	0	0	0	380	5	0	34	1	0	0	0	0	0	6	1	0	213	11	0	0	0	0	0	672	21	420	231

Time Starting	Warringa Dr SB Left Lights (1-2)	Warringa Dr SB Left Trucks	Warringa Dr SB Left Bicycles on Road	Warringa Dr SB Right Lights (1-2)	Warringa Dr SB Right Trucks	Warringa Dr SB Right Bicycles on Road	Warringa Dr SB U-turn Lights (1-2)	Warringa Dr SB U-turn Trucks	Warringa Dr SB U-turn Bicycles on Road	Warringa Dr SB Cross 1 Pedestrians	Scenic Dr WB Through Lights (1-2)	Scenic Dr WB Through Trucks	Scenic Dr WB Through Bicycles on Road	Scenic Dr WB Right Lights (1-2)	Scenic Dr WB Right Trucks	Scenic Dr WB Right Bicycles on Road	Scenic Dr WB U-turn Lights (1-2)	Scenic Dr WB U-turn Trucks	Scenic Dr WB U-turn Bicycles on Road	Scenic Dr WB Cross 1 Pedestrians	Scenic Dr EB Left Lights (1-2)	Scenic Dr EB Left Trucks	Scenic Dr EB Left Bicycles on Road	Scenic Dr EB Through Lights (1-2)	Scenic Dr EB Through Trucks	Scenic Dr EB Through Bicycles on Road	Scenic Dr EB U-turn Lights (1-2)	Scenic Dr EB U-turn Trucks	Scenic Dr EB U-turn Bicycles on Road	Scenic Dr EB Cross 1 Pedestrians	GRAND TOTAL TOTALS	Warringa Dr SB TOTAL All Classes	Scenic Dr WB TOTAL All Classes	Scenic Dr EB TOTAL All Classes
15:00	7	1	0	2	0	0	0	0	0	0	74	4	0	7	0	0	0	0	0	0	3	0	0	55	2	0	0	0	0	0	**155**	10	85	60
15:15	5	1	0	0	0	0	0	0	0	0	71	1	0	8	0	0	0	0	0	0	2	1	0	49	2	0	0	0	0	0	**140**	6	80	54
15:30	7	0	0	1	0	0	0	0	0	0	83	0	0	10	0	0	0	0	0	0	1	0	0	50	1	0	0	0	0	0	**153**	8	93	52
15:45	7	0	0	0	1	0	0	0	0	0	80	1	0	3	1	0	0	0	0	0	1	0	0	44	2	0	0	0	0	0	**140**	8	85	47
16:00	1	0	0	2	0	0	0	0	0	0	99	3	0	8	0	0	0	0	0	0	0	0	0	68	2	0	0	0	0	0	**183**	3	110	70
16:15	3	0	0	1	0	0	0	0	0	0	105	1	0	12	0	0	0	0	0	0	2	1	0	54	3	0	0	0	0	0	**182**	4	118	60
16:30	5	1	0	0	0	0	0	0	0	0	96	0	0	11	0	0	0	0	0	0	3	0	0	47	4	0	0	0	0	0	**167**	6	107	54
16:45	4	0	0	0	0	0	0	0	0	0	79	0	0	12	0	0	0	0	0	0	2	0	0	43	0	0	0	0	0	0	**140**	4	91	45
17:00	9	0	0	1	0	0	0	0	0	0	85	2	0	8	0	0	0	0	0	0	2	0	0	49	3	0	0	0	0	0	**159**	10	95	54
17:15	5	0	0	0	0	0	0	0	0	0	70	0	0	9	0	0	0	0	0	0	0	0	0	50	1	0	0	0	0	0	**135**	5	79	51
17:30	3	0	0	1	0	0	0	0	0	0	92	0	0	11	0	0	0	0	0	0	1	0	0	46	0	0	0	0	0	0	**154**	4	103	47
17:45	3	0	0	0	0	0	0	0	0	0	80	0	0	4	0	0	0	0	0	0	1	0	0	49	0	0	0	0	0	0	**137**	3	84	50

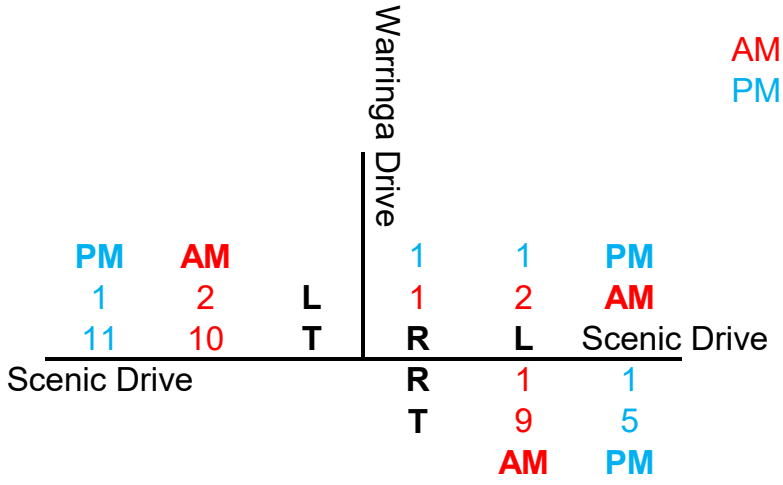
Appendix C: Traffic Diagrams

AM 7:45-8:45
PM 3:45-4:45

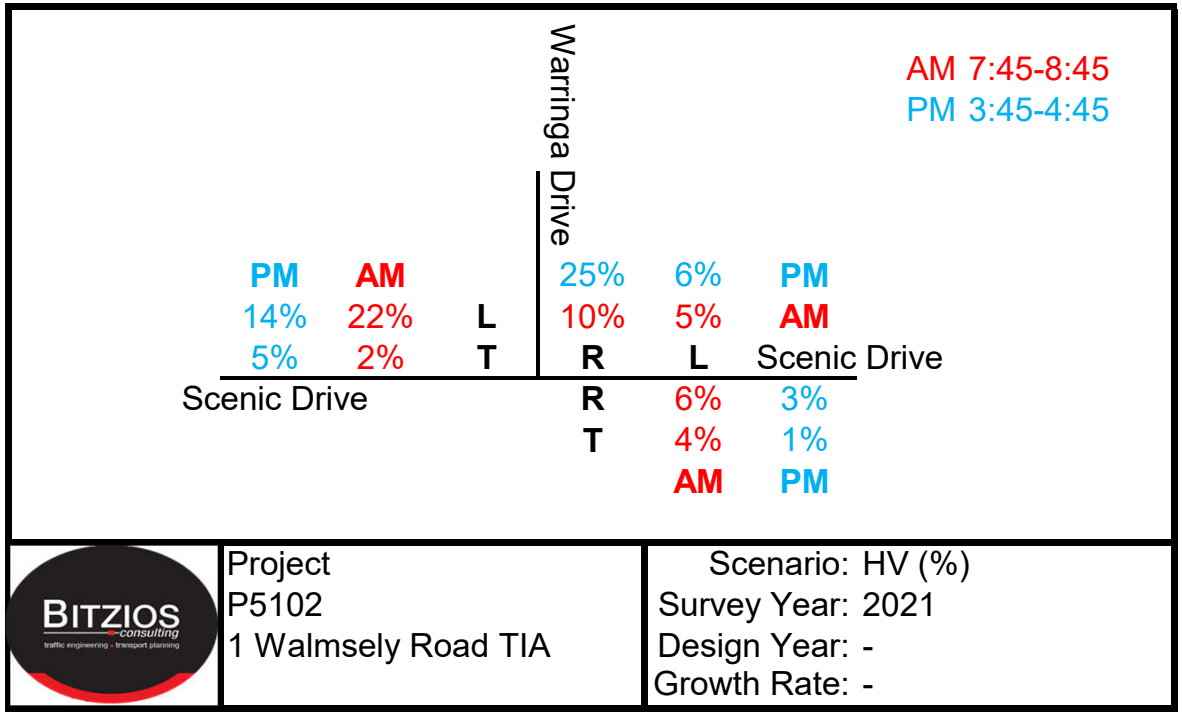


BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Survey Survey Year: 2021 Design Year: - Growth Rate: -

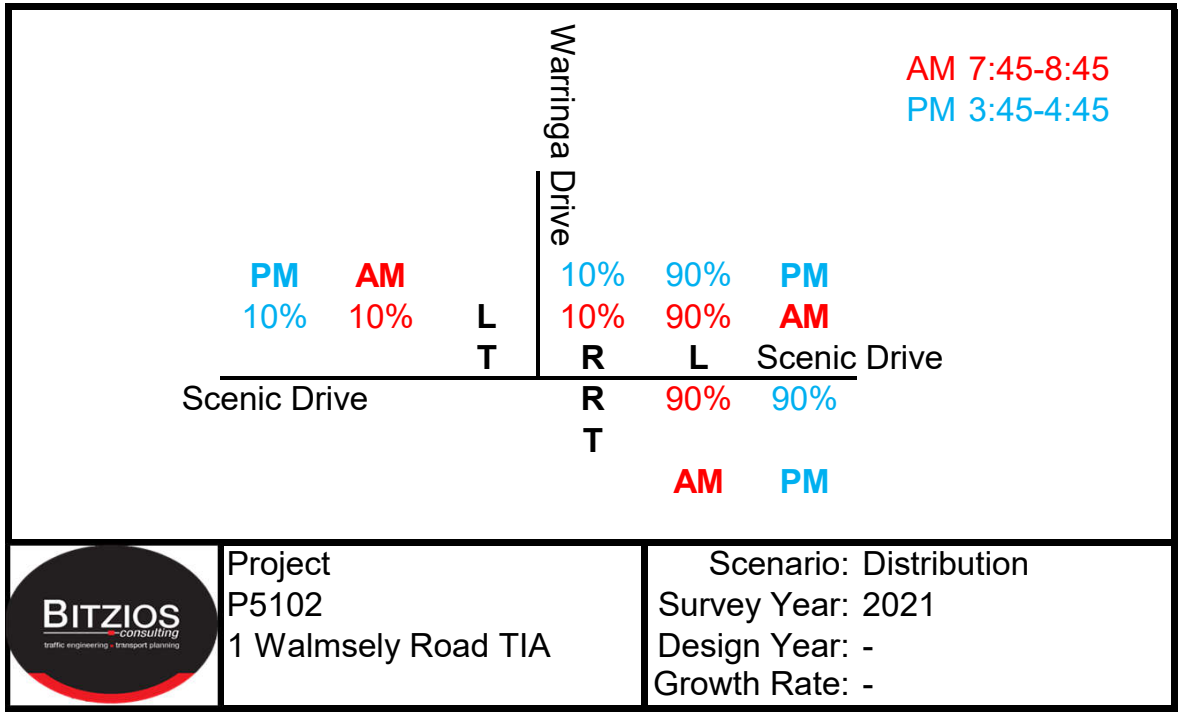
AM 7:45-8:45
PM 3:45-4:45



BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Survey (HV) Survey Year: 2021 Design Year: - Growth Rate: -

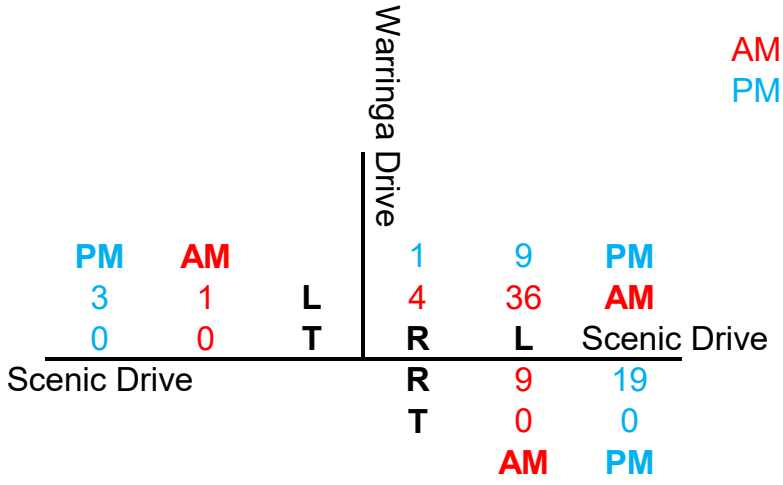


BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: HV (%) Survey Year: 2021 Design Year: - Growth Rate: -



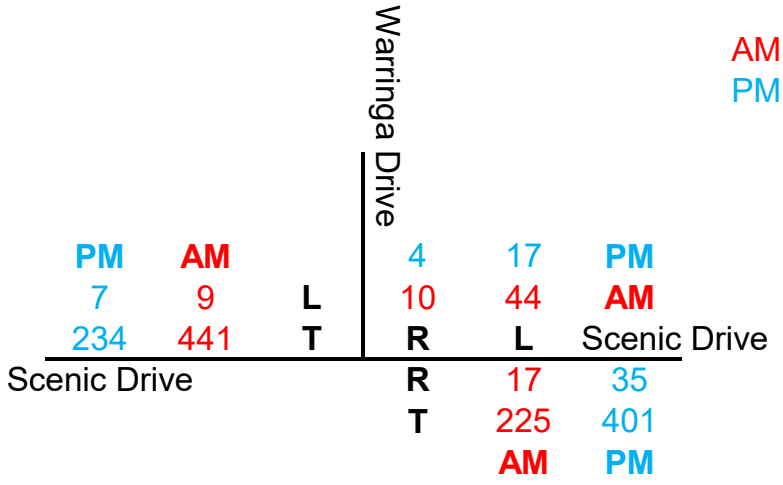
BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Distribution Survey Year: 2021 Design Year: - Growth Rate: -

AM 7:45-8:45
PM 3:45-4:45

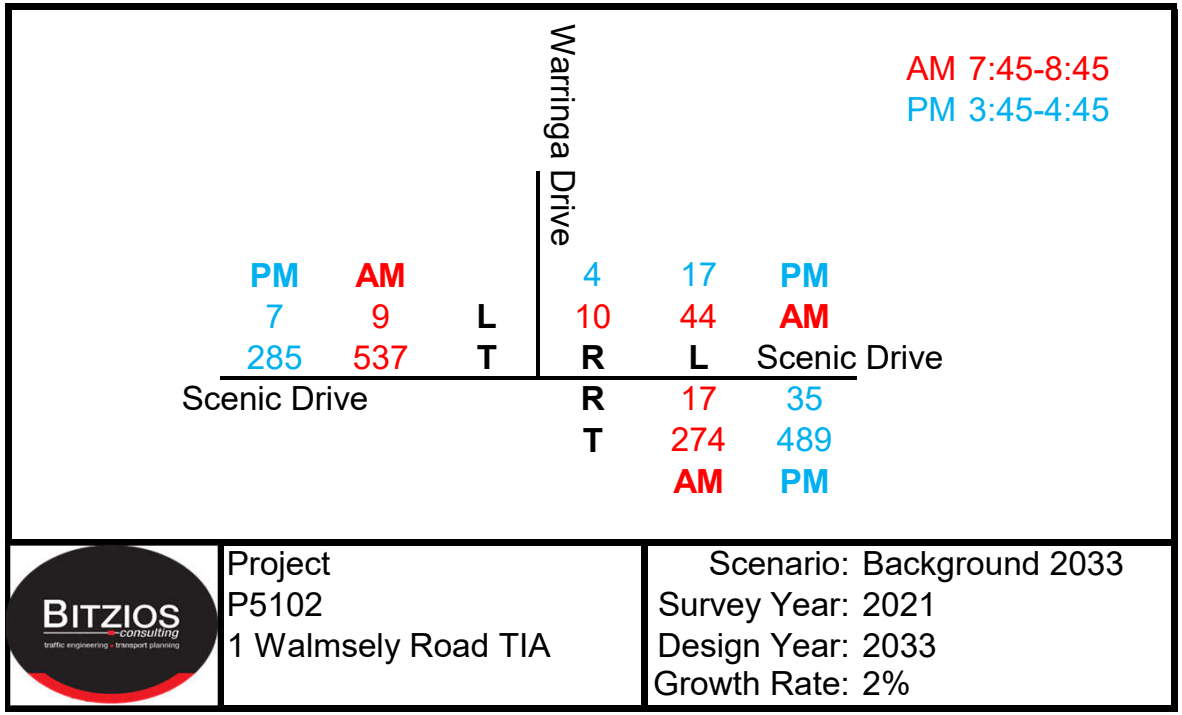


BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Design Volumes Survey Year: 2021 Design Year: - Growth Rate: -

AM 7:45-8:45
PM 3:45-4:45

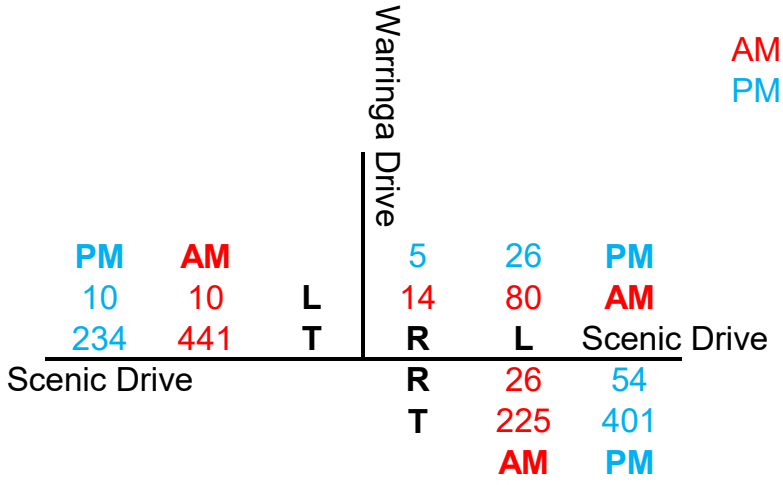


BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Background 2023 Survey Year: 2021 Design Year: 2023 Growth Rate: 2%



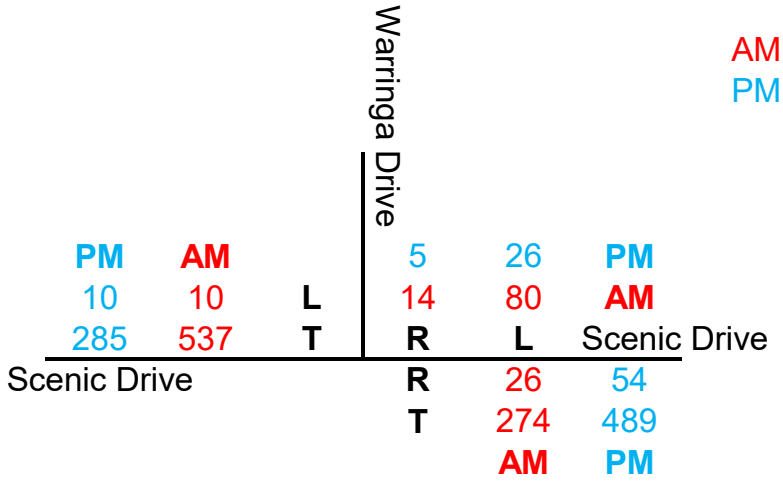
BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Background 2033 Survey Year: 2021 Design Year: 2033 Growth Rate: 2%

AM 7:45-8:45
PM 3:45-4:45



BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Design 2023 Survey Year: 2021 Design Year: 2023 Growth Rate: 2%

AM 7:45-8:45
PM 3:45-4:45



BITZIOS consulting traffic engineering - transport planning	Project P5102 1 Walmsely Road TIA	Scenario: Design 2033 Survey Year: 2021 Design Year: 2033 Growth Rate: 2%

Appendix D: SIDRA Movement Summary

MOVEMENT SUMMARY

Site: 101 [2023AM BG (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	225	4.0	237	4.0	0.125	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	17	6.0	18	6.0	0.022	8.0	LOS A	0.1	0.6	0.49	0.65	0.49	51.5
Approach		242	4.1	255	4.1	0.125	0.6	NA	0.1	0.6	0.03	0.05	0.03	59.3
North: Warringa Drive (N)														
7	L2	44	5.0	46	5.0	0.090	8.1	LOS A	0.3	2.3	0.52	0.74	0.52	50.6
9	R2	10	10.0	11	10.0	0.090	14.9	LOS B	0.3	2.3	0.52	0.74	0.52	50.6
Approach		54	5.9	57	5.9	0.090	9.4	LOS A	0.3	2.3	0.52	0.74	0.52	50.6
West: Scenic Drive (W)														
10	L2	9	22.0	9	22.0	0.006	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	52.7
11	T1	441	2.0	464	2.0	0.241	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		450	2.4	474	2.4	0.241	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		746	3.2	785	3.2	0.241	1.0	NA	0.3	2.3	0.05	0.08	0.05	58.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2023AM DEV (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	225	4.0	237	4.0	0.126	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	26	6.0	27	6.0	0.034	8.1	LOS A	0.1	0.9	0.49	0.67	0.49	51.5
Approach		251	4.2	264	4.2	0.126	0.9	NA	0.1	0.9	0.05	0.07	0.05	58.9
North: Warringa Drive (N)														
7	L2	80	5.0	84	5.0	0.152	8.2	LOS A	0.5	4.0	0.53	0.76	0.53	50.7
9	R2	14	10.0	15	10.0	0.152	15.6	LOS B	0.5	4.0	0.53	0.76	0.53	50.6
Approach		94	5.7	99	5.7	0.152	9.3	LOS A	0.5	4.0	0.53	0.76	0.53	50.6
West: Scenic Drive (W)														
10	L2	10	22.0	11	22.0	0.007	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	52.7
11	T1	441	2.0	464	2.0	0.241	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		451	2.4	475	2.4	0.241	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		796	3.4	838	3.4	0.241	1.5	NA	0.5	4.0	0.08	0.12	0.08	58.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2023PM BG (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	401	1.0	422	1.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	35	3.0	37	3.0	0.034	6.6	LOS A	0.1	0.9	0.35	0.58	0.35	52.4
Approach		436	1.2	459	1.2	0.219	0.6	NA	0.1	0.9	0.03	0.05	0.03	59.2
North: Warringa Drive (N)														
7	L2	17	6.0	18	6.0	0.031	6.7	LOS A	0.1	0.8	0.40	0.61	0.40	51.3
9	R2	4	25.0	4	25.0	0.031	15.7	LOS B	0.1	0.8	0.40	0.61	0.40	50.7
Approach		21	9.6	22	9.6	0.031	8.4	LOS A	0.1	0.8	0.40	0.61	0.40	51.2
West: Scenic Drive (W)														
10	L2	7	14.0	7	14.0	0.004	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	53.0
11	T1	234	5.0	246	5.0	0.130	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		241	5.3	254	5.3	0.130	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.7
All Vehicles		698	2.8	735	2.8	0.219	0.7	NA	0.1	0.9	0.03	0.05	0.03	59.1

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.
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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2023PM DEV (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	401	1.0	422	1.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	54	3.0	57	3.0	0.052	6.7	LOS A	0.2	1.5	0.36	0.59	0.36	52.4
Approach		455	1.2	479	1.2	0.219	0.8	NA	0.2	1.5	0.04	0.07	0.04	58.9
North: Warringa Drive (N)														
7	L2	26	6.0	27	6.0	0.045	6.7	LOS A	0.2	1.2	0.40	0.62	0.40	51.4
9	R2	5	25.0	5	25.0	0.045	16.4	LOS B	0.2	1.2	0.40	0.62	0.40	50.8
Approach		31	9.1	33	9.1	0.045	8.3	LOS A	0.2	1.2	0.40	0.62	0.40	51.3
West: Scenic Drive (W)														
10	L2	10	14.0	11	14.0	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	53.0
11	T1	234	5.0	246	5.0	0.130	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		244	5.4	257	5.4	0.130	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.6
All Vehicles		730	3.0	768	3.0	0.219	1.0	NA	0.2	1.5	0.04	0.08	0.04	58.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2033AM BG (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	274	4.0	288	4.0	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	17	6.0	18	6.0	0.025	8.9	LOS A	0.1	0.7	0.53	0.70	0.53	50.9
Approach		291	4.1	306	4.1	0.153	0.6	NA	0.1	0.7	0.03	0.04	0.03	59.3
North: Warringa Drive (N)														
7	L2	44	5.0	46	5.0	0.110	9.0	LOS A	0.4	2.8	0.59	0.80	0.59	49.6
9	R2	10	10.0	11	10.0	0.110	19.3	LOS B	0.4	2.8	0.59	0.80	0.59	49.5
Approach		54	5.9	57	5.9	0.110	10.9	LOS A	0.4	2.8	0.59	0.80	0.59	49.6
West: Scenic Drive (W)														
10	L2	9	22.0	9	22.0	0.006	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	52.7
11	T1	537	2.0	565	2.0	0.294	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		546	2.3	575	2.3	0.294	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		891	3.1	938	3.1	0.294	1.0	NA	0.4	2.8	0.05	0.07	0.05	58.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2033AM DEV (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	274	4.0	288	4.0	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	26	6.0	27	6.0	0.039	8.9	LOS A	0.1	1.0	0.54	0.72	0.54	50.9
Approach		300	4.2	316	4.2	0.153	0.8	NA	0.1	1.0	0.05	0.06	0.05	59.0
North: Warringa Drive (N)														
7	L2	80	5.0	84	5.0	0.184	9.2	LOS A	0.6	4.8	0.59	0.83	0.59	49.6
9	R2	14	10.0	15	10.0	0.184	20.3	LOS B	0.6	4.8	0.59	0.83	0.59	49.6
Approach		94	5.7	99	5.7	0.184	10.9	LOS A	0.6	4.8	0.59	0.83	0.59	49.6
West: Scenic Drive (W)														
10	L2	10	22.0	11	22.0	0.007	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	52.7
11	T1	537	2.0	565	2.0	0.294	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		547	2.4	576	2.4	0.294	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		941	3.3	991	3.3	0.294	1.5	NA	0.6	4.8	0.07	0.11	0.07	58.3

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2033PM BG (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	489	1.0	515	1.0	0.268	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	35	3.0	37	3.0	0.036	6.9	LOS A	0.1	1.0	0.39	0.61	0.39	52.3
Approach		524	1.1	552	1.1	0.268	0.5	NA	0.1	1.0	0.03	0.04	0.03	59.3
North: Warringa Drive (N)														
7	L2	17	6.0	18	6.0	0.037	7.0	LOS A	0.1	1.0	0.47	0.64	0.47	50.5
9	R2	4	25.0	4	25.0	0.037	20.4	LOS B	0.1	1.0	0.47	0.64	0.47	49.9
Approach		21	9.6	22	9.6	0.037	9.5	LOS A	0.1	1.0	0.47	0.64	0.47	50.4
West: Scenic Drive (W)														
10	L2	7	14.0	7	14.0	0.004	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	53.0
11	T1	285	5.0	300	5.0	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		292	5.2	307	5.2	0.159	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles		837	2.8	881	2.8	0.268	0.6	NA	0.1	1.0	0.03	0.05	0.03	59.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2033PM DEV (Site Folder: General)]

P5102
1 Walmsleys Road Mixed-Use TIA
Scenic Drive / Warringa Drive Intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Scenic Drive (E)														
5	T1	489	1.0	515	1.0	0.267	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	54	3.0	57	3.0	0.056	7.0	LOS A	0.2	1.5	0.40	0.62	0.40	52.2
Approach		543	1.2	572	1.2	0.267	0.8	NA	0.2	1.5	0.04	0.06	0.04	59.0
North: Warringa Drive (N)														
7	L2	26	6.0	27	6.0	0.053	7.0	LOS A	0.2	1.4	0.46	0.65	0.46	50.7
9	R2	5	25.0	5	25.0	0.053	21.3	LOS B	0.2	1.4	0.46	0.65	0.46	50.1
Approach		31	9.1	33	9.1	0.053	9.3	LOS A	0.2	1.4	0.46	0.65	0.46	50.6
West: Scenic Drive (W)														
10	L2	10	14.0	11	14.0	0.006	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	53.0
11	T1	285	5.0	300	5.0	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		295	5.3	311	5.3	0.159	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.7
All Vehicles		869	2.9	915	2.9	0.267	0.9	NA	0.2	1.5	0.04	0.07	0.04	58.9

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.
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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.