

Central Coast Quarter - 26 Mann Street, Gosford

Staged Concept Masterplan
Transport Impact Assessment



Prepared by: GTA Consultants (NSW) Pty Ltd for SH Gosford Residential Pty Ltd
on 27/09/19
Reference: N131974
Issue #: D

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1. INTRODUCTION

01

1.1. Background

It is understood that a Concept State Significant Development Application (SSDA) is to be lodged with the Central Coast Council (Council) for a proposed staged mixed-use development on land located at 26 Mann Street, Gosford. The site is bounded by Mann Street to the east and Vaughan Avenue to the south.

GTA Consultants (GTA) was commissioned by SH Gosford Residential Pty Ltd to undertake a transport impact assessment for the overall concept design masterplan.

1.2. Development Proposal

The proposed development incorporates hotel, residential, commercial and retail uses with a gross floor area (GFA) of 39,630 square metres.

The proposed site includes the following three development stages:

- Stage 1: Hotel - 182 hotel rooms and 371 square metres net leasable area (NLA) of retail area (eastern building).
- Stage 2: Mixed Use - 135 residential apartments, 712 square metres of commercial area and 1,503 square metres NLA of retail area (southern building).
- Stage 3: Mixed Use - 160 residential apartments and 386 square metres NLA of commercial and 441 square metres NLA of retail area (northern building).

1.3. Purpose of This Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- existing traffic and parking conditions surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- service vehicle requirements
- pedestrian and bicycle requirements
- the traffic generating characteristics of the proposed development
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network.

This report addresses the Department of Planning and Environment - NSW Government (DPE) requirements for transport and accessibility impacts (construction and operational) that are included in Secretary's Environmental Assessment Requirements (SEARs) – Schedule 2 of the Environmental Planning and Assessment Regulation 2000, as referenced in Table 1.1.

Table 1.1: Secretary's Environmental Assessment Requirements

Key Traffic and Transport Issue	Relevant Report Section
Assess the traffic impacts of the development on the surrounding local and classified road network using SIDRA or similar traffic model and specify any road upgrade works (local and classified) required to maintain acceptable levels of service	Section 8.3.1 and 8.4
The assessment is to include traffic and parking generated by existing and approved developments, as well as that by the proposal, and consider car sharing facilities to reduce overall parking demands in the area	Section 3.3, 5
Estimate the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips.	Section 8.1,
Assess the adequacy of public transport, pedestrian and bicycle provisions to meet the likely future demand of the proposed development	Section 6
Demonstrate the proposed layout, access points, and car parking can comply with the relevant Australian Standards and Council requirements.	Section 5, 7
Demonstrate sufficient on-site car parking, loading/unloading pedestrian and cycling facilities (including bicycle parking and end-of-trip facilities) would be provided for the development	Section 5, 6
Assess the impact of the proposal on car parking within the Gosford CBD during construction and operation of the proposed development	Section 9.1 Section 5.1
Describe the measures to be implemented to promote sustainable means of travel, including public transport use, pedestrian and bicycle linkages.	Section 6
Prepare a preliminary Construction Traffic Management Plan for the proposal and outline how construction traffic, public transport, bicycle and pedestrian impacts, and parking impacts would be appropriately managed and mitigated.	Section 9.1
Detail the public transport options and pedestrian links for future residents of the proposed development	Section 6.4 and Section 6.5 (Reference Section 3.6 and Section 3.7)
Address the issues raised by Central Coast Council in correspondence dated 19 July 2019	
Address the issues raised by Roads and Maritime Services in correspondence dated 19 July 2019	

1.4. References

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

- an inspection of the site and its surrounds
- traffic surveys undertaken by Matrix as referenced in the context of this report
- plans for the proposed development prepared by DKO Architects, received 28/08/2019
- 32 Mann Street, Gosford Traffic Impact Assessment, prepared by Cardno 29 April 2016 (Cardno Report)
- Cardno Technical Traffic Addendum 12 August 2016
- Leagues Club Field and Gosford City Park Master Plan TIA, prepared by TTPP May 2019
- Gosford City Centre Development Control Plan (DCP) 2018¹
- Gosford City Council Local Environmental Plan (LEP) 2014

¹ <https://www.planning.nsw.gov.au/-/media/Files/DPE/Plans-and-policies/Gosford-city-centre-development-control-plan-dcp-2018-17202018.pdf>

- State Environmental Planning Policy (Gosford City Centre) 2018
- Gosford City Centre Transport Management and Accessibility Plan
- Roads and Maritime Services “Guide to Traffic Generating Developments” 2002 and TDT 2013/04 Updated Traffic Surveys
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009
- Gosford Bike Strategy 2014
- Future Transport Strategy 2056 and supporting plans
- State Infrastructure Strategy 2018 – 2038
- Central Coast Regional Plan 2036
- other documents and data as referenced in this report.

2. STRATEGIC CONTEXT

02

2.1. State Government Policies

2.1.1. Future Transport Strategy 2056

The Future Transport Strategy (Future Transport) is a 40-year strategy for Sydney and Regional NSW prepared by Transport for NSW (TfNSW) in response to the expected population and economic growth in NSW as well as provides an understanding of the future of transportation.

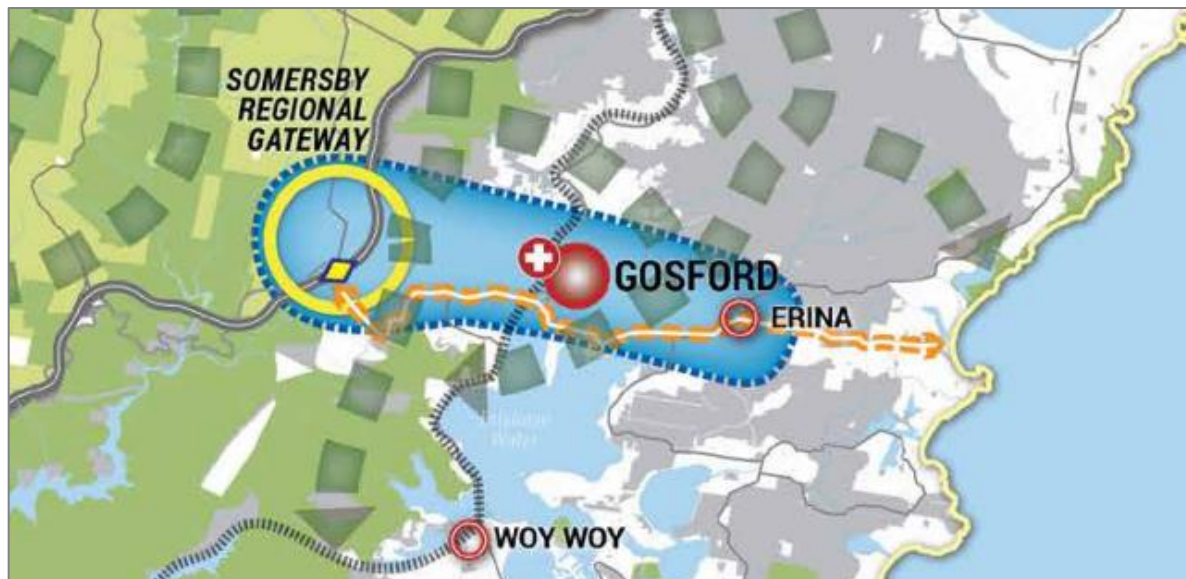
Future Transport identifies Gosford as a 'satellite city', outside of, but closely related to the Greater Sydney Region. TfNSW envisions that population and economic growth in these areas will happen and fast transit considerations are in place. Notably, Gosford is envisioned to be provided transit frequencies at a 'turn up and go' frequency – that is, services will carry large numbers of customers on predictable and reliable services without timetables.

2.1.2. Central Coast Regional Plan

The Central Coast Regional Plan (herein referred to as 'The Plan') was released in October 2016 and outlines the vision and goals for the Central Coast region, with Gosford as its Regional City. The Plan is intended to guide land use planning and inform the determination of development proposals and infrastructure funding decisions.

The area between the Somersby Regional Gateway and Erina has been identified as a Regional Growth Corridor with Gosford City Centre at its core. Infill high density housing is anticipated in these locations together with a variety of land uses including health, retail, commercial and sporting/ recreational uses ensuring good diversity, as illustrated in Figure 2.1. The Gosford City Core and the intended various precincts are detailed in Figure 2.2.

Figure 2.1: Draft Central Coast Regional Plan overview



Source: Central Coast Regional Plan, Figure 3, p.11

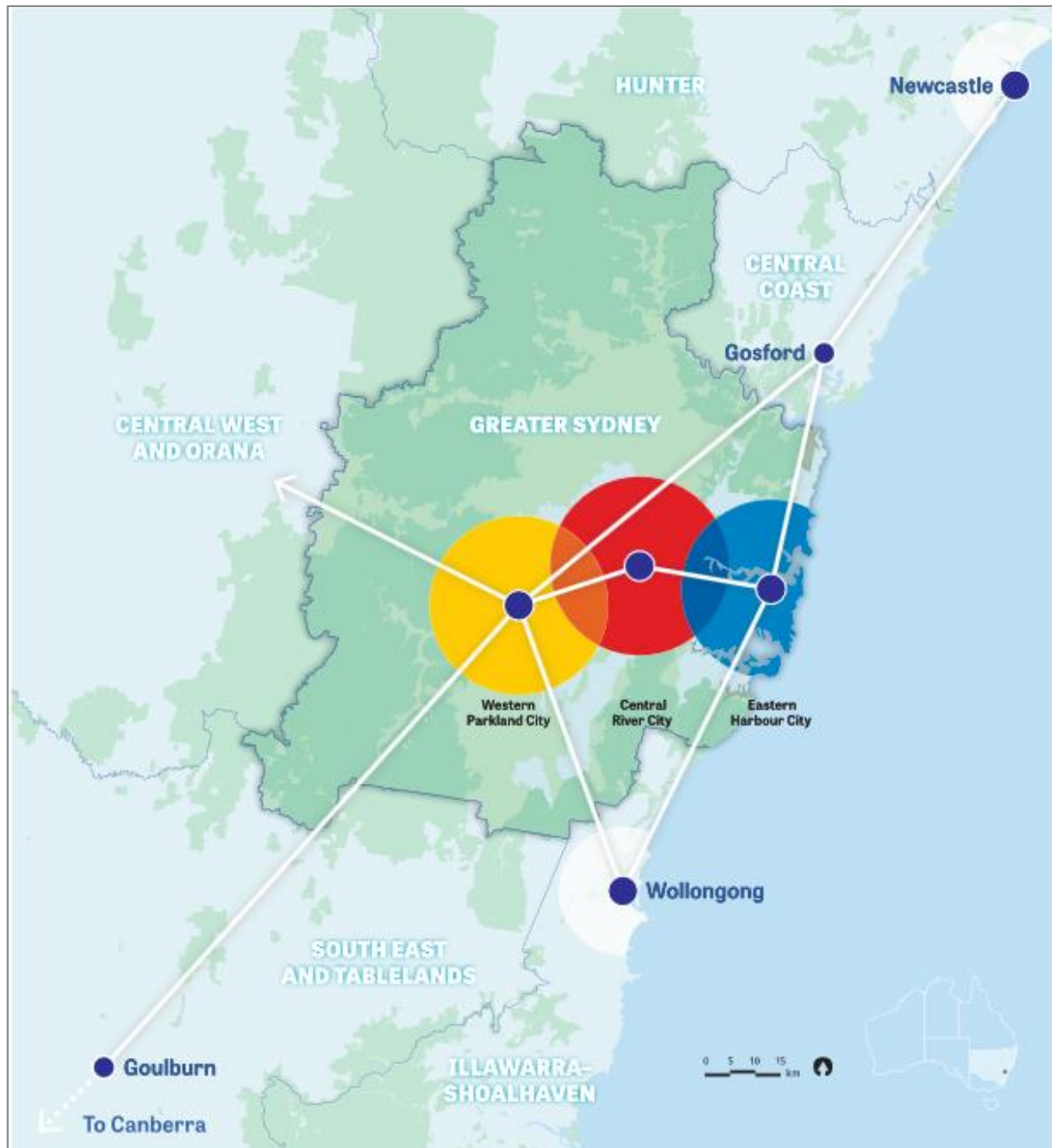
Figure 2.2: Gosford City Centre



Source: Central Coast Regional Plan, Figure 4, p.17

Gosford's strategic and transport relationship to Sydney is well recognised and illustrated in Figure 2.3. In this regard, Future Transport Strategy 2056 (March 2018) projects that economic and housing growth around Greater Sydney will establish Gosford as a 'satellite city' to Sydney. To support Gosford as a satellite city, improvements to existing transport connections will be required and, in the longer term, consideration of higher speed rail.

Figure 2.3: Greater Sydney regional context



Source: The Greater Sydney Regional Plan, Figure 31

2.2. Local Context

2.2.1. Gosford City Centre Transport Management and Accessibility Plan

The Gosford City Centre Transport Management and Accessibility Plan (TMAP) suggests public transport network improvements to encourage greater modal shift to public transport, walking and cycling in the Greater Gosford area, providing better connectivity and mobility within the city.

Examples of suggested projects include improved cycle and pedestrian connectivity across the railway bridges on Etna Street and Donnison Street, and improved pedestrian connectivity from the waterfront to the city centre, which both projects will greatly enhance pedestrian mobility between the site and surrounding areas within the Gosford City Centre.

In particular, the revision of parking rates and supply along with the investigation into improved bicycle parking and end of trip facilities for workers in Gosford has been identified as a key focus for the connectivity of Gosford, which would both greatly encourage modal shift.

3. EXISTING CONDITIONS

03

3.1. Location

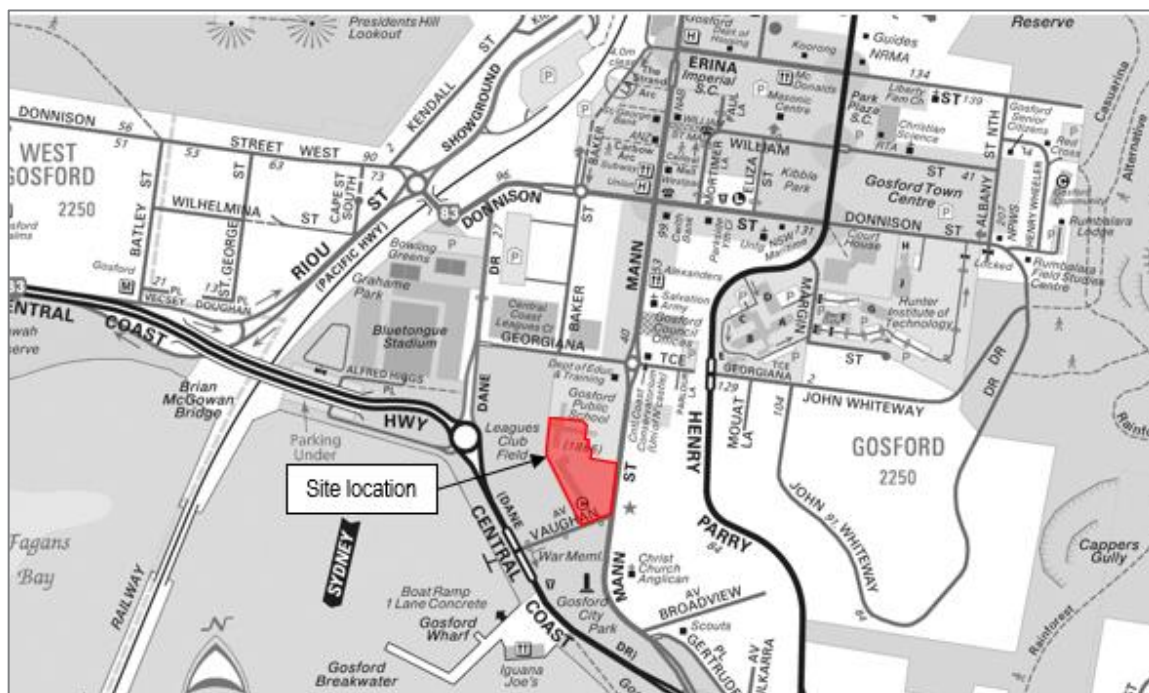
The subject site is located at 26 Mann Street, Gosford. The site is around 9,844 square metres with a frontage of 105 metres to Mann Street to the east and is bounded by Vaughan Avenue to the south.

The site is currently accessible via Vaughan Avenue, the proposed site will be accessed from two locations, one from the recently constructed extension of Baker Street to the west of the site and another from Vaughan Street to the south of the site.

The site has a land zoning as B4 - Mixed Use. The surrounding properties predominantly include commercial, mixed-use and residential uses.

The location of the subject site and its surrounding environs is shown in Figure 3.1.

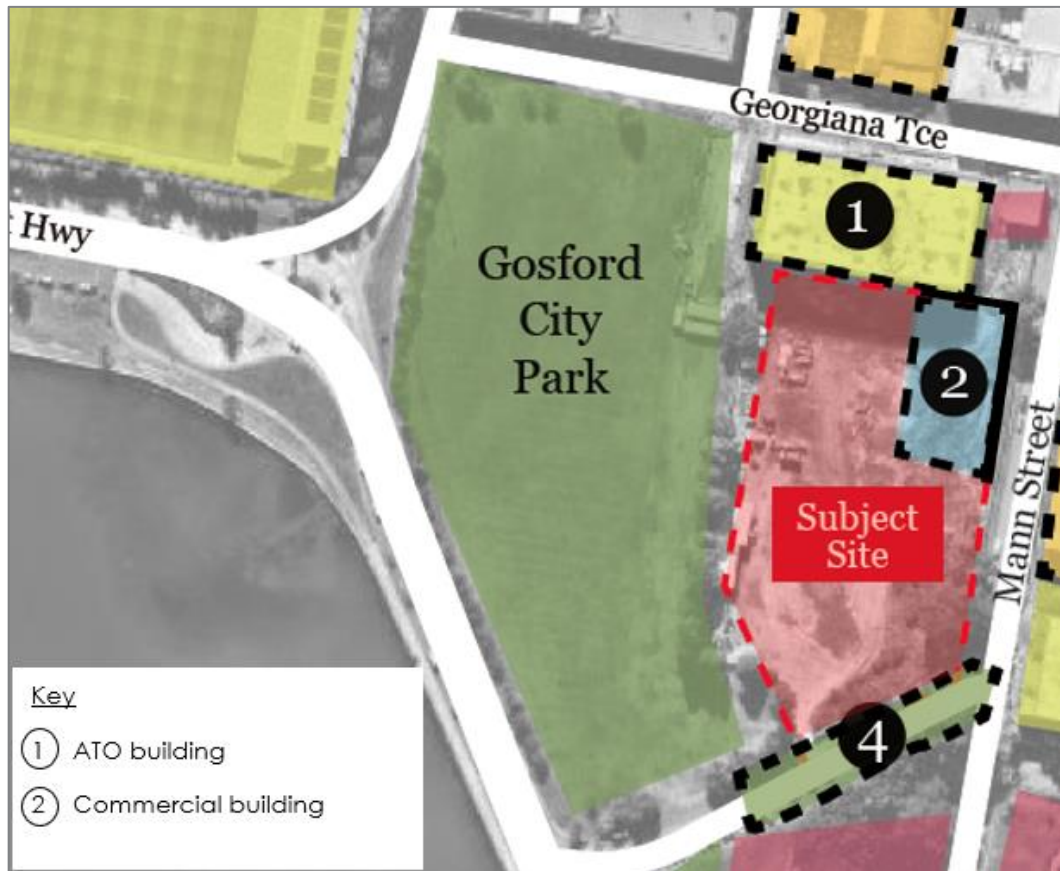
Figure 3.1: Subject site and its environs



Base image source: Sydney

Figure 3.2 provides an understanding of the site context.

Figure 3.2: Site context



Source: DKO Architecture dated 16 February 2018

3.2. Transport Network

3.2.1. Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Roads and Maritime Services (Roads and Maritime) responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules, most recently amended on 19 March 2018.

Roads and Maritime defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by Roads and Maritime, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or Roads and Maritime under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

3.2.2. Surrounding Road Network

Central Coast Highway

The Central Coast Highway is a state arterial road under the authority of Roads and Maritime and near the site is aligned in a north-south direction. Between Dane Drive and Mann Street the Central Coast Highway is a divided two-way road configured with two lanes in each direction within a carriageway of around 15 metres. It has a posted speed limit of 60 kilometres per hour in the study area and carries around 30,000 vehicles per day.

Mann Street

Mann Street functions as a collector road which borders the eastern side of the development and is generally aligned in a north-south direction. Mann Street is a two-way road configured with one lane in each direction with a carriageway of around 13 metres. It has a posted speed limit of 40 kilometres per hour adjacent to the site and carries around 8,000 vehicles per day.

Kerbside parking is permitted for one hour on the western side and four hours on the eastern side of Mann Street on weekdays (8:30am to 6:00pm) and on Saturday (8:30am to 12:30pm). Parking on Mann Street is unrestricted at other times.

Mann Street is shown in Figure 3.3 and Figure 3.4.

Figure 3.3: Mann Street (facing north)



Figure 3.4: Mann Street (facing south)



Georgiana Terrace

Georgiana Terrace functions as a collector road connecting Mann Street to Dane Drive in an east-west direction. It is a two-way road configured with one lane in each direction within a carriageway of around 12-metres. Georgiana Terrace has a posted speed limit of 40 kilometres per hour in the study area and carries around 3,000 vehicles per day.

Kerbside parking is permitted for one hour between Mann Street and Baker Street, and two hours between Baker Street and Dane Drive on weekdays (8:30am to 6:00pm) and on Saturdays (8:30am to 12:30pm). Parking on Georgiana Terrace is unrestricted at other times.

Vaughan Avenue

Vaughan Avenue functions as a local road connecting Mann Street to the Central Coast Highway on the southern boundary of the site. It is a two-way road, with one lane in each direction, set within a carriageway of around 12 metres.

Kerbside parking is permitted for four hours on weekdays (Monday to Friday 8:30am to 6:00pm) and on Saturdays (8:30am to 12:30pm). A section of 90-degree angled parking is provided on the southwestern end of Vaughan Avenue

EXISTING CONDITIONS

also with four-hour parking restrictions. The connection from the Central Coast Highway to/ from Vaughan Street is through a left in/left out arrangement only.

Vaughan Avenue is shown in Figure 3.5 and Figure 3.6.

Figure 3.5: Vaughan Avenue (facing west)



Figure 3.6: Vaughan Avenue (facing south)



Baker Street

Baker Street (south of Georgiana Terrace) has recently been constructed to provide access to the ATO Building and the recently constructed commercial building at 32 Mann Street as shown in Figure 3.3. This section of Baker Street currently terminates south of the existing access to the ATO Building and commercial building.

The new section of Baker Street is currently a two-way road configured with one lane in each direction within a carriageway of around 15 metres. 90-degree angled parking is provided on the western side of Baker Street, providing for 18 parking spaces

3.2.3. Surrounding Intersections

The following intersections currently exist near the site:

- Georgiana Terrace/ Dane Drive
- Georgiana Terrace/ Baker Street
- Georgiana Terrace/ Mann Street
- Vaughan Avenue/ Mann Street
- Central Coast Highway/ Dane Drive
- Central Coast Highway/ Mann Street.

3.3. Traffic Volumes

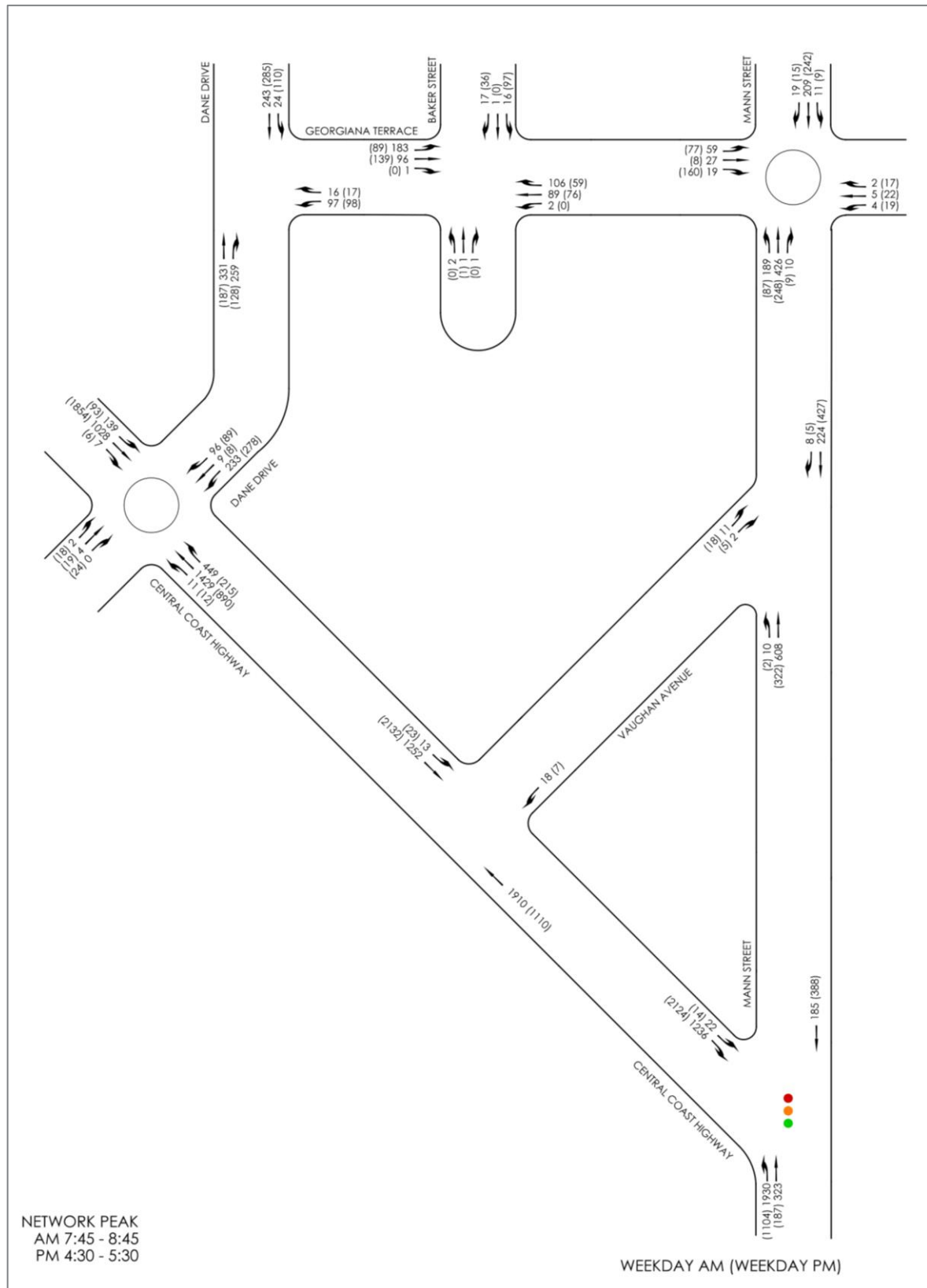
GTA commissioned traffic movement counts at key intersections on Tuesday 28 November 2017 during the following peak periods:

- 7:00am and 10:00am
- 4:00pm and 7:00pm.

The AM and PM peak hour traffic volumes are summarised in Figure 3.7, with full results contained in Appendix A.

It is noted that at the time of the traffic surveys the Baker Street extension and commercial building at 32 Mann Street were still under construction. Proposed traffic generation from this site has been included in the future base scenarios.

Figure 3.7: Existing AM / PM network peak hour traffic volumes



3.4. Intersection Operation

The operation of the key intersections within the study area have been assessed using SIDRA Intersection², a computer-based modelling package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by Roads and Maritime, is vehicle delay. SIDRA Intersection determines the average delay that vehicles encounter and provides a measure of the level of service.

Table 3.1 shows the criteria that SIDRA Intersection adopts in assessing the level of service.

Table 3.1: SIDRA INTERSECTION level of service criteria

Level of Service (LOS)	Average Delay per vehicle (secs/ veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Table 3.2 presents a summary of the existing operation of the intersection, with full results presented in Appendix B of this report.

² Program used under license from Akcelik & Associates Pty Ltd.

Table 3.2: Existing operating conditions

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Georgiana Terrace/ Dane Drive	AM	0.36	12	4	A
	PM	0.21	8	4	A
Georgiana Terrace/ Baker Street	AM	0.05	8	1	A
	PM	0.17	8	5	A
Georgiana Terrace/ Mann Street	AM	0.13	8	5	A
	PM	0.06	10	2	A
Mann Street/ Vaughan Avenue	AM	0.02	11	1	A
	PM	0.03	9	1	A
Central Coast Highway/ Dane Drive	AM	0.70	10	70	A
	PM	1.11	>200	>200	F
Central Coast Highway/ Mann Street	AM	0.71	11	82	A
	PM	0.80	11	84	A

Table 3.2 indicates that all intersections analysed, except for the intersection of the Central Coast Highway and Dane Drive, currently operate at an acceptable level of service with spare capacity. The intersection of Central Coast Highway and Dane Drive is currently controlled by a dual lane roundabout and experiences queueing and delays on Dane Drive during the PM Peak. Site observations during the peak period noted queues extending around 200 metres, however gaps were provided for vehicles to enter and exit Georgiana Terrace at Dane Drive.

3.5. Transport Studies

A traffic impact assessment for the commercial building recently constructed at 32 Mann Street was prepared by Cardno in April 2016. Cardno prepared an addendum in August 2016 in response to comments from Roads and Maritime. The Cardno traffic assessment and addendum were considered while preparing this traffic impact assessment for the staged concept masterplan.

3.5.1. Gosford City Park Masterplan

A traffic and parking impact assessment for the existing Gosford Leagues Club field site adjacent was prepared by The Transport Planning Partnership (TPPP) in May 2019. The existing field site is to be repurposed into a new civic park that includes a new sporting field, a regional playground, a 'Community Node' to hold community and cultural events, and the extension of Baker Street to provide a pedestrian and/or vehicular link.

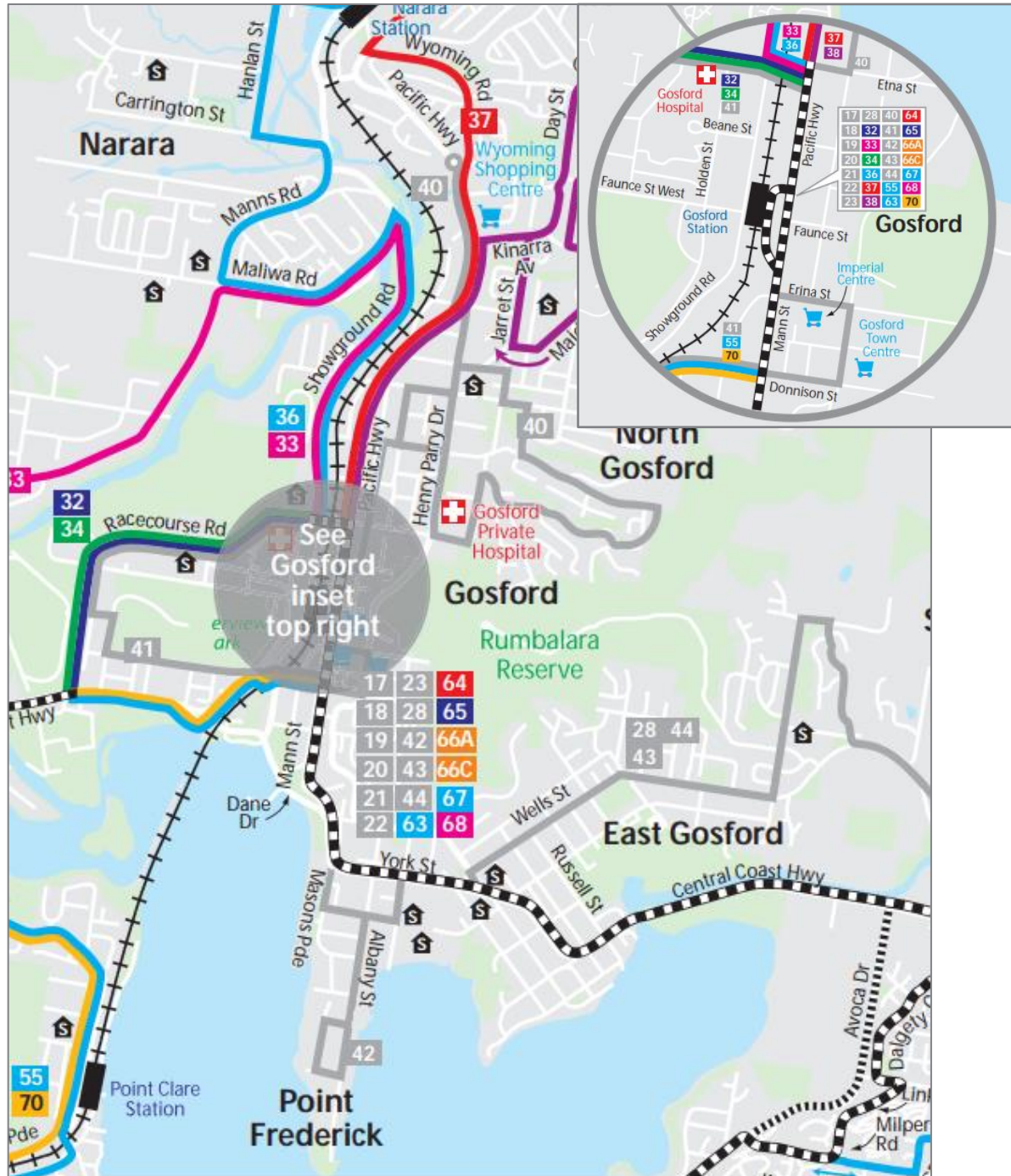
As part of the development, it is proposed to extend Baker Street from the recently constructed section south of Georgiana Terrace through to Vaughan Avenue. The TPPP assessment outlines two options for Baker Street extension with one as a shared zone including around 20 parallel parking spaces or as a conventional road link with around 45 90-degree angled parking spaces.

The TPPP assessment does not outline the expected traffic generation for the proposed Gosford City Park redevelopment and the SIDRA assessment is based on the total traffic that Baker Street should carry under each scenario. Based on this, it is assumed that the proposed park itself would not be a traffic generator but serve the local area and community as a linked destination and therefore traffic associated with the Gosford City Park is likely to park in existing parking buildings/ on street parking spaces around the CBD.

3.6. Public Transport

The site is well serviced by public transport. The site is located nearby high frequency bus services which serve the Central Coast area by providing direct connections to and from Gosford CBD and train station. The site is within 600 metres of Gosford train station. Bus services are shown in Figure 3.8.

Figure 3.8: Surrounding public transport network



Source: https://busways.com.au/sites/default/files/network_maps/GosfordNetworkMap.pdf

A review of the public transport available near the site is summarised in Table 3.3.

Table 3.3: Public transport provision

Service	Route #	Route Description	Location of Stop	Distance to Nearest Stop (metres)	Frequency On/ Off Peak
Bus	See Map	Connection between Gosford CBD and Central Coast Area	Mann St before Georgiana Terrace	50	Up to 18 services/hour
Train	CCN	Newcastle to Sydney/ Sydney to Newcastle	Gosford Railway Station	600	7 services per hour/ 2 services per hour

3.7. Pedestrian and Cycling Infrastructure

The site and its surroundings are well connected by pedestrian infrastructure.

Pedestrian paths are located as follows:

- Mann Street (both sides)
- Georgiana Terrace (both sides)
- Dane Drive (both sides)
- Central Coast Highway (both sides)
- Vaughan Avenue (northern side on eastern end and southern side throughout).

Crossing facilities near the site include the following pedestrian crossings:

- Vaughan Avenue near the Central Coast Highway
- Vaughan Avenue near Mann Street
- On the eastern and southern approaches of the Mann Street/ Georgiana Terrace roundabout.

No dedicated cycling infrastructure is currently provided.

3.8. Existing Travel Behaviour

The 2011 Census data provided by the Australian Bureau of Statistic (ABS) on Journey to Work was reviewed to understand the travel demand characteristic for subject site using travel zone 5334. The travel zone is shown in Figure 3.9.

Figure 3.9: Travel Zone 5334



Place of Work

The 2011 Journey to Work data indicates that a total of 6,352 employed residents live in travel zone 5334. Of these, 67 per cent worked in Gosford CBD and 24 per cent worked in the Wyong. The primary mode of transportation used was private vehicle, accounting for 87 per cent of journey to work trips made. This is shown in Figure 3.10.

Figure 3.10: Travel Zone as place of employment

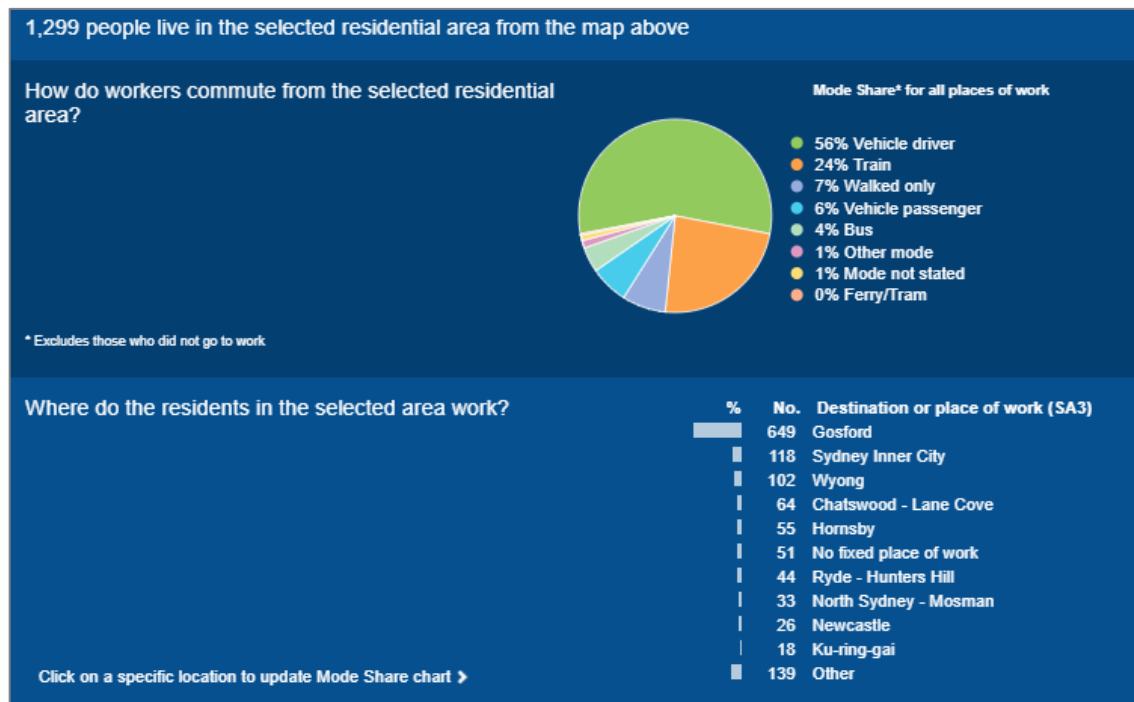


Source: <http://visual.bts.nsw.gov.au/jtwbasic/#5334>, accessed 8 December 2017

Place of Residence

The 2011 Journey to Work indicates that 1,299 people living in the travel zone that were employed. 50 per cent of these people work in the Gosford area, nine per cent lived worked in the Sydney Inner City and eight per cent lived in Wyong area.

Figure 3.11: Travel Zone as place of residence



Source: <http://visual.bts.nsw.gov.au/itwbasic/#5334>, accessed 8 December 2017

4. DEVELOPMENT PROPOSAL

04

4.1. Land Uses

This proposal is for a staged concept masterplan for the site known as 26 Mann Street which includes a three stage mixed use development as outlined in Table 4.1.

Table 4.1: Development schedule

Stage	Use	Size
1	Hotel	182 rooms
	Retail	371m ²
2	Residential	135 units
	Retail	1,503m ²
	Commercial	712m ²
3	Residential	160 Units
	Retail	441m ²
	Commercial	386m ²
Overall	Residential	290 Units
	Hotel	182 Rooms
	Retail	2,315m²
	Commercial	1,098m²

4.2. Development Vehicle Access

4.2.1. Stage 1 – Hotel

A port cochere is proposed to the front of the hotel accessed to/ from Mann Street. Access to the hotel basement car parking is proposed through the recently constructed driveway on the extension of Baker Street as shown in Figure 4.1.

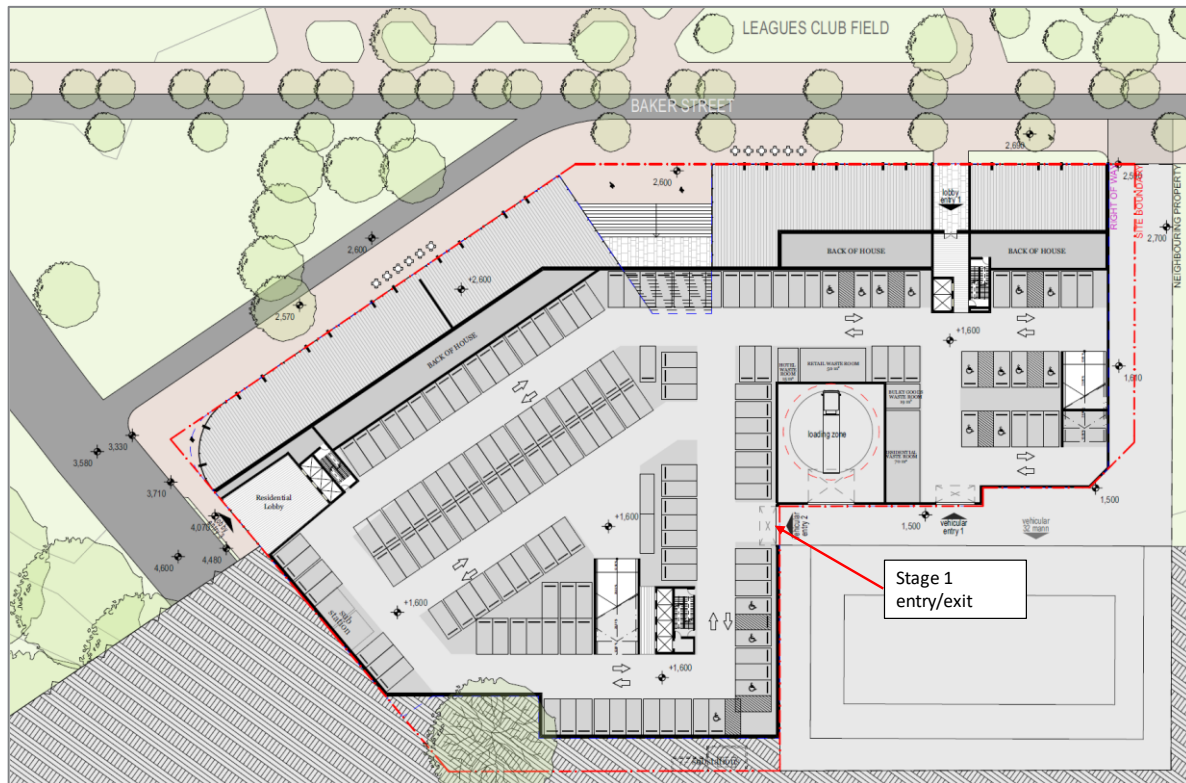
The largest size vehicle the port cochere can accommodate is a seven-metre minibus, a path assessment is provided in Appendix C.

A designated coach parking bay is proposed on Mann Street to the north of the proposed port cochere. This would result in the removal of existing parking spaces as discussed in Section 5.6.

4.2.2. Stages 2 and 3 – Residential Mixed-use

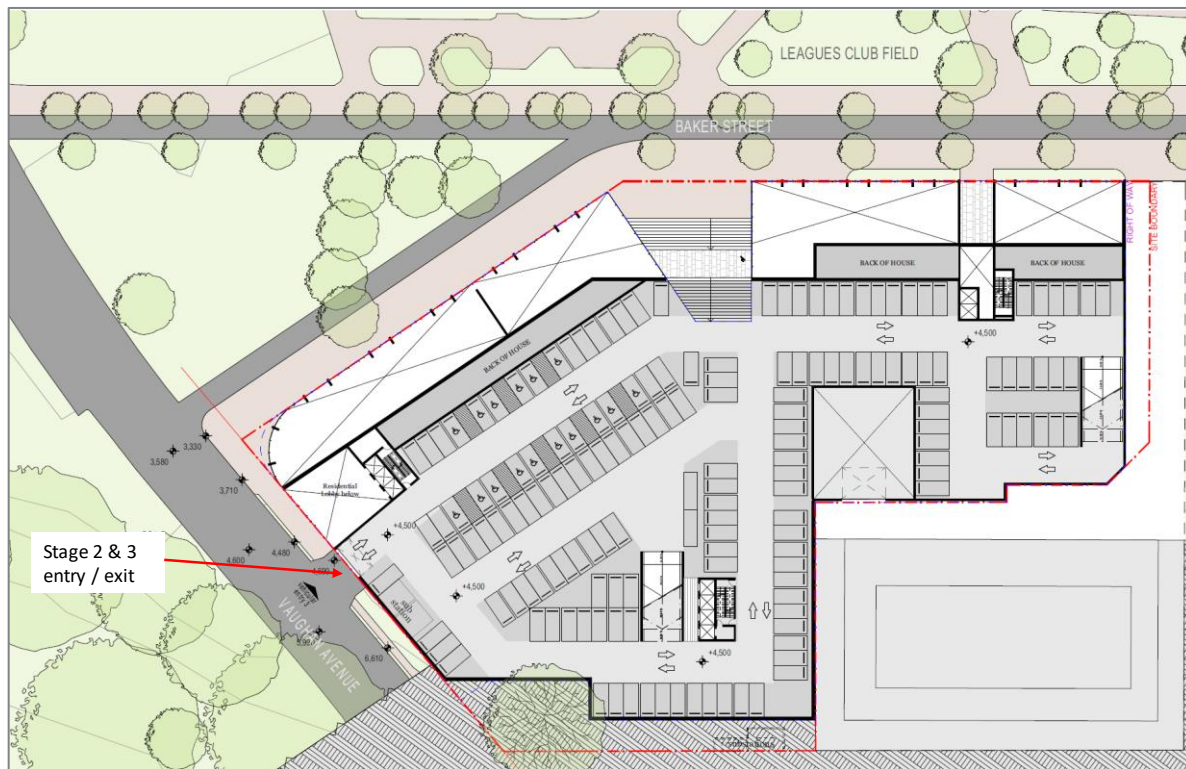
A new access as shown in Figure 4.2 is proposed on Vaughan Avenue to access the basement parking levels for Stages 2 and 3. A connection to Stage 1 basement parking would also be provided.

Figure 4.1: Proposed entry/ exit arrangements ground level



Source: DKO Architecture (NSW) Pty Ltd, dated 28 August 2019

Figure 4.2: Proposed entry/ exit arrangement level one



Source: DKO Architecture (NSW) Pty Ltd, dated 28 August 2019

4.3. Car Parking

To provide an understanding of the total parking provision across the completed development the following indicative breakdown is as follows:

- Stage 1 – 103 parking spaces
- Stage 2 – 159 parking spaces
- Stage 3 – 184 parking spaces.

The suitability of the car parking provision and layout is discussed in Section 5 of this report.

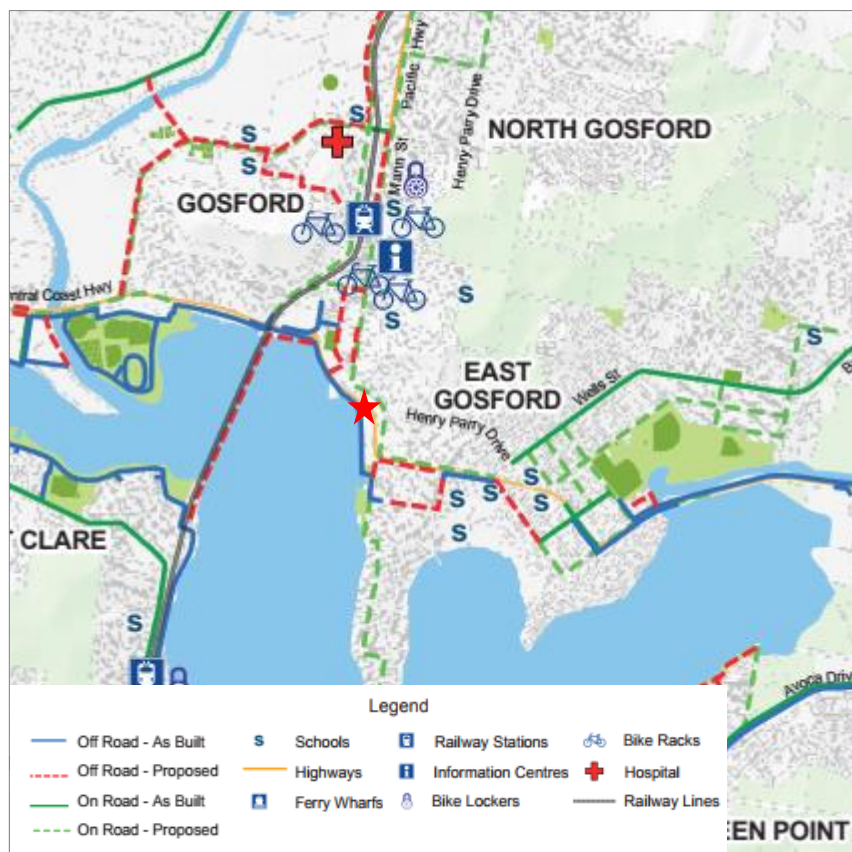
4.4. Pedestrian and Bicycle Facilities

The established footpaths surrounding the site provide an adequate level of pedestrian amenity.

The proposal plans to provide bicycle facilities within the development and the suitability of the bicycle provisions is discussed in Section 6.4 of this report.

Council has a cycling strategy for Gosford which includes a proposed on-road path around the site, as shown in Figure 4.3, the implementation of this would support the objective of the development.

Figure 4.3: Proposed state strategic bike plan



Source: Gosford Bike Strategy 2014

4.5. Loading Areas

One centralised loading and waste collection area is proposed for the entire development. This will be constructed as part of the first stage. This loading area will be accessed through the existing driveway on Baker Street at the northern end of the site as shown in Figure 4.1.

The loading area is available for use of vehicles of up to and including 12.5-metre-long heavy vehicles with turntable operation to ensure vehicles can exit the site in a forward direction.

The suitability of the proposed loading arrangements is discussed in Section 7 of this report.

5. PARKING AND LAYOUT ASSESSMENT

05

5.1. Parking Requirements

5.1.1. Roads and Maritime Guidelines

The NSW Department of Planning and Environment have released the Apartment Design Guide (ADG) that provides commentary on acceptable levels of car parking provision. The ADG states *that for developments either:*

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

the lesser resident and/ or visitor car parking rate of either the “Guide to Traffic Generating Development” (October 2002) or the relevant Council’s requirements can be used.

Given 26 Mann Street is located less than 650 metres from regular rail services at Gosford railway station, and on land zoned B4 Mixed Use an assessment of the parking requirements for residents and visitors has been completed with reference to Roads and Maritime “Guide to Traffic Generating Developments” (2002). The Guide defines high density residential buildings as multi-level buildings containing 20 or more dwellings and does not include aged or disabled persons’ housing, usually with more than five levels, secure basement car parking and located near public transport services.

Table 5.1: Roads and Maritime car parking requirements

Use	Description	RMS parking rates	Area/ No.	Parking Requirements
Stage One				
Hotel	1 Bed	1 space/ 4 beds	182	46
Commercial/ Retail		1 space/ 40m ² GFA	371m ²	9
Sub-total				55
Stage Two				
Residential	1 Bed	0.4 space/ unit	45	18
	2 Bed	0.7 spaces/ unit	75	53
	3 Bed	1.2 spaces/ unit	15	18
	Visitor	1 space/ 7 units	135	19
Commercial/ Retail		1 space/ 40m ² GFA	2,215m ²	56
Sub-total				164
Stage Three				
Residential	1 Bed	0.4 space/ unit	40	16
	2 Bed	0.7 spaces/ unit	82	57
	3 Bed	1.2 spaces/ unit	38	46
	Visitor	1 space/ 7 units	160	23
Commercial/ Retail		1 space/ 40m ² GFA	827m ²	21
Sub-total				163
Total				382

Based on the car parking rates required by the Roads and Maritime Guide Table 5.1 indicates that the proposed development would be required to provide a total of 382 car parking spaces.

5.1.2. State Environmental Planning Policy (SEPP)

The State Environmental Planning Policy (Gosford City Centre) 2018 also provides development guidelines for proposed developments within the Gosford City Centre, specifically providing separate car parking requirements for commercial and retail components. Table 5.2 shows the car parking requirements as required by the SEPP.

Table 5.2: SEPP car parking requirements

Use	Description	SEPP parking rates	Area/ No.	Parking Requirements
Stage One				
Hotel (Commercial)	1 Bed	1 space/ 75m ² GFA	9,627m ²	128
Retail		1 space/ 40m ² GFA	371m ²	9
Sub-total				137
Stage Two				
Retail		1 space/ 40m ² GFA	1,503m ²	38
Commercial		1 space/ 75m ² GFA	712 m ²	10
Sub-total				48
Stage Three				
Retail		1 space/ 40m ² GFA	441m ²	11
Commercial		1 space/ 75m ² GFA	386m ²	5
Sub-total				16
Total				201

5.1.3. Parking Requirement Comparison

Given the location of 26 Mann Street being 650 metres to Gosford train station providing regular rail services, and the proximity to frequent bus services connecting throughout the Central Coast, the Roads and Maritime guidelines is considered to be more appropriate for parking provision for the proposed development.

Table 5.3 compares the car parking requirements based on Roads and Maritime guidelines and the SEPP rates with the proposed provision.

Table 5.3: Parking requirements and provision

Use	Description	RMS Parking Requirements	SEPP Parking Requirements	Provision
Stage 1				
Hotel	1 Bed or 9,627m ²	46	128	
Commercial/ Retail	371m ²	9	9	
Sub-total		55	137	103
Stage 2				
Residential	1 Bedroom	18		
	2 Bedroom	53		
	3 Bedroom	18		
	Visitor	19		
Commercial/ Retail	2,215m ²	56	48	
Sub-total		164	48	159
Stage 3				
Residential	1 Bedroom	16		
	2 Bedroom	57		
	3 Bedroom	46		
	Visitor	23		
Commercial/ Retail	827m ²	21	16	
Sub-total		163	16	184
Total		382		446

The adequacy of parking provision is discussed in Section 5.4.

5.2. Accessible Parking

The car parking requirements for accessible car parking rates are taken in accordance to the Gosford City DCP 2018 Section 7.4 and provide a minimum of four per cent of the required parking spaces.

Therefore, over the development there would be a total of 18 accessible spaces.

5.3. Motorcycle Parking

The motorcycle parking provision requirements for different development types are specified in the Gosford City DCP 2018. A review of the motorcycle parking requirement rates and the floor area for the proposed development is summarised in Table 5.4.

Table 5.4: Gosford DCP 2013 motorcycle parking requirements

Stage	Land Use	Size	Rate	Total
Stage 1	Hotel	182 Units (182 Spaces)	1/25 Spaces	8
	Commercial/ Retail	371m² (9 spaces)	1/25 Spaces	1
	Sub-total			9
Stage 2	Residential	135 Units	1/15 Units	9
	Commercial/ Retail	2,215m² (56 spaces)	1/25 Spaces	2
	Sub-total			11
Stage 3	Residential	160 Units	1/15 Units	11
	Commercial/ Retail	827m² (21 spaces)	1/25 Spaces	1
	Sub-total			12
Total				32

Table 5.4 indicates that the proposed staged masterplan development requires a total of 32 motorcycle parking spaces.

5.4. Adequacy of Parking Supply

The proposal demonstrates that a total of 446 parking spaces can be provided. 201 spaces can be dedicated to commercial/retail uses in compliance with the SEPP (Gosford City Centre) parking requirement. The residential component of the development will be further reviewed at the detailed DA stage when the apartment mix is finalised.

The proposal provision also demonstrates general compliance with the Roads and Maritime rates (which are applicable to the residential land use per ADG guidance). It is also noted, that should Roads and Maritime rates be applied to all land uses, the proposed provision exceeds the requirements by 64 spaces.

Each stage will have a separate development application submission, the supplementary transport assessments will also consider any opportunities for car sharing initiatives.

5.5. Car Parking Layout Review

The design of the car park layout will be developed further as part of the development applications for each stage. The parking and access arrangements will be designed and reviewed against the requirements of the Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009). This overview assessment and general design advice will include the following:

- bay and aisle widths
- adjacent structures
- circulation roads and ramps
- indicative ramp grades
- height clearances
- parking for persons with disabilities
- motorcycle parking.

5.6. On-Street Parking Impact

5.6.1. Mann Street Port Cochere

The hotel port cochere would require the removal of around three parking spaces on the western side of Mann Street adjacent to the site. It is also proposed to install a coach parking space to the north of the port cochere, on street on the western side of Mann Street resulting in another four on street parking spaces being removed as outlined in Figure 5.1.

Figure 5.1: Mann Street parking removal



Base map: Nearmap August 2019

The parking spaces accommodated on site for the development will replace the removal of these parking spaces on Mann Street.

6. SUSTAINABLE TRANSPORT INFRASTRUCTURE

06

6.1. Bicycle Parking

Bicycle parking is increasingly being provided as part of developments to encourage bicycle journeys in the local area. As an example,³ of the 1,299 people who live in Travel Zone 5334, 649 (50 per cent) also work in the Gosford area. Of these 649 individuals, 64 per cent choose to drive. A work destination in the Gosford area could imply that these people would live within 10 kilometres of their work and would be well-suited to cycling trips.

Bicycle parking is seldom effective in isolation. It needs to be supported by other facilities such as change rooms (for employees) and a safe cycling network (see Section 6.4).

Table 6.1: Gosford City DCP (2018) bicycle parking requirements

Stage	Land Use	Size	Rate	Total
Stage 1	Hotel	182 Beds	No requirement	-
	Commercial/ Retail	371m²	1/200m² NLA (employees)	2 employees
			1/750m² NLA (visitors)	1 visitor
	Sub-total			1 visitor 2 employees
Stage 2	Residential	135 Units	1/3 units (residents)	45 residents
			1/12 units (visitors)	11 visitors
	Commercial/ Retail	2,215m²	1/200m² NLA (employees)	11 employees
			1/750m² NLA (visitors)	3 visitors
	Sub-total			45 residents 14 visitors 11 employees
Stage 3	Residential	160 Units	1/3 units (residents)	54 residents
			1/12 units (visitors)	14 visitors
	Commercial/ Retail	827m²	1/200m² NLA (employees)	4 employees
			1/750m² NLA (visitors)	1 visitor
	Sub-total			54 residents 15 visitors 4 employees
Total				99 residents 30 visitors 17 employees

Table 6.1 indicates that a total of 146 bicycle spaces are required for the entire development.

6.2. End of Trip Facilities

The Gosford City DCP 2018 outlines the requirements for commercial and retail development providing employment for 20 persons or more, to provide adequate change and shower facilities for cyclists. Facilities should be conveniently located close to bike storage areas and will be accommodated within the detail design for each stage.

³ From BTS JTW Explorer, see Section 3.8

6.3. Sustainable Transport

The Gosford City Masterplan provides a development framework to guide the revitalisation of Gosford City Centre. It proposes a large increase in population and employment and provides an opportunity to integrate cycling into the city centre.

In the Gosford City Centre urban renewal area, a permeable network for pedestrians, cyclists and public transport will be created to enable the movement of people, not cars. Where achievable, localised pedestrian, bicycle and public transport only roads will be used to achieve a fully permeable, safe environment for residents, workers and visitors.⁴

6.4. Walking and Cycling Network

Pedestrian infrastructure is well-established surrounding the site, with most streets having footpaths, particularly oriented towards Gosford town centre.

The proposed masterplan for this site focuses on pedestrian connectivity through the site by providing attractive links from the CBD (Mann Street) through to Baker Street, the Gosford City Park and the waterfront.

The cycling network for Gosford has been identified in Gosford Bike Strategy 2014 as shown in Figure 6.1.

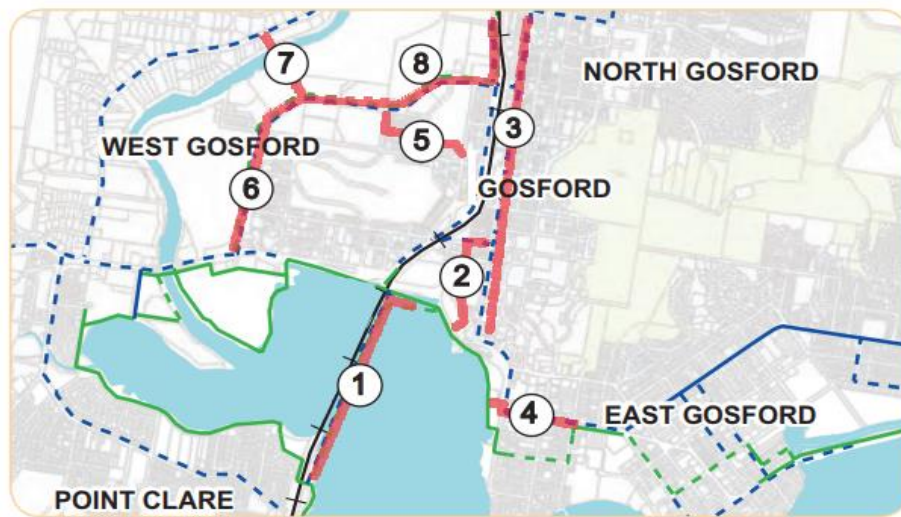
⁴ <http://search.gosford.nsw.gov.au/documents/00/19/69/78/0019697882.pdf>, pg. 27, accessed 8 December 2017

Figure 6.1: Council's proposed cycling infrastructure at Gosford

Work No.	Description	Time frame
1	Gosford to Point Clare waterfront cycleway	Medium-Long-term
2	Connection between waterfront and Mann Street, along Vaughan Avenue, Baker Street Boulevard and Donnison Street	Short-term
3	Cycleway along Mann Street between Dane Drive and Etna Street	Short-term
4	Widen cycleway from East Gosford to Gosford Waterfront along York Street	Short-term
5	Racecourse Road to Holden Street via Sinclair Street	Short-term
6	Create cycleway Racecourse Road between Faunce Street West and Dane Drive	Short-term
7	Cycleway across bridge connecting to the West Gosford Industrial Estate	Medium-term
8	Cycleway between intersection of Racecourse Road / Faunce Street West, continuing north along Showground Road	Short-term

Figure 4.7 -

**Recommended
Works (Strategic
Objective Priority 1)**



For the purposes of this diagram, short term is to 2016, medium term is to 2021 and long term is to 2036
Source: <http://search.gosford.nsw.gov.au/documents/00/19/69/78/0019697882.pdf>, accessed 8 December 2017

6.5. Public Transport

The site is well-served by public transport as previously described in Section 3.6. TfNSW's Future Transport Plan (Section 2.1.1) outlines that Gosford will continue to establish itself as a satellite city. Future connections to the Greater Sydney should be established through 'fast transit' and potentially high speed rail. Rail services are expected to operate at a 'turn up and go' frequency, indicating that customers can reasonably expect services without looking at timetables. Furthermore, the Gosford City Centre TMAP (Section 2.2.1) outlines the intent to improve the bus network east-west connectivity in Gosford and surrounding areas.

7. LOADING & WASTE COLLECTION RESPONSE/ ASSESSMENT

07

7.1. Proposed Loading and Waste Collection Arrangements

A proposed loading area is located west of Stage 1. The loading dock will be constructed as part of the first stage developed and will service the entire development.

Access to this loading area is provided through the existing driveway connected to the new extension of Baker Street. The loading bay has been designed to cater for up to 12.5 metres long heavy rigid vehicles, the loading dock will include a turntable to ensure vehicles can enter and exit in a forward direction. The design will be developed further as part of a future development application to accommodate swept path assessment improvements. .

Facilities are also provided for waste collection and deliveries/ despatching associated with the bulky goods retail and day-to-day servicing demands of the residential uses, including removalist trucks.

8. TRAFFIC IMPACT ASSESSMENT

08

8.1. Traffic Generation

8.1.1. Design Rates

Traffic generation estimates for the proposed development have been sourced from the Roads and Maritime *Guide to Traffic Generating Developments* (2002) and Roads and Maritime Technical Direction (TDT 2013/04). The Guide has until recently, been referenced when assessing the future traffic generation for a given development. The Technical Direction provides updated guidance based on more recent surveys.

The actual commercial/retail component is still being determined and will be assessed according to its use in the individual stage development applications. For the purpose of this concept masterplan assessment a speciality retail traffic generation rate has been used for both the commercial/retail components, this is a conservative assessment as the speciality retail rate is higher than commercial.

Estimates of peak hour traffic volumes for both the AM and PM peaks resulting from the proposal are set out in Table 8.1.

Table 8.1: Traffic generation estimates

Stage	Land Use	Size	AM		PM	
			Rate	Traffic Generation	Rate	Traffic Generation
Stage 1	Hotel	182 Beds	0.40/ Bed	73	0.40/ Bed	73
	Commercial/ Retail	371m²	4.6/100 m²	17	4.6/100 m²	17
	Sub-total			90		90
Stage 2	Residential	135 Units	0.53/Unit	72	0.32/Unit	43
	Commercial/ Retail	2,215m²	4.6/100 m²	102	4.6/100 m²	102
	Sub-total			174		145
Stage 3	Residential	160 Units	0.53/Unit	85	0.32/Unit	51
	Commercial/ Retail	827m²	4.6/100 m²	38	4.6/100 m²	38
	Sub-total			123		89
Total				387		324

Table 8.1 indicates that the proposed concept masterplan could generate around 387 vehicle movements during the morning peak hour and 324 vehicle movements during the evening peak hour on a typical weekday.

8.2. Background Traffic Growth

To project the traffic conditions for the year that the entire site is expected to be completed, a background traffic growth of two per cent has been applied to the existing traffic volumes. This is consistent with the annual growth rate used by the Cardno report for the commercial building which was approved by Roads and Maritime.

The future base scenarios also include surrounding approved developments considered in the Cardno report. The approved developments included are ATO building, Union Hotel and Waterside mixed-use development.

8.3. Distribution and Assignment

This section provides potential future traffic conditions on the surrounding road network. For the purpose of assessing the development impact the year of completion is expected to be in 2022.

A 2022 and 2032 base model scenario have been modelled to determine the road network operation at the year of completion and also a ten-year horizon.

For this assessment it has been assumed that Baker Street remain as two-way between Georgiana Terrace and the site access and that the proposed extension of Baker Street through to Vaughan Avenue would be one-way in the southbound direction. All Stage 1 generated traffic is assumed to access the site through the Georgiana Terrace and Baker Street intersection, whereas Stages 2 and 3 would enter and exit through the proposed driveway on Vaughan Avenue.

The directional distribution and assignment of traffic generated by the proposed development will be influenced by several factors, including:

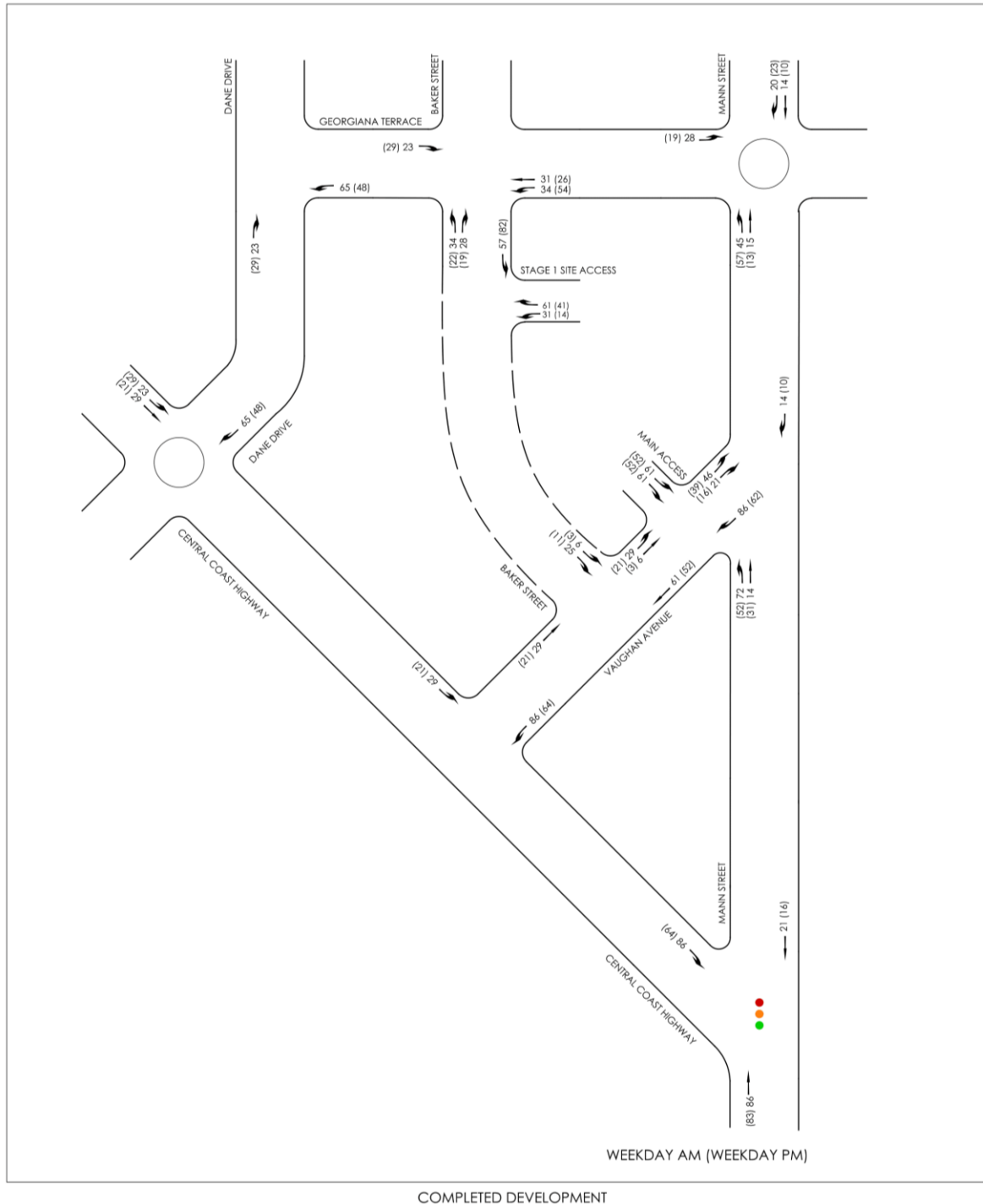
- journey to work data for the areas surrounding the site and nearby precincts in Gosford to identify resident and employee direction of travel
- configuration of the arterial road network near the site
- existing operation of intersections providing access between the local and arterial road network
- configuration of access points to the site.

Having consideration to the above, for the purposes of estimating vehicle movements, the following directional distributions have been assumed:

- north 20 per cent
- west 30 per cent
- east 50 per cent.

Figure 8.1 has been prepared to show the estimated increase in turning movements near the site following the completed site development.

Figure 8.1: AM/ PM peak hour site generated traffic volumes (completed development)



8.3.1. Intersection Performance

2022 Base Model (Including Surrounding Approved Developments)

The impacts on the surrounding road network during peak periods for the 2022 growth scenarios when including the surrounding approved developments considered in the Cardno report have been assessed. The approved developments included are ATO building, Union Hotel and Waterside mixed-use development. The results are shown in Table 8.2.

Table 8.2: 2022 base (with surrounding approved development)

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Georgiana Terrace/ Dane Drive	AM	0.37	20	13	B
	PM	0.34	12	12	B
Georgiana Terrace/ Baker Street	AM	0.23	26	6	B
	PM	0.48	31	20	C
Georgiana Terrace/ Mann Street	AM	0.34	9	16	A
	PM	0.10	12	4	A
Mann Street/ Vaughan Avenue	AM	0.02	21	1	B
	PM	0.04	15	1	B
Central Coast Highway/ Dane Drive	AM	0.97	63	174	E
	PM	2.50	>200	>500	F
Central Coast Highway/ Mann Street	AM	0.77	15	181	B
	PM	0.93	23	268	B

Table 8.2 indicates that all the analysed intersections will continue to operate well with spare capacity except for the intersection of the Central Coast Highway and Dane Drive which in the PM is operating over capacity with significant delays particularly to Dane Drive vehicles accessing the roundabout.

2022 Base Model + Completed Development

It is already apparent from the 2022 modelling scenarios that the intersection of the Central Coast Highway and Dane Drive is operating over capacity during the PM peak and therefore to continue to apply the annual growth rate beyond 2022 is futile. Based on this the 2022 modelling scenarios with development and 2032 modellings exclude the Central Coast Highway and Dane Drive roundabout.

The impact of the surrounding road network when the development is completed in 2022 is shown in Table 8.3.

Table 8.3: 2022 base + completed development

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Georgiana Terrace/ Dane Drive	AM	0.43	23	19	B
	PM	0.39	14	15	A
Georgiana Terrace/ Baker Street	AM	0.26	32	7	C
	PM	0.52	37	23	C
Georgiana Terrace/ Mann Street	AM	0.40	9	19	A
	PM	0.11	13	5	A
Mann Street/ Vaughan Avenue	AM	0.17	25	3	B
	PM	0.11	17	2	B
Central Coast Highway/ Mann Street	AM	0.86	18	225	B
	PM	0.96	33	467	C

Table 8.3 indicates that all intersections surrounding the development site will continue to operate satisfactorily with spare capacity.

2032 Base Model (Including Surrounding Approved Developments)

Analysis of the expected operation of the surrounding road network for 2032 has been undertaken to understand the ten-year horizon. This model includes the background growth of two per cent per year to 2032 and includes the surrounding approved developments as per the 2022 base model.

The operation of each intersection is shown in Table 8.4.

Table 8.4: 2032 base (with surrounding approved development)

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Georgiana Terrace/ Dane Drive	AM	0.51	34	23	C
	PM	0.42	17	17	B
Georgiana Terrace/ Baker Street	AM	0.30	34	8	C
	PM	0.63	41	32	C
Georgiana Terrace/ Mann Street	AM	0.44	11	23	A
	PM	0.15	14	6	A
Mann Street/ Vaughan Avenue	AM	0.05	33	1	C
	PM	0.06	20	1	B
Central Coast Highway/ Mann Street	AM	0.90	23	337	B
	PM	1.11	160	>500	F

Table 8.4 indicates that the intersections of Georgiana Terrace with Dane Drive, Baker Street and Mann Street and the intersection of Mann Street and Vaughan Avenue will continue to operate satisfactorily with some spare capacity. By 2032 it is noted that the intersection of the Central Coast Highway and Mann Street will be operating over capacity in the PM peak with delays occurring to Mann Street and the northwest approach of the Central Coast Highway.

As previously discussed under the 2022 analysis, the Central Coast Highway and Dane Drive roundabout would continue to operate over capacity without any improvements past 2022 in the PM peak.

2032 Base Model + Completed Development

The impact of the surrounding road network when the development is completed is shown in in Table 8.5.

Table 8.5: 2032 base + completed development

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Georgiana Terrace/ Dane Drive	AM	0.59	39	33	C
	PM	0.47	18	22	B
Georgiana Terrace/ Baker Street	AM	0.34	41	10	C
	PM	0.69	50	38	D
Georgiana Terrace/ Mann Street	AM	0.51	12	30	A
	PM	0.15	14	7	A
Mann Street/ Vaughan Avenue	AM	0.31	48	6	D
	PM	0.16	23	3	B
Central Coast Highway/ Mann Street	AM	0.97	37	>500	C
	PM	1.14	203	>500	F

Table 8.5 indicates that the intersections of Georgiana Terrace with Dane Drive and Mann Street will continue to operate satisfactorily with some spare capacity. However, the intersection of Georgian a Terrace and Baker Street will be operating near capacity in the PM peak at a level of service D, while the intersection of Mann Street and Vaughan Avenue will be also be operating with higher delays and a level of service D. As with the 2032 base scenario the Central Coast Highway and Mann Street intersection will be operating over capacity in the PM peak with delays occurring to Mann Street and the northwest approach of the Central Coast Highway.

As previously discussed under the 2022 analysis the Central Coast Highway and Dane Drive roundabout would continue to operate over capacity without any improvements past 2022 in the PM peak.

8.3.2. Traffic Impact Summary

The Central Coast Highway and Dane Drive intersection, as per existing conditions, continues to operate over capacity at a level of service F during the 2022 and 2032 scenarios (pre and post development), indicating that to accommodate the existing and forecasted growth in the area improvements will be required to the state and local network to improve intersection operation, particularly in the PM peak periods.

The intersection of the Central Coast Highway and Mann Street continues to operate at the same level of service (C or higher) as per the existing conditions for the 2022 (pre and post development) scenario. However, analysis indicates that the intersection would be operating over capacity in the 2032 base scenario as well as at the completion of the development.

8.4. Road Network Improvements

8.4.1. Vaughan Avenue and Mann Street Intersection

To improve sight distance and operation at the intersection of Vaughan Avenue and Mann Street it is recommended that the 'No Stopping' distances be increased as outlined in Figure 8.2.

Figure 8.2: Proposed extension of 'No Stopping' at Vaughan Avenue / Mann Street intersection



By 2032, forecasted traffic will be impacting the operation of the Central Coast Highway near Dane Drive and at Mann Street. Consideration by Roads and Maritime and Council should be given to infrastructure improvements such as those recommended in the Cardno Report to accommodate the forecasted growth in the surrounding area.

8.5. Baker Street Extension to Vaughan Avenue

It is understood that the Baker Street extension is intended to be a one-way shared zone through to Vaughan Avenue. The section recently constructed between Georgiana Terrace and the commercial building is currently two-way and is not designated as a shared zone.

It is recommended that the section of the Baker Street already constructed as two way remain and that the proposed extension from the recently constructed section through to Vaughan Avenue be a one-way shared zone. Retaining the northern section as two-way would result in reducing the number of vehicles within the shared zone area.

Baker Street to the south of the site access is ideally suited for a one-way southbound shared zone as it would serve as a pedestrian connection between Gosford City Park to the west and the site's ground floor retail spaces fronting Baker Street with pedestrian connectivity through to Mann Street. This shared zone would greatly improve pedestrian permeability to both the park and the site while also providing an active frontage along Baker Street to complement the retail activities opposite the park.

9. CONSTRUCTION TRAFFIC IMPACT

09

9.1. Preliminary Construction Traffic Management Plan

This section provides an overview to the expected construction traffic management, a full Construction Traffic Management Plan (CTMP) will be completed by the contractor prior to commencing work on site.

9.1.1. Construction Traffic Management

The preparation of the preliminary CTMP has been completed on the basis of the following aspects which are described in more detail below:

- overall principles of construction traffic management
- staging schedule
- work hours
- construction traffic generation
- truck routes
- construction traffic impact
- potential mitigation measures during construction.

9.1.2. Overall Principles of Construction Traffic Management

The overall principles of traffic management during construction activity include:

- minimising the impact on pedestrian movements
- maintaining appropriate public transport access
- minimising the impact to existing traffic on adjacent roads and intersections
- minimising the loss of on-street parking
- maintaining access to/ from any adjacent properties
- restricting construction vehicle movements to designated routes to/ from the site
- managing and controlling construction vehicle activity near the site
- ensuring construction activity is carried out in accordance with Council's approved hours of works.

9.1.3. Staging Schedule

The development is expected to be constructed as follows:

- Eastern building (Hotel mixed use) - 2020
- Southern building (Residential mixed use) - 2021
- Northern building (Residential mixed use) - 2022 – 2023.

With each stage being split into sub-stages.

- Each building is expected to take 20 – 22 months to complete construction, with a preliminary estimation of timing of:
 - Structure
 - Façade
 - Fit out
 - Car park.

9.1.4. Work Hours

Construction work would be undertaken in accordance to development consent conditions. The typical work hours are expected to be:

- Monday - Saturday: 7am to 5pm
- Sundays and public holidays: No work.

The contractor will be responsible for instructing and controlling all sub-contractors regarding the hours of work. To minimise disruption to daily traffic and disturbance to surrounding landowners and businesses. It may be necessary to carry out some work outside of these hours, if this occurs, prior notice would be given to the community if any works are planned to be undertaken outside typical hours. Such activities would include delivery of cranes, large plant or equipment to the site.

9.1.5. Worker Induction

All workers and subcontractors engaged on-site would be required to undergo a site induction. The induction should include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, Work Health and Safety (WHS), driver protocols and emergency procedures.

Any workers required to undertake works or traffic control within the public domain would be suitably trained and covered by adequate and appropriate insurances.

9.1.6. Site Access

All site access will be from the existing temporary access provided on Vaughan Avenue.

9.1.7. Heavy Vehicle Generation

Heavy vehicle traffic would mainly be generated by activities associated with the following:

- Delivery of construction materials
- Delivery and removal of construction equipment and machinery.

The number of daily truck movements will vary depending on the works being conducted on the specific day or timeframe in the construction programme. At periods where timing is critical (e.g. during concrete pouring) and when several stages of construction occur concurrently. The worst-case assessment is estimated as 60 – 70 truck movements per day. This would result in up to 14 truck movements in the peak hour, conservatively assuming 20 per cent of daily generation arriving within the peak periods. On average, typically 10 – 20 truck movements are expected per day.

9.1.8. Light Vehicle Generation

Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site.

It is expected in the worst-case scenario there could be up to 200 construction workers on any one day, with an average of 80 to 120 workers. Construction workers will be encouraged to carpool to ensure that parking can be accommodated wholly within the site. Based on an assumption that 15 per cent carpool it is expected that 170 light vehicles per day could be expected during peak construction. On average 68 to 102 vehicles arrive at the site per day. It is expected that all workers would arrive to the site prior to 7am and typically leave around 4pm and therefore avoid the AM and PM peak periods.

9.1.9. Summary of Construction Traffic Generation

A range of construction vehicles are likely to be generated by the proposed construction activities these would include:

- larger equipment transport vehicles for the delivery and pickup of equipment and materials
- medium rigid vehicles for export and input of required materials
- small and medium rigid vehicles, vans and couriers for materials delivery
- light vehicles for employees to travel to and from the site.

The estimated number of construction vehicles per day is detailed in Table 9.1.

Table 9.1: Daily construction traffic volumes

Vehicle type	Total number of vehicles per day (on average)	Total peak vehicle movements per day (on average)	Total peak vehicle movements per hour
Light vehicles	102	170	Outside of Peak hour
Heavy vehicles/ Trucks	20	70	14
Total	122	240	14

Table 9.1 shows that during peak construction, there could be up to a total of 240 vehicle movements (120 arriving and 120 departing the site per day). 14 of these movements are expected to occur within the peak hour.

9.1.10. Construction Traffic Impact

The analysis of the road network surrounding the development site been assessed based on the peak expected traffic generation and background traffic growth for the site once it is fully operational. The proposed completed development traffic generation as outlined in Table 8.1 is greater than the expected worst-case during construction and therefore no further modelling is required.

Generally, the majority of construction workers finish prior to the PM road network peak and therefore it is expected that the road network would continue to operate well throughout the construction period.

A construction traffic management plan will be prepared by the contractor prior to works commencing on-site.

10.CONCLUSION

10

10.1. Summary

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i. The proposal demonstrates that a total of 446 parking spaces can be provided. 201 spaces can be dedicated to commercial/retail uses in compliance with the SEPP (Gosford City Centre) parking requirement. The residential component of the development will be further reviewed at the detailed DA stage when the apartment mix is finalised.
- ii. The proposal provision also demonstrates general compliance with the Roads and Maritime rate where should the Roads and Maritime rates be applied to all land uses, the proposed provision exceeds the requirements by 64 spaces.
- iii. The residential component of the development will be further reviewed at detailed DA stage when the apartment mix is finalised.
- iv. The proposed parking layout is required to comply with the dimensional requirements as set out in the Australian/New Zealand Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009). Further assessment will be completed as part of the individual stage development applications.
- v. 146 bicycle parking spaces and 32 motorcycle parking spaces are required for the development based on DCP requirements.
- vi. One loading area is provided to the completed development, this will be constructed as part of the first stage and located west of Stage 1. The loading area will be designed to cater for up to 12.5-metre-long heavy rigid vehicles, to enter and exit in a forward direction.
- vii. The site in its entirety is expected to generate up to 387 and 324 vehicle movements during the AM and PM peaks respectively.
- viii. A construction management plan will be completed by the contractor prior to commencement of work.
- ix. Analysis of the surrounding road network indicates there are capacity concerns where the local road network connects to the state road network in the future scenarios without the inclusion of the proposed development.
- x. In 2022 the traffic generated by the development would not provide an adverse impact to the expected operation of the surrounding road network.
- xi. With or without the proposed development, infrastructure improvements are required for connections to the Central Coast Highway to create capacity to allow for future growth.
- xii. It is recommended that the section of Baker Street recently constructed be retained as two way and the proposed extension connecting through to Vaughan Avenue be designed as a one-way shared zone for improved pedestrian connectivity and to activate the public domain in the area. Retaining the existing section south of Georgiana Terrace to the site access as two-way would assist in reducing the number of vehicles within the proposed shared zone area.

A. SURVEY RESULTS

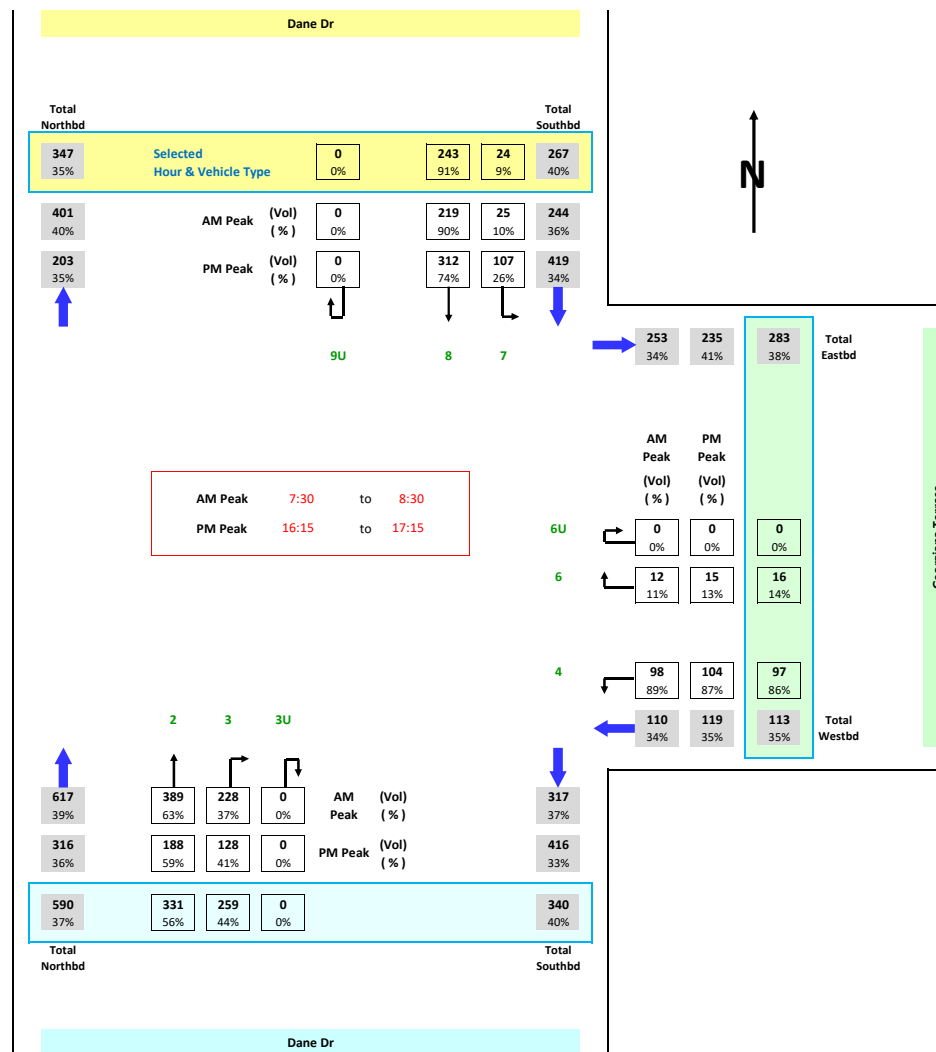


Job No. : N3789
Client : GTA
Suburb : Manns Street
Location : 1. Dane Dr / Georgiana Terrace

Day/Date : Tue, 28th Nov 2017
Weather : Fine
Description : Classified Intersection Count
Intersection Diagram



Hour Starting	Vehicle Type
7:45	All Vehicles

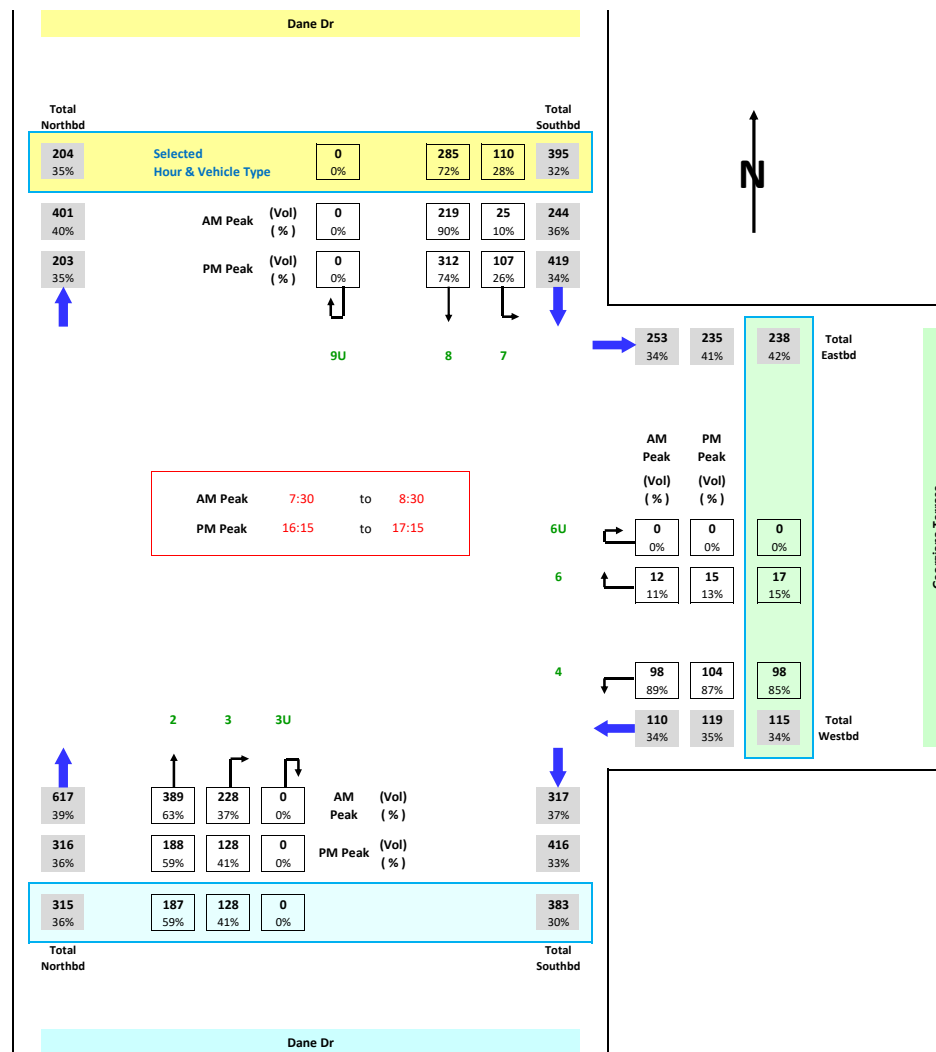


Job No. : N3789
Client : GTA
Suburb : Manns Street
Location : 1. Dane Dr / Georgiana Terrace

Day/Date : Tue, 28th Nov 2017
Weather : Fine
Description : Classified Intersection Count
Intersection Diagram



Hour Starting	Vehicle Type
16:30	All Vehicles

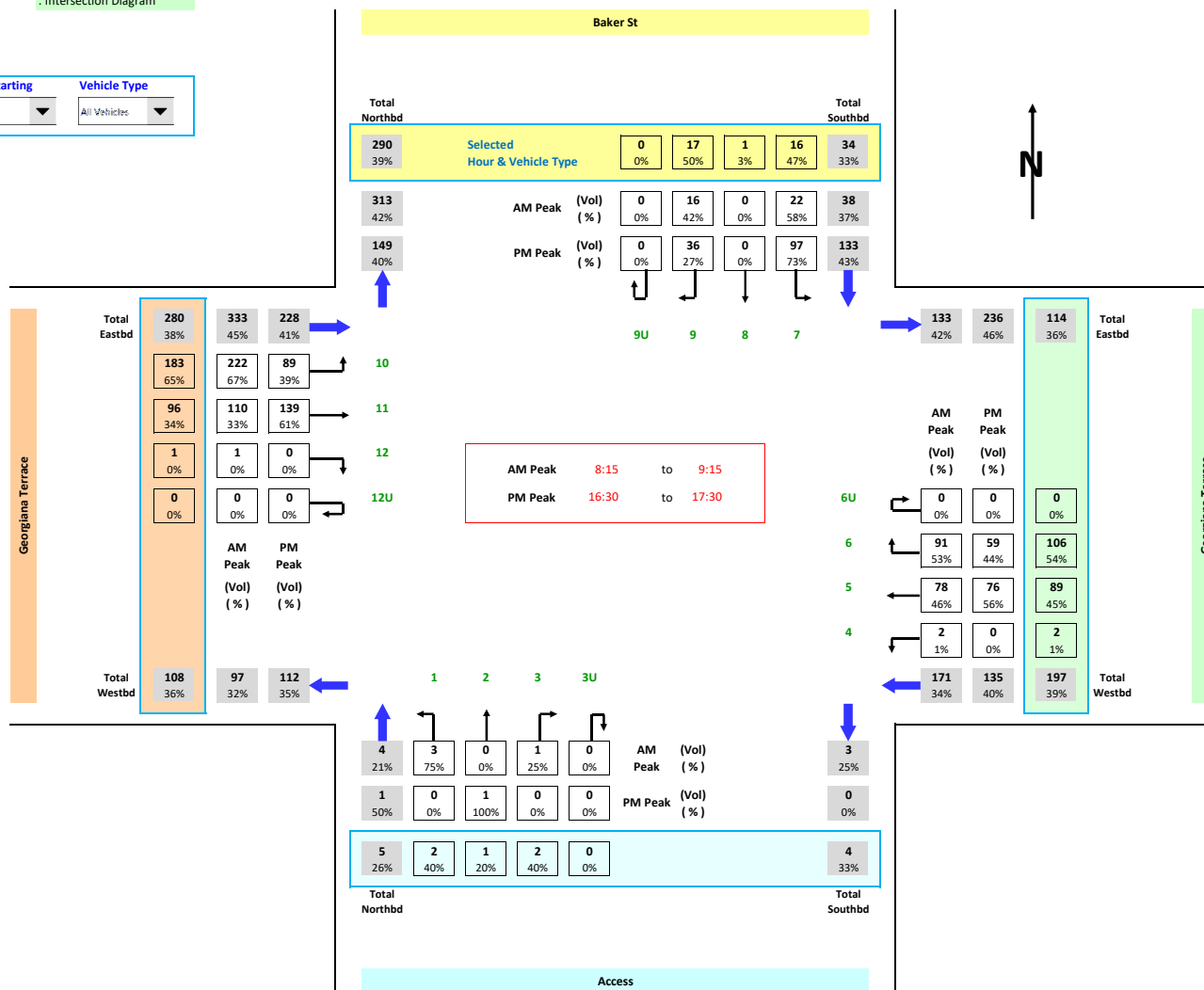


Job No. : N3789
 Client : GTA
 Suburb : Manns Street
 Location : 2. Baker St / Georgiana Terrace / Access

Day/Date : Tue, 28th Nov 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting: 7:45
 Vehicle Type: All Vehicles

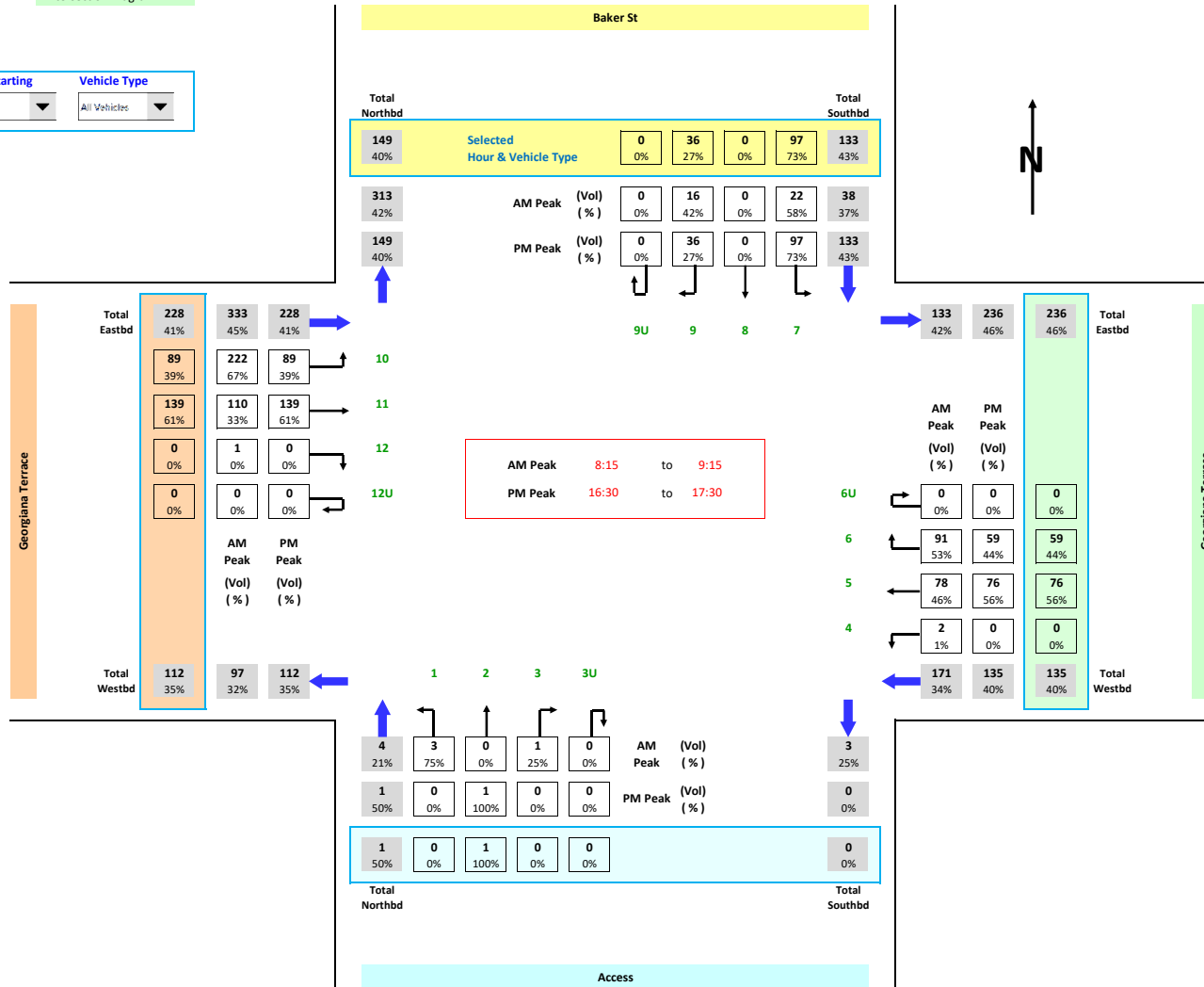


Job No. : N3789
 Client : GTA
 Suburb : Manns Street
 Location : 2. Baker St / Georgiana Terrace / Access

Day/Date : Tue, 28th Nov 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting: 16:30
 Vehicle Type: All Vehicles



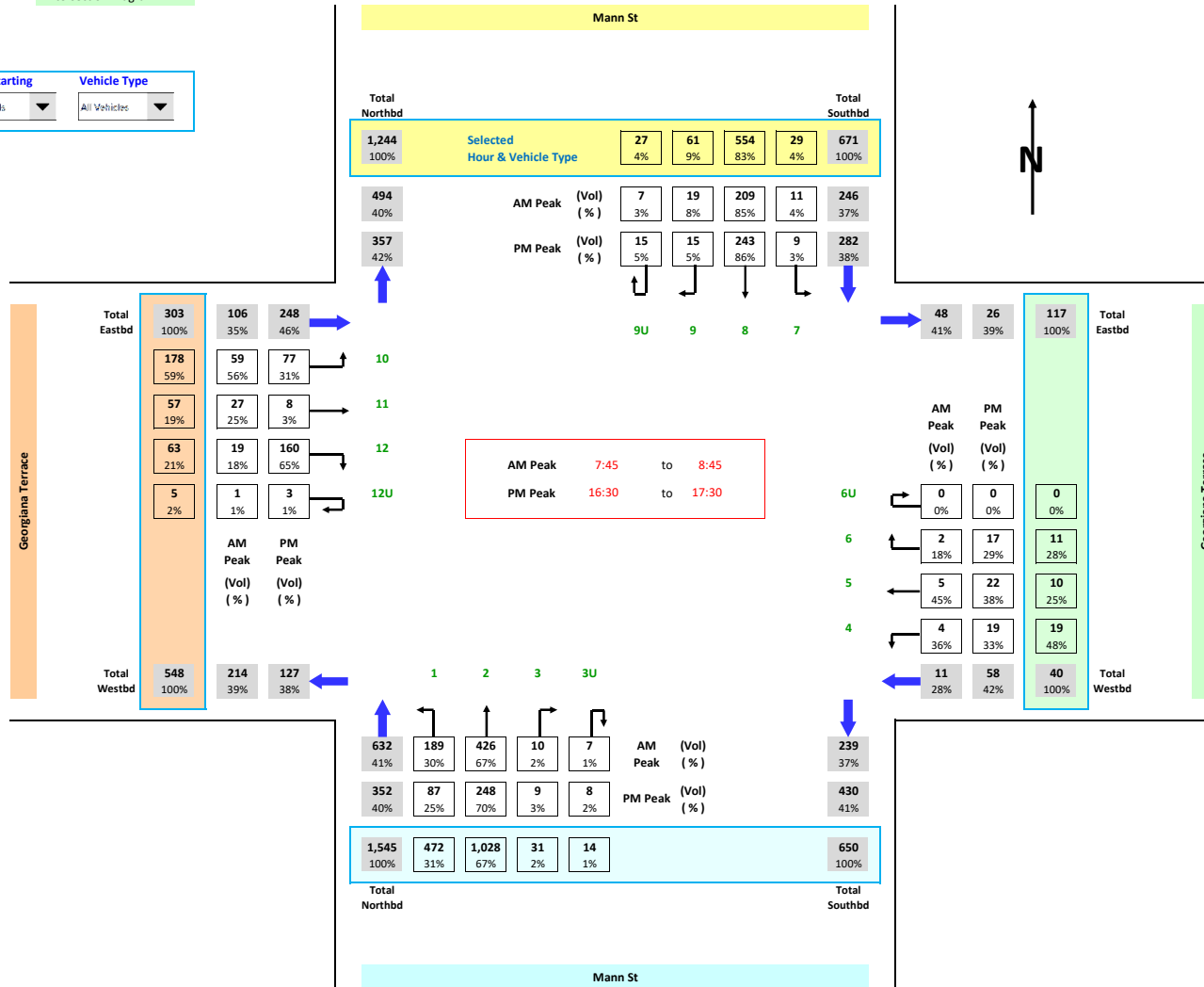
Job No. : N3789
Client : GTA
Suburb : Manns Street
Location : 3. Georgiana Terrace / Mann St

Day/Date : Tue, 28th Nov 2017
Weather : Fine
Description : Classified Intersection Count
Intersection Diagram



Hour Starting
AM Totals

Vehicle Type
All Vehicles



Job No. : N3789
Client : GTA
Suburb : Manns Street
Location : 4. Vaughan Ave / Mann St

Day/Date : Tue, 28th Nov 2017
Weather : Fine
Description : Classified Intersection Count
Intersection Diagram

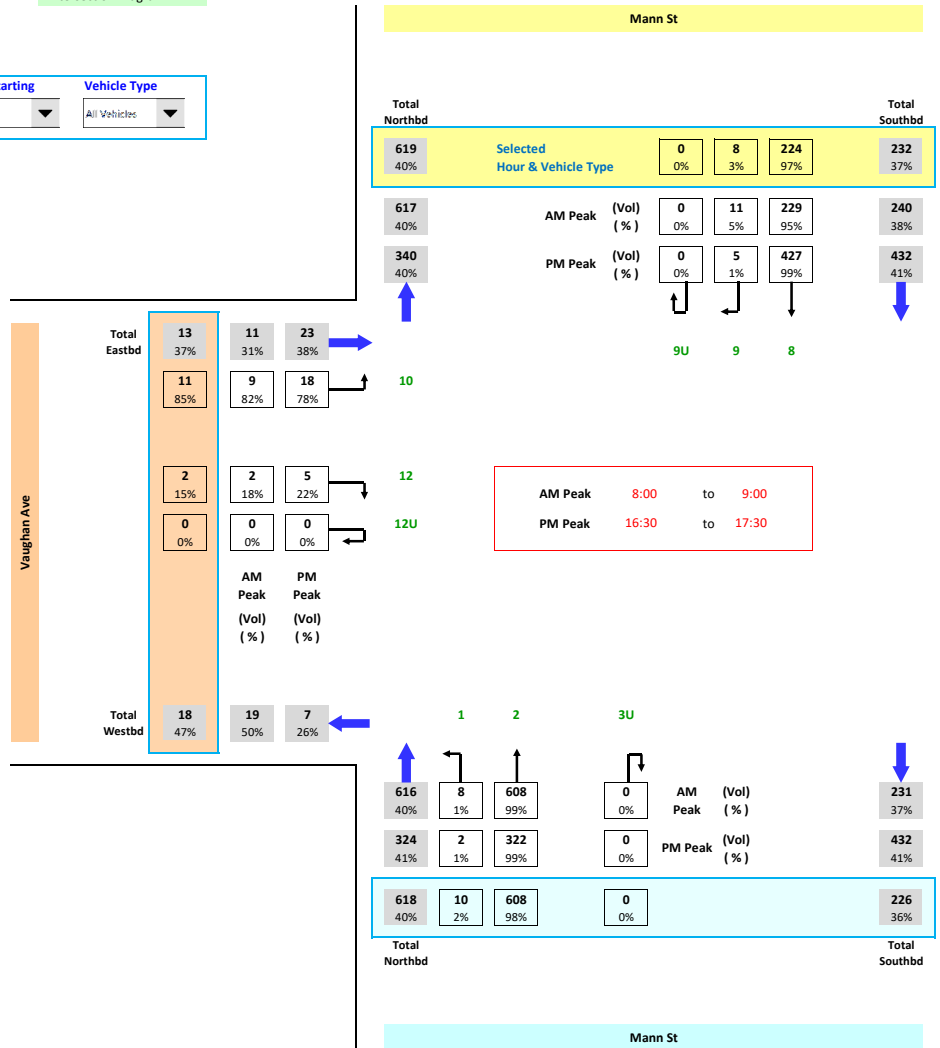


Hour Starting

7:45

Vehicle Type

All Vehicles

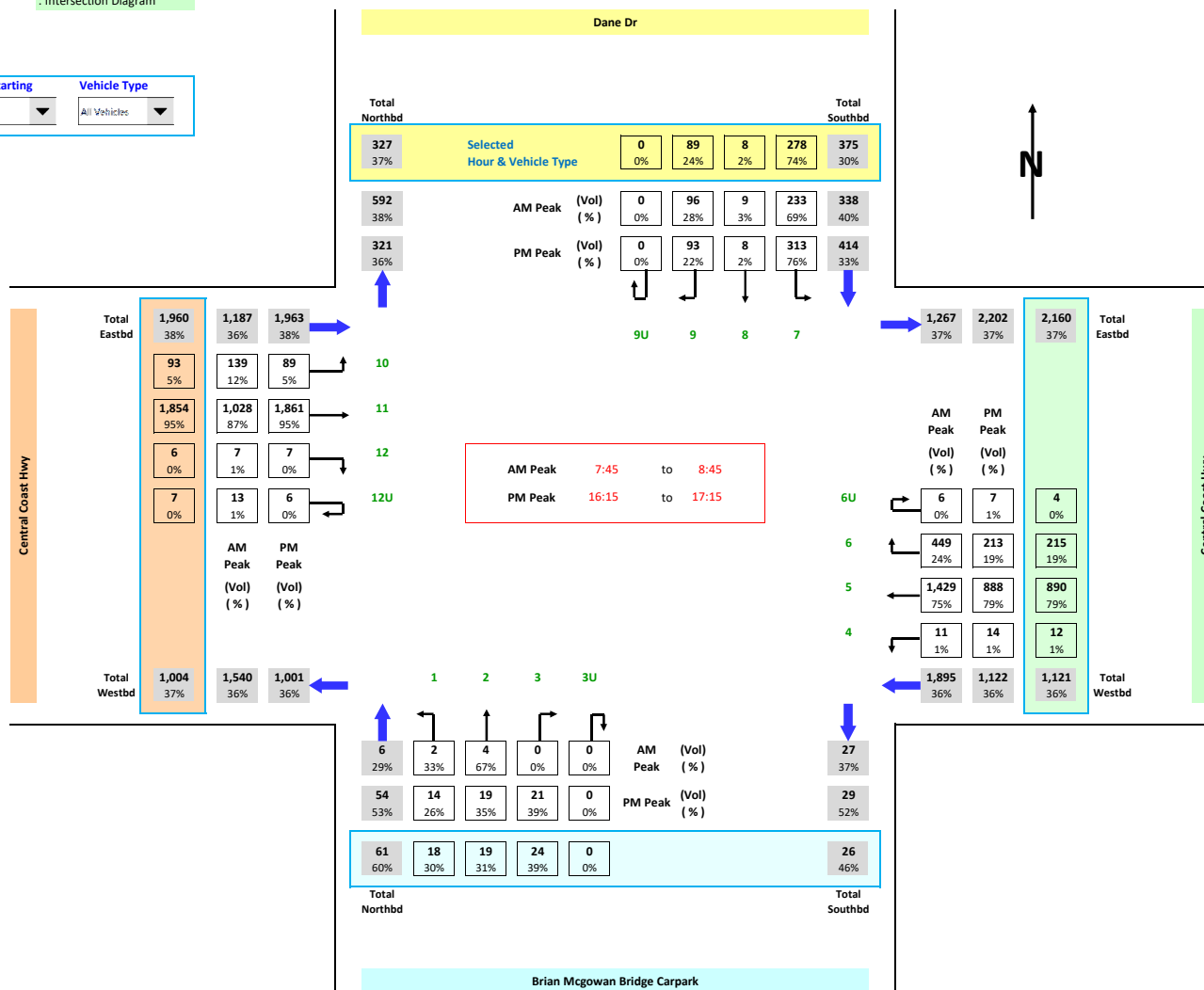


Job No. : N3789
 Client : GTA
 Suburb : Manns Street
 Location : 5. Dane Dr / Central Coast Hwy / Bridge Carpark

Day/Date : Tue, 28th Nov 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting Vehicle Type

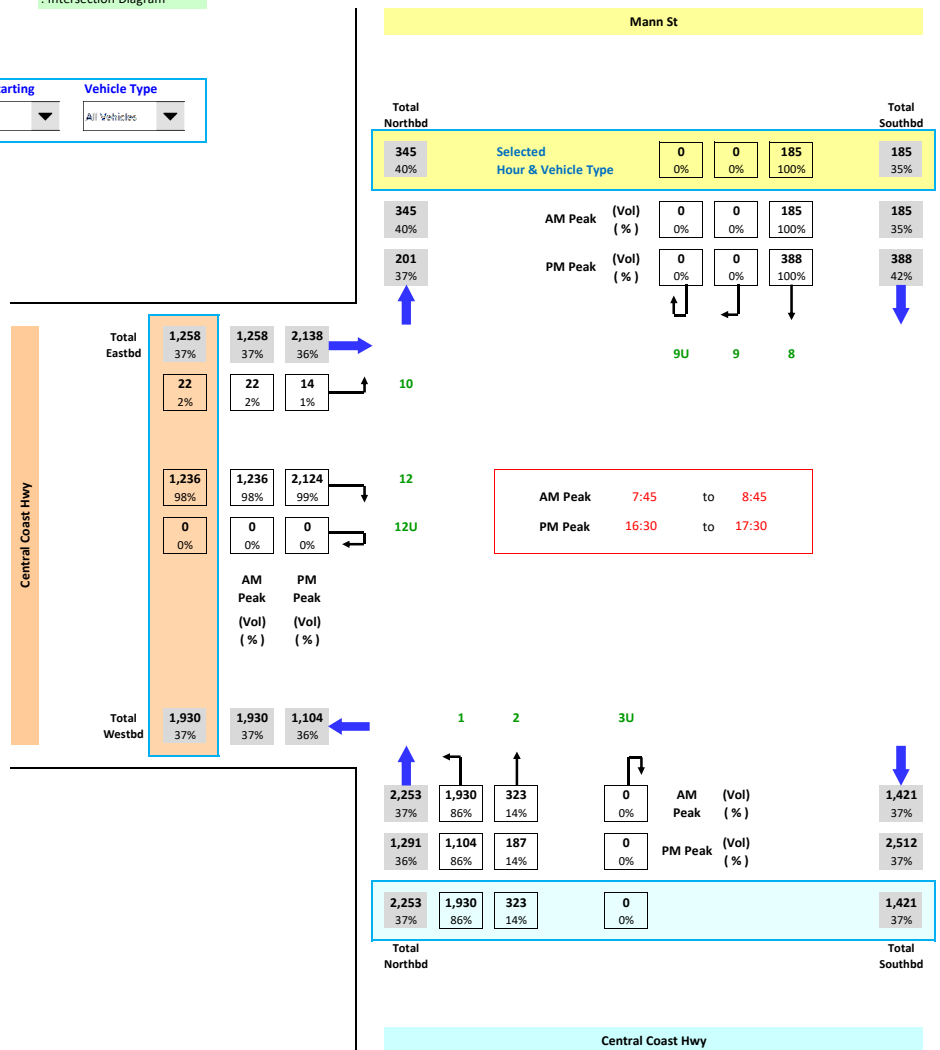


Job No. : N3789
Client : GTA
Suburb : Manns Street
Location : 6. Mann St / Central Coast Hwy

Day/Date : Tue, 28th Nov 2017
Weather : Fine
Description : Classified Intersection Count
Intersection Diagram



Hour Starting: 7:45
Vehicle Type: All Vehicles



B. SIDRA INTERSECTIONS RESULTS

B

MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv AM]

Georgiana Tce and Dane Dr
2022 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	365	1.2	0.504	5.6	LOS A	4.8	33.9	0.53	0.51	25.4
3	R2	416	0.6	0.504	7.3	LOS A	4.8	33.9	0.53	0.51	34.3
Approach		781	0.9	0.504	6.5	NA	4.8	33.9	0.53	0.51	29.5
East: Georgiana Tce (E)											
4	L2	261	0.9	0.368	5.4	LOS A	1.9	13.4	0.48	0.67	31.3
6	R2	34	0.0	0.368	20.3	LOS B	1.9	13.4	0.48	0.67	27.8
Approach		295	0.8	0.368	7.1	LOS A	1.9	13.4	0.48	0.67	30.7
North: Dane Drive (N)											
7	L2	39	2.3	0.161	1.1	LOS A	0.0	0.0	0.00	0.03	25.8
8	T1	268	2.5	0.161	0.0	LOS A	0.0	0.0	0.00	0.03	24.9
Approach		307	2.5	0.161	0.1	NA	0.0	0.0	0.00	0.03	25.1
All Vehicles		1383	1.2	0.504	5.2	NA	4.8	33.9	0.40	0.44	28.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv PM]

Georgiana Tce and Dane Dr
2022 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	206	1.7	0.353	2.3	LOS A	2.4	16.9	0.56	0.46	45.9
3	R2	277	0.0	0.353	7.5	LOS A	2.4	16.9	0.56	0.46	35.7
Approach		483	0.7	0.353	5.3	NA	2.4	16.9	0.56	0.46	39.4
East: Georgiana Tce (E)											
4	L2	281	0.3	0.339	5.4	LOS A	1.7	11.8	0.49	0.67	32.3
6	R2	30	0.0	0.339	12.3	LOS A	1.7	11.8	0.49	0.67	37.8
Approach		311	0.3	0.339	6.1	LOS A	1.7	11.8	0.49	0.67	32.9
North: Dane Drive (N)											
7	L2	144	0.0	0.240	5.5	LOS A	0.0	0.0	0.00	0.19	52.8
8	T1	315	1.1	0.240	0.0	LOS A	0.0	0.0	0.00	0.19	54.5
Approach		459	0.7	0.240	1.7	NA	0.0	0.0	0.00	0.19	53.8
All Vehicles		1253	0.6	0.353	4.2	NA	2.4	16.9	0.34	0.41	41.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 2 [2 Georgiana Tce and Baker St AM]

Georgiana Tce and Baker Street
2022 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	15	1.5	0.056	4.3	LOS A	0.2	1.3	0.49	0.61	27.3
2	T1	10	7.7	0.056	11.6	LOS A	0.2	1.3	0.49	0.61	30.7
3	R2	5	0.0	0.056	11.9	LOS A	0.2	1.3	0.49	0.61	25.7
Approach		30	3.3	0.056	8.0	LOS A	0.2	1.3	0.49	0.61	28.4
East: Georgiana Terrace (E)											
4	L2	154	1.1	0.453	8.1	LOS A	4.2	29.4	0.59	0.31	28.1
5	T1	265	0.7	0.453	4.1	LOS A	4.2	29.4	0.59	0.31	29.5
6	R2	171	0.5	0.453	9.3	LOS A	4.2	29.4	0.59	0.31	31.8
Approach		590	0.7	0.453	6.6	NA	4.2	29.4	0.59	0.31	30.1
North: Baker Street (N)											
7	L2	68	0.0	0.232	6.7	LOS A	0.8	5.9	0.62	0.79	28.9
8	T1	9	0.0	0.232	11.5	LOS A	0.8	5.9	0.62	0.79	28.2
9	R2	19	0.0	0.232	26.4	LOS B	0.8	5.9	0.62	0.79	28.7
Approach		96	0.0	0.232	11.0	LOS A	0.8	5.9	0.62	0.79	28.8
West: Georgiana Terrace (W)											
10	L2	202	1.3	0.299	3.4	LOS A	0.0	0.3	0.01	0.17	38.8
11	T1	365	0.3	0.299	0.0	LOS A	0.0	0.3	0.01	0.17	37.5
12	R2	2	5.0	0.299	5.9	LOS A	0.0	0.3	0.01	0.17	35.9
Approach		569	0.6	0.299	1.3	NA	0.0	0.3	0.01	0.17	38.1
All Vehicles		1285	0.7	0.453	4.6	NA	4.2	29.4	0.33	0.29	33.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [2 Georgiana Tce and Baker St PM]

Georgiana Tce and Baker Street
2022 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	36	0.0	0.089	4.3	LOS A	0.3	2.2	0.44	0.59	29.1
2	T1	22	0.0	0.089	8.2	LOS A	0.3	2.2	0.44	0.59	32.3
3	R2	5	0.0	0.089	12.9	LOS A	0.3	2.2	0.44	0.59	27.6
Approach		63	0.0	0.089	6.3	LOS A	0.3	2.2	0.44	0.59	30.4
East: Georgiana Terrace (E)											
4	L2	45	0.0	0.371	6.5	LOS A	2.7	18.6	0.49	0.31	31.4
5	T1	266	0.0	0.371	2.4	LOS A	2.7	18.6	0.49	0.31	32.1
6	R2	189	0.0	0.371	6.8	LOS A	2.7	18.6	0.49	0.31	34.0
Approach		500	0.0	0.371	4.4	NA	2.7	18.6	0.49	0.31	33.0
North: Baker Street (N)											
7	L2	205	0.0	0.482	8.4	LOS A	2.8	20.0	0.63	0.95	28.2
8	T1	4	0.0	0.482	11.9	LOS A	2.8	20.0	0.63	0.95	27.4
9	R2	39	2.2	0.482	31.1	LOS C	2.8	20.0	0.63	0.95	27.9
Approach		248	0.3	0.482	12.1	LOS A	2.8	20.0	0.63	0.95	28.1
West: Georgiana Terrace (W)											
10	L2	99	0.0	0.221	3.4	LOS A	0.0	0.1	0.00	0.11	39.3
11	T1	326	0.0	0.221	0.0	LOS A	0.0	0.1	0.00	0.11	38.3
12	R2	1	0.0	0.221	4.9	LOS A	0.0	0.1	0.00	0.11	37.0
Approach		426	0.0	0.221	0.8	NA	0.0	0.1	0.00	0.11	38.6
All Vehicles		1237	0.1	0.482	4.8	NA	2.8	20.0	0.35	0.38	32.9

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St AM]

Mann St and Georgiana Tce
2022 Base - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	415	1.1	0.708	4.4	LOS A	9.6	69.4	0.63	0.49	32.0
2	T1	474	5.9	0.708	4.0	LOS A	9.6	69.4	0.63	0.49	34.9
3	R2	11	0.0	0.708	6.7	LOS A	9.6	69.4	0.63	0.49	32.7
Approach		900	3.6	0.708	4.2	LOS A	9.6	69.4	0.63	0.49	33.8
East: Georgiana Terrace (E)											
4	L2	4	0.0	0.017	6.2	LOS A	0.1	0.7	0.61	0.57	30.6
5	T1	6	0.0	0.017	5.8	LOS A	0.1	0.7	0.61	0.57	29.7
6	R2	3	0.0	0.017	8.5	LOS A	0.1	0.7	0.61	0.57	32.7
Approach		13	0.0	0.017	6.5	LOS A	0.1	0.7	0.61	0.57	30.8
North: Mann Street (N)											
7	L2	12	0.0	0.337	4.5	LOS A	2.5	18.9	0.53	0.55	32.9
8	T1	241	10.7	0.337	4.3	LOS A	2.5	18.9	0.53	0.55	34.9
9	R2	84	0.0	0.337	6.9	LOS A	2.5	18.9	0.53	0.55	33.9
Approach		337	7.7	0.337	4.9	LOS A	2.5	18.9	0.53	0.55	34.6
West: Georgiana Terrace (W)											
10	L2	95	0.0	0.343	6.8	LOS A	2.2	15.6	0.72	0.78	30.8
11	T1	30	0.0	0.343	6.3	LOS A	2.2	15.6	0.72	0.78	28.1
12	R2	134	0.7	0.343	9.1	LOS A	2.2	15.6	0.72	0.78	30.3
Approach		259	0.4	0.343	7.9	LOS A	2.2	15.6	0.72	0.78	30.3
All Vehicles		1509	3.9	0.708	5.0	LOS A	9.6	69.4	0.63	0.55	33.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St PM]

Mann St and Georgiana Tce
2022 Base - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	167	0.0	0.355	3.7	LOS A	2.8	19.7	0.34	0.42	34.3
2	T1	276	0.0	0.355	3.2	LOS A	2.8	19.7	0.34	0.42	36.1
3	R2	10	0.0	0.355	6.0	LOS A	2.8	19.7	0.34	0.42	32.6
Approach		453	0.0	0.355	3.4	LOS A	2.8	19.7	0.34	0.42	35.5
East: Georgiana Terrace (E)											
4	L2	21	0.0	0.105	9.8	LOS A	0.6	4.5	0.76	0.77	28.5
5	T1	24	0.0	0.105	9.5	LOS A	0.6	4.5	0.76	0.77	27.8
6	R2	18	0.0	0.105	12.3	LOS A	0.6	4.5	0.76	0.77	30.6
Approach		63	0.0	0.105	10.4	LOS A	0.6	4.5	0.76	0.77	29.0
North: Mann Street (N)											
7	L2	10	0.0	0.456	6.5	LOS A	3.5	24.5	0.74	0.71	32.6
8	T1	337	0.0	0.456	6.0	LOS A	3.5	24.5	0.74	0.71	34.2
9	R2	35	0.0	0.456	8.8	LOS A	3.5	24.5	0.74	0.71	33.5
Approach		382	0.0	0.456	6.3	LOS A	3.5	24.5	0.74	0.71	34.1
West: Georgiana Terrace (W)											
10	L2	137	0.0	0.494	6.8	LOS A	3.5	24.8	0.65	0.73	32.2
11	T1	9	0.0	0.494	6.4	LOS A	3.5	24.8	0.65	0.73	30.5
12	R2	328	0.0	0.494	9.2	LOS A	3.5	24.8	0.65	0.73	31.9
Approach		474	0.0	0.494	8.4	LOS A	3.5	24.8	0.65	0.73	32.0
All Vehicles		1372	0.0	0.494	6.3	LOS A	3.5	24.8	0.58	0.63	33.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022 Base.sip7

MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave AM]

Mann St and Vaughan Ave
2022 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	12	3.3	0.498	4.5	LOS A	0.1	1.0	0.01	0.01	41.1
2	T1	932	3.4	0.498	0.0	LOS A	0.1	1.0	0.01	0.01	39.9
Approach		943	3.4	0.498	0.1	NA	0.1	1.0	0.01	0.01	39.9
North: Mann Street (N)											
8	T1	387	7.3	0.232	0.9	LOS A	0.4	3.1	0.09	0.01	38.8
9a	R1	9	10.0	0.232	13.7	LOS A	0.4	3.1	0.09	0.01	38.8
Approach		397	7.4	0.232	1.2	NA	0.4	3.1	0.09	0.01	38.8
SouthWest: Vaughan Avenue (SW)											
30a	L1	13	14.3	0.034	11.9	LOS A	0.1	0.9	0.76	0.88	27.3
32b	R3	4	0.0	0.023	20.7	LOS B	0.1	0.4	0.86	0.94	25.5
Approach		17	10.7	0.034	14.1	LOS A	0.1	0.9	0.79	0.89	26.7
All Vehicles		1357	4.7	0.498	0.6	NA	0.4	3.1	0.04	0.02	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave PM]

Mann St and Vaughan Ave
2022 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	2	0.0	0.228	4.3	LOS A	0.0	0.1	0.00	0.00	41.1
2	T1	433	2.8	0.228	0.0	LOS A	0.0	0.1	0.00	0.00	40.0
Approach		435	2.8	0.228	0.0	NA	0.0	0.1	0.00	0.00	40.0
North: Mann Street (N)											
8	T1	728	2.7	0.386	0.1	LOS A	0.1	0.8	0.02	0.00	39.9
9a	R1	6	0.0	0.386	5.6	LOS A	0.1	0.8	0.02	0.00	40.4
Approach		735	2.7	0.386	0.1	NA	0.1	0.8	0.02	0.00	39.9
SouthWest: Vaughan Avenue (SW)											
30a	L1	21	4.3	0.022	5.3	LOS A	0.1	0.6	0.47	0.59	32.8
32b	R3	11	0.0	0.037	14.7	LOS B	0.1	0.8	0.79	0.91	28.3
Approach		32	2.9	0.037	8.5	LOS A	0.1	0.8	0.57	0.70	30.8
All Vehicles		1201	2.7	0.386	0.3	NA	0.1	0.8	0.03	0.02	39.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022 Base.sip7

MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv AM]

Central Coast Hwy and Dane Drv
2022 Base - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	12	0.0	0.949	23.6	LOS B	36.1	258.3	1.00	1.23	42.6
22	T1	1576	2.7	0.949	24.5	LOS B	36.1	258.3	1.00	1.26	42.9
23	R2	496	1.0	0.949	32.1	LOS C	35.7	254.0	1.00	1.33	31.6
Approach		2084	2.3	0.949	26.3	LOS B	36.1	258.3	1.00	1.28	40.7
NorthEast: Dane Drive (NE)											
24	L2	256	2.3	0.973	61.5	LOS E	24.5	173.8	1.00	2.49	20.8
25	T1	10	0.0	0.973	61.2	LOS E	24.5	173.8	1.00	2.49	21.5
26	R2	261	1.2	0.973	63.4	LOS E	24.5	173.8	1.00	2.49	21.6
Approach		527	1.7	0.973	62.4	LOS E	24.5	173.8	1.00	2.49	21.2
NorthWest: Central Coast Hwy (NW)											
27	L2	284	0.6	0.869	21.2	LOS B	19.3	138.3	1.00	1.26	30.4
28	T1	1135	4.2	0.869	23.3	LOS B	19.3	138.3	1.00	1.30	43.3
29	R2	8	0.0	0.869	28.4	LOS B	18.0	130.6	1.00	1.33	42.8
Approach		1427	3.4	0.869	22.9	LOS B	19.3	138.3	1.00	1.29	41.1
SouthWest: Dane Drive (SW)											
30	L2	2	0.0	0.027	13.9	LOS A	0.1	1.0	0.89	0.86	48.3
31	T1	4	0.0	0.027	14.4	LOS A	0.1	1.0	0.89	0.86	30.0
32	R2	1	0.0	0.027	19.3	LOS B	0.1	1.0	0.89	0.86	48.7
Approach		7	0.0	0.027	15.0	LOS B	0.1	1.0	0.89	0.86	38.1
All Vehicles		4045	2.6	0.973	29.8	LOS C	36.1	258.3	1.00	1.44	37.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv PM]

Central Coast Hwy and Dane Drv
2022 Base - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	13	0.0	0.463	5.2	LOS A	4.6	32.9	0.50	0.46	52.6
22	T1	981	2.2	0.463	4.9	LOS A	4.6	32.9	0.50	0.49	54.3
23	R2	237	1.8	0.463	9.7	LOS A	4.5	32.0	0.52	0.55	46.1
Approach		1231	2.1	0.463	5.8	LOS A	4.6	32.9	0.51	0.50	53.1
NorthEast: Dane Drive (NE)											
24	L2	306	1.1	2.500	2718.8	LOS F	454.5	3201.4	1.00	15.32	0.8
25	T1	9	0.0	2.500	2718.6	LOS F	454.5	3201.4	1.00	15.32	0.8
26	R2	271	0.3	2.500	2722.8	LOS F	454.5	3201.4	1.00	15.32	0.8
Approach		586	0.7	2.500	2720.6	LOS F	454.5	3201.4	1.00	15.32	0.8
NorthWest: Central Coast Hwy (NW)											
27	L2	239	0.0	1.007	58.0	LOS E	74.0	520.9	1.00	2.12	20.1
28	T1	2069	0.9	1.007	61.4	LOS E	74.0	520.9	1.00	2.16	29.8
29	R2	7	0.0	1.007	68.4	LOS E	69.4	489.4	1.00	2.19	29.3
Approach		2315	0.8	1.007	61.1	LOS E	74.0	520.9	1.00	2.15	28.9
SouthWest: Dane Drive (SW)											
30	L2	20	0.0	0.106	7.0	LOS A	0.4	3.1	0.68	0.83	52.1
31	T1	21	0.0	0.106	7.5	LOS A	0.4	3.1	0.68	0.83	32.6
32	R2	26	0.0	0.106	12.3	LOS A	0.4	3.1	0.68	0.83	52.6
Approach		67	0.0	0.106	9.2	LOS A	0.4	3.1	0.68	0.83	46.3
All Vehicles		4199	1.1	2.500	415.2	LOS F	454.5	3201.4	0.85	3.49	6.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street AM]

Central Coast Hwy, Masons Parade and Mann Street

2022 Base - AM Peak

Signals - Fixed Time Coordinated Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	2129	2.2	0.771	5.5	LOS A	4.9	34.9	0.10	0.59	50.1
2	T1	567	4.0	0.764	27.7	LOS B	23.4	169.8	0.86	0.77	28.5
Approach		2696	2.6	0.771	10.2	LOS A	23.4	169.8	0.26	0.63	45.0
North: Mann Street (N)											
8	T1	328	8.0	0.227	20.7	LOS B	4.5	33.9	0.58	0.48	27.5
Approach		328	8.0	0.227	20.7	LOS B	4.5	33.9	0.58	0.48	27.5
NorthWest: Central Coast Hwy (NW)											
27b	L3	28	12.5	0.770	27.2	LOS B	24.5	177.2	0.74	0.83	37.6
29a	R1	1390	3.4	0.770	23.7	LOS B	25.1	180.6	0.74	0.82	35.9
Approach		1418	3.6	0.770	23.7	LOS B	25.1	180.6	0.74	0.82	36.0
All Vehicles		4442	3.3	0.771	15.3	LOS B	25.1	180.6	0.44	0.68	40.2

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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	41.3	LOS E	0.1	0.1	0.89	0.89	
P3	North Full Crossing	50	17.2	LOS B	0.1	0.1	0.57	0.57	
P7	NorthWest Full Crossing	50	46.8	LOS E	0.1	0.1	0.94	0.94	
All Pedestrians		150	35.1	LOS D			0.80	0.80	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street PM]

Central Coast Hwy, Masons Parade and Mann Street

2022 Base - PM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	1218	2.2	0.422	5.1	LOS A	1.2	8.5	0.04	0.57	50.6
2	T1	262	3.7	0.751	52.3	LOS D	14.8	106.8	0.98	0.86	19.4
Approach		1480	2.5	0.751	13.5	LOS A	14.8	106.8	0.20	0.62	42.1
North: Mann Street (N)											
8	T1	653	2.8	0.930	68.9	LOS E	22.6	161.8	1.00	1.15	14.7
Approach		653	2.8	0.930	68.9	LOS E	22.6	161.8	1.00	1.15	14.7
NorthWest: Central Coast Hwy (NW)											
27b	L3	16	0.0	0.923	19.3	LOS B	33.3	235.2	0.34	0.72	43.5
29a	R1	2496	0.9	0.923	17.2	LOS B	37.9	267.7	0.38	0.73	40.1
Approach		2512	0.9	0.923	17.2	LOS B	37.9	267.7	0.38	0.73	40.1
All Vehicles		4645	1.7	0.930	23.3	LOS B	37.9	267.7	0.41	0.75	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	7.0	LOS A	0.1	0.1	0.34	0.34	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	36.7	LOS D			0.73	0.73	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv AM]

Georgiana Tce and Dane Dr
2022 Base + Completed Development Traffic - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	365	1.2	0.521	5.7	LOS A	5.2	36.9	0.54	0.52	25.3
3	R2	439	0.6	0.521	7.4	LOS A	5.2	36.9	0.54	0.52	34.1
Approach		804	0.9	0.521	6.6	NA	5.2	36.9	0.54	0.52	29.5
East: Georgiana Tce (E)											
4	L2	326	0.9	0.435	5.9	LOS A	2.7	18.9	0.50	0.71	31.0
6	R2	34	0.0	0.435	22.9	LOS B	2.7	18.9	0.50	0.71	27.6
Approach		360	0.8	0.435	7.5	LOS A	2.7	18.9	0.50	0.71	30.5
North: Dane Drive (N)											
7	L2	39	2.3	0.161	1.1	LOS A	0.0	0.0	0.00	0.03	25.8
8	T1	268	2.5	0.161	0.0	LOS A	0.0	0.0	0.00	0.03	24.9
Approach		307	2.5	0.161	0.1	NA	0.0	0.0	0.00	0.03	25.1
All Vehicles		1471	1.2	0.521	5.5	NA	5.2	36.9	0.42	0.46	28.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022

Completed.sip7

MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv PM]

Georgiana Tce and Dane Dr
2022 Base + Completed Development Traffic - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	206	1.7	0.379	2.5	LOS A	2.7	19.3	0.58	0.49	45.3
3	R2	306	0.0	0.379	7.7	LOS A	2.7	19.3	0.58	0.49	35.3
Approach		512	0.7	0.379	5.6	NA	2.7	19.3	0.58	0.49	38.7
East: Georgiana Tce (E)											
4	L2	329	0.3	0.389	5.7	LOS A	2.2	15.4	0.51	0.70	32.0
6	R2	30	0.0	0.389	13.6	LOS A	2.2	15.4	0.51	0.70	37.5
Approach		359	0.3	0.389	6.4	LOS A	2.2	15.4	0.51	0.70	32.5
North: Dane Drive (N)											
7	L2	144	0.0	0.240	5.5	LOS A	0.0	0.0	0.00	0.19	52.8
8	T1	315	1.1	0.240	0.0	LOS A	0.0	0.0	0.00	0.19	54.5
Approach		459	0.7	0.240	1.7	NA	0.0	0.0	0.00	0.19	53.8
All Vehicles		1330	0.6	0.389	4.5	NA	2.7	19.3	0.36	0.44	40.9

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2 [2 Georgiana Tce and Baker St AM]

Georgiana Tce and Baker Street
2022 Base + Completed Development Traffic - AM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	49	1.5	0.180	4.5	LOS A	0.6	4.3	0.53	0.66	26.3
2	T1	10	7.7	0.180	13.9	LOS A	0.6	4.3	0.53	0.66	29.8
3	R2	33	0.0	0.180	14.1	LOS A	0.6	4.3	0.53	0.66	24.7
Approach		92	1.6	0.180	8.9	LOS A	0.6	4.3	0.53	0.66	26.2
East: Georgiana Terrace (E)											
4	L2	189	1.1	0.487	8.1	LOS A	4.7	33.3	0.59	0.30	28.0
5	T1	295	0.7	0.487	4.2	LOS A	4.7	33.3	0.59	0.30	29.4
6	R2	171	0.5	0.487	9.6	LOS A	4.7	33.3	0.59	0.30	31.7
Approach		655	0.8	0.487	6.8	NA	4.7	33.3	0.59	0.30	29.8
North: Baker Street (N)											
7	L2	68	0.0	0.259	7.0	LOS A	1.0	6.8	0.65	0.82	27.8
8	T1	9	0.0	0.259	13.8	LOS A	1.0	6.8	0.65	0.82	27.0
9	R2	19	0.0	0.259	31.9	LOS C	1.0	6.8	0.65	0.82	27.6
Approach		96	0.0	0.259	12.6	LOS A	1.0	6.8	0.65	0.82	27.7
West: Georgiana Terrace (W)											
10	L2	202	1.3	0.322	3.9	LOS A	0.5	3.7	0.10	0.17	38.1
11	T1	365	0.3	0.322	0.3	LOS A	0.5	3.7	0.10	0.17	36.5
12	R2	25	5.0	0.322	6.6	LOS A	0.5	3.7	0.10	0.17	34.9
Approach		592	0.8	0.322	1.8	NA	0.5	3.7	0.10	0.17	37.1
All Vehicles		1435	0.8	0.487	5.2	NA	4.7	33.3	0.39	0.30	32.1

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [2 Georgiana Tce and Baker St PM]

Georgiana Tce and Baker Street
2022 Base + Completed Development Traffic - PM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	58	0.0	0.181	4.4	LOS A	0.6	4.4	0.51	0.64	27.0
2	T1	22	0.0	0.181	9.7	LOS A	0.6	4.4	0.51	0.64	30.7
3	R2	24	0.0	0.181	15.2	LOS B	0.6	4.4	0.51	0.64	25.6
Approach		104	0.0	0.181	8.0	LOS A	0.6	4.4	0.51	0.64	27.7
East: Georgiana Terrace (E)											
4	L2	99	0.0	0.413	6.6	LOS A	3.3	23.0	0.50	0.30	31.0
5	T1	292	0.0	0.413	2.5	LOS A	3.3	23.0	0.50	0.30	31.8
6	R2	189	0.0	0.413	7.1	LOS A	3.3	23.0	0.50	0.30	33.7
Approach		580	0.0	0.413	4.7	NA	3.3	23.0	0.50	0.30	32.5
North: Baker Street (N)											
7	L2	205	0.0	0.522	9.4	LOS A	3.2	22.7	0.65	1.01	27.0
8	T1	4	0.0	0.522	14.9	LOS B	3.2	22.7	0.65	1.01	26.2
9	R2	39	2.2	0.522	37.3	LOS C	3.2	22.7	0.65	1.01	26.7
Approach		248	0.3	0.522	13.8	LOS A	3.2	22.7	0.65	1.01	26.9
West: Georgiana Terrace (W)											
10	L2	99	0.0	0.245	3.9	LOS A	0.4	3.0	0.12	0.12	38.5
11	T1	326	0.0	0.245	0.2	LOS A	0.4	3.0	0.12	0.12	37.1
12	R2	30	0.0	0.245	5.4	LOS A	0.4	3.0	0.12	0.12	35.7
Approach		455	0.0	0.245	1.4	NA	0.4	3.0	0.12	0.12	37.4
All Vehicles		1387	0.1	0.522	5.5	NA	3.3	23.0	0.40	0.39	31.9

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St AM]

Mann St and Georgiana Tce
2022 Base + Completed Development Traffic - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	461	1.1	0.782	5.0	LOS A	12.0	86.4	0.79	0.55	31.3
2	T1	489	5.9	0.782	4.6	LOS A	12.0	86.4	0.79	0.55	34.3
3	R2	11	0.0	0.782	7.2	LOS A	12.0	86.4	0.79	0.55	31.9
Approach		961	3.5	0.782	4.8	LOS A	12.0	86.4	0.79	0.55	33.0
East: Georgiana Terrace (E)											
4	L2	4	0.0	0.018	6.5	LOS A	0.1	0.7	0.63	0.58	30.3
5	T1	6	0.0	0.018	6.0	LOS A	0.1	0.7	0.63	0.58	29.3
6	R2	3	0.0	0.018	8.8	LOS A	0.1	0.7	0.63	0.58	32.4
Approach		13	0.0	0.018	6.8	LOS A	0.1	0.7	0.63	0.58	30.5
North: Mann Street (N)											
7	L2	12	0.0	0.369	4.6	LOS A	2.9	21.4	0.55	0.56	32.8
8	T1	255	10.7	0.369	4.3	LOS A	2.9	21.4	0.55	0.56	34.8
9	R2	104	0.0	0.369	6.9	LOS A	2.9	21.4	0.55	0.56	33.8
Approach		371	7.4	0.369	5.1	LOS A	2.9	21.4	0.55	0.56	34.5
West: Georgiana Terrace (W)											
10	L2	123	0.0	0.396	7.1	LOS A	2.7	19.0	0.77	0.82	30.7
11	T1	30	0.0	0.396	6.5	LOS A	2.7	19.0	0.77	0.82	27.8
12	R2	134	0.7	0.396	9.3	LOS A	2.7	19.0	0.77	0.82	30.2
Approach		287	0.3	0.396	8.1	LOS A	2.7	19.0	0.77	0.82	30.2
All Vehicles		1632	3.8	0.782	5.5	LOS A	12.0	86.4	0.73	0.60	32.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St PM]

Mann St and Georgiana Tce
2022 Base + Completed Development Traffic - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	225	0.0	0.426	3.9	LOS A	3.6	25.3	0.42	0.46	33.8
2	T1	289	0.0	0.426	3.5	LOS A	3.6	25.3	0.42	0.46	35.8
3	R2	10	0.0	0.426	6.2	LOS A	3.6	25.3	0.42	0.46	32.1
Approach		524	0.0	0.426	3.7	LOS A	3.6	25.3	0.42	0.46	35.0
East: Georgiana Terrace (E)											
4	L2	21	0.0	0.110	10.2	LOS A	0.7	4.7	0.78	0.78	28.2
5	T1	24	0.0	0.110	9.9	LOS A	0.7	4.7	0.78	0.78	27.4
6	R2	18	0.0	0.110	12.7	LOS A	0.7	4.7	0.78	0.78	30.3
Approach		63	0.0	0.110	10.8	LOS A	0.7	4.7	0.78	0.78	28.6
North: Mann Street (N)											
7	L2	10	0.0	0.496	6.7	LOS A	4.0	28.1	0.77	0.74	32.3
8	T1	347	0.0	0.496	6.3	LOS A	4.0	28.1	0.77	0.74	33.9
9	R2	58	0.0	0.496	9.0	LOS A	4.0	28.1	0.77	0.74	33.1
Approach		415	0.0	0.496	6.7	LOS A	4.0	28.1	0.77	0.74	33.8
West: Georgiana Terrace (W)											
10	L2	156	0.0	0.524	7.1	LOS A	4.0	27.9	0.68	0.75	31.9
11	T1	9	0.0	0.524	6.7	LOS A	4.0	27.9	0.68	0.75	30.1
12	R2	328	0.0	0.524	9.5	LOS A	4.0	27.9	0.68	0.75	31.6
Approach		493	0.0	0.524	8.7	LOS A	4.0	27.9	0.68	0.75	31.7
All Vehicles		1495	0.0	0.524	6.5	LOS A	4.0	28.1	0.62	0.65	33.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave AM]

Mann St and Vaughan Ave
2022 Base + Completed Development Traffic - AM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	86	3.3	0.569	4.6	LOS A	1.1	8.2	0.05	0.04	40.5
2	T1	947	3.4	0.569	0.1	LOS A	1.1	8.2	0.05	0.04	39.4
Approach		1034	3.4	0.569	0.4	NA	1.1	8.2	0.05	0.04	39.5
North: Mann Street (N)											
8	T1	387	7.3	0.283	3.2	LOS A	1.5	10.9	0.26	0.03	36.2
9a	R1	24	10.0	0.283	17.5	LOS B	1.5	10.9	0.26	0.03	35.1
Approach		412	7.5	0.283	4.1	NA	1.5	10.9	0.26	0.03	36.1
SouthWest: Vaughan Avenue (SW)											
30a	L1	61	14.3	0.170	13.0	LOS A	0.6	4.4	0.80	0.90	26.5
32b	R3	27	0.0	0.173	25.5	LOS B	0.5	3.4	0.90	0.96	23.5
Approach		88	9.9	0.173	16.8	LOS B	0.6	4.4	0.83	0.92	25.3
All Vehicles		1534	4.9	0.569	2.4	NA	1.5	10.9	0.15	0.09	37.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave PM]

Mann St and Vaughan Ave
2022 Base + Completed Development Traffic - PM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	57	0.0	0.289	4.4	LOS A	0.5	3.5	0.04	0.06	40.5
2	T1	465	2.8	0.289	0.0	LOS A	0.5	3.5	0.04	0.06	39.4
Approach		522	2.5	0.289	0.5	NA	0.5	3.5	0.04	0.06	39.5
North: Mann Street (N)											
8	T1	728	2.7	0.397	0.2	LOS A	0.4	2.5	0.05	0.01	39.6
9a	R1	17	0.0	0.397	6.6	LOS A	0.4	2.5	0.05	0.01	40.1
Approach		745	2.7	0.397	0.3	NA	0.4	2.5	0.05	0.01	39.6
SouthWest: Vaughan Avenue (SW)											
30a	L1	62	4.3	0.066	5.7	LOS A	0.2	1.8	0.49	0.65	32.5
32b	R3	27	0.0	0.108	16.6	LOS B	0.3	2.2	0.82	0.92	27.4
Approach		89	3.0	0.108	9.0	LOS A	0.3	2.2	0.59	0.73	30.3
All Vehicles		1357	2.6	0.397	1.0	NA	0.5	3.5	0.08	0.08	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv AM]

Central Coast Hwy and Dane Drv
2022 Base + Completed Development Traffic - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	12	0.0	0.993	48.5	LOS D	58.9	421.5	1.00	1.90	33.0
22	T1	1576	2.7	0.993	49.9	LOS D	58.9	421.5	1.00	1.92	33.1
23	R2	496	1.0	0.993	58.7	LOS E	55.9	397.3	1.00	1.97	22.7
Approach		2084	2.3	0.993	52.0	LOS D	58.9	421.5	1.00	1.93	30.9
NorthEast: Dane Drive (NE)											
24	L2	256	2.3	1.087	198.9	LOS F	78.6	557.9	1.00	5.77	8.8
25	T1	10	0.0	1.087	198.6	LOS F	78.6	557.9	1.00	5.77	9.2
26	R2	326	1.2	1.087	200.9	LOS F	78.6	557.9	1.00	5.77	9.2
Approach		592	1.7	1.087	200.0	LOS F	78.6	557.9	1.00	5.77	9.0
NorthWest: Central Coast Hwy (NW)											
27	L2	307	0.6	0.899	25.2	LOS B	23.1	165.8	1.00	1.37	28.8
28	T1	1163	4.2	0.899	27.7	LOS B	23.1	165.8	1.00	1.41	41.2
29	R2	8	0.0	0.899	33.1	LOS C	21.5	156.1	1.00	1.44	40.6
Approach		1478	3.4	0.899	27.2	LOS B	23.1	165.8	1.00	1.40	38.9
SouthWest: Dane Drive (SW)											
30	L2	2	0.0	0.028	14.5	LOS A	0.1	1.0	0.90	0.87	47.9
31	T1	4	0.0	0.028	15.0	LOS B	0.1	1.0	0.90	0.87	29.8
32	R2	1	0.0	0.028	19.8	LOS B	0.1	1.0	0.90	0.87	48.3
Approach		7	0.0	0.028	15.5	LOS B	0.1	1.0	0.90	0.87	37.8
All Vehicles		4161	2.6	1.087	64.2	LOS E	78.6	557.9	1.00	2.29	26.6

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

MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv PM]

Central Coast Hwy and Dane Drv
2022 Base + Completed Development Traffic - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	13	0.0	0.471	5.3	LOS A	4.7	33.5	0.52	0.48	52.5
22	T1	981	2.2	0.471	5.0	LOS A	4.7	33.5	0.53	0.51	54.1
23	R2	237	1.8	0.471	9.9	LOS A	4.6	32.5	0.54	0.56	46.0
Approach		1231	2.1	0.471	5.9	LOS A	4.7	33.5	0.53	0.52	53.0
NorthEast: Dane Drive (NE)											
24	L2	306	1.1	2.627	2947.1	LOS F	506.8	3568.7	1.00	16.04	0.7
25	T1	9	0.0	2.627	2946.8	LOS F	506.8	3568.7	1.00	16.04	0.7
26	R2	319	0.3	2.627	2951.0	LOS F	506.8	3568.7	1.00	16.04	0.7
Approach		634	0.7	2.627	2949.0	LOS F	506.8	3568.7	1.00	16.04	0.7
NorthWest: Central Coast Hwy (NW)											
27	L2	268	0.0	1.030	86.6	LOS F	97.9	689.2	1.00	2.77	15.8
28	T1	2090	0.9	1.030	89.7	LOS F	97.9	689.2	1.00	2.77	24.1
29	R2	7	0.0	1.030	96.4	LOS F	89.7	632.5	1.00	2.77	24.0
Approach		2365	0.8	1.030	89.4	LOS F	97.9	689.2	1.00	2.77	23.3
SouthWest: Dane Drive (SW)											
30	L2	20	0.0	0.108	7.0	LOS A	0.5	3.2	0.69	0.84	52.0
31	T1	21	0.0	0.108	7.6	LOS A	0.5	3.2	0.69	0.84	32.6
32	R2	26	0.0	0.108	12.4	LOS A	0.5	3.2	0.69	0.84	52.6
Approach		67	0.0	0.108	9.3	LOS A	0.5	3.2	0.69	0.84	46.3
All Vehicles		4297	1.1	2.627	486.1	LOS F	506.8	3568.7	0.86	4.05	6.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022 Completed.sip7

MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street AM]

Central Coast Hwy, Masons Parade and Mann Street

2022 Base + Completed Development Traffic - AM Peak

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	2129	2.2	0.785	6.2	LOS A	8.4	59.6	0.18	0.62	49.4
2	T1	653	4.0	0.859	32.1	LOS C	30.5	220.9	0.93	0.92	26.3
Approach		2782	2.6	0.859	12.3	LOS A	30.5	220.9	0.35	0.69	43.0
North: Mann Street (N)											
8	T1	350	8.0	0.236	19.0	LOS B	4.5	33.9	0.57	0.47	28.4
Approach		350	8.0	0.236	19.0	LOS B	4.5	33.9	0.57	0.47	28.4
NorthWest: Central Coast Hwy (NW)											
27b	L3	28	12.5	0.842	33.9	LOS C	30.7	222.2	0.84	0.90	34.4
29a	R1	1476	3.4	0.842	29.7	LOS C	31.2	224.6	0.84	0.89	32.8
Approach		1504	3.6	0.842	29.7	LOS C	31.2	224.6	0.84	0.89	32.8
All Vehicles		4636	3.3	0.859	18.5	LOS B	31.2	224.6	0.53	0.74	37.8

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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	38.8	LOS D	0.1	0.1	0.88	0.88	
P3	North Full Crossing	50	17.4	LOS B	0.1	0.1	0.59	0.59	
P7	NorthWest Full Crossing	50	44.3	LOS E	0.1	0.1	0.94	0.94	
All Pedestrians		150	33.5	LOS D			0.81	0.81	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022

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MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street PM]

Central Coast Hwy, Masons Parade and Mann Street

2022 Base + Completed Development Traffic - PM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	1218	2.2	0.422	5.1	LOS A	1.2	8.5	0.04	0.57	50.6
2	T1	345	3.7	0.946	73.3	LOS F	24.9	180.0	1.00	1.14	15.3
Approach		1563	2.5	0.946	20.2	LOS B	24.9	180.0	0.25	0.70	37.0
North: Mann Street (N)											
8	T1	669	2.8	0.911	64.2	LOS E	22.2	159.2	1.00	1.09	15.4
Approach		669	2.8	0.911	64.2	LOS E	22.2	159.2	1.00	1.09	15.4
NorthWest: Central Coast Hwy (NW)											
27b	L3	16	0.0	0.958	34.6	LOS C	62.3	439.1	0.58	0.87	35.0
29a	R1	2560	0.9	0.958	32.3	LOS C	66.2	467.4	0.61	0.88	31.7
Approach		2576	0.9	0.958	32.3	LOS C	66.2	467.4	0.61	0.88	31.7
All Vehicles		4808	1.7	0.958	32.8	LOS C	66.2	467.4	0.55	0.85	29.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	7.4	LOS A	0.1	0.1	0.35	0.35	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	36.8	LOS D			0.73	0.73	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2022

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MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv AM]

Georgiana Tce and Dane Dr
2032 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	445	1.2	0.620	7.0	LOS A	8.0	56.4	0.65	0.56	24.5
3	R2	479	0.6	0.620	8.9	LOS A	8.0	56.4	0.65	0.56	32.7
Approach		924	0.9	0.620	8.0	NA	8.0	56.4	0.65	0.56	28.2
East: Georgiana Tce (E)											
4	L2	285	0.9	0.507	7.7	LOS A	3.3	23.4	0.59	0.89	28.3
6	R2	38	0.0	0.507	33.7	LOS C	3.3	23.4	0.59	0.89	26.1
Approach		323	0.8	0.507	10.7	LOS A	3.3	23.4	0.59	0.89	28.0
North: Dane Drive (N)											
7	L2	45	2.3	0.195	1.1	LOS A	0.0	0.0	0.00	0.02	25.8
8	T1	327	2.5	0.195	0.0	LOS A	0.0	0.0	0.00	0.02	24.9
Approach		372	2.5	0.195	0.1	NA	0.0	0.0	0.00	0.02	25.1
All Vehicles		1619	1.2	0.620	6.7	NA	8.0	56.4	0.49	0.50	27.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv PM]

Georgiana Tce and Dane Dr
2032 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	251	1.7	0.439	3.6	LOS A	3.7	25.8	0.64	0.51	43.5
3	R2	308	0.0	0.439	9.0	LOS A	3.7	25.8	0.64	0.51	34.2
Approach		559	0.7	0.439	6.6	NA	3.7	25.8	0.64	0.51	37.8
East: Georgiana Tce (E)											
4	L2	305	0.3	0.418	6.6	LOS A	2.4	17.0	0.57	0.81	30.9
6	R2	34	0.0	0.418	16.6	LOS B	2.4	17.0	0.57	0.81	36.4
Approach		339	0.3	0.418	7.6	LOS A	2.4	17.0	0.57	0.81	31.5
North: Dane Drive (N)											
7	L2	170	0.0	0.290	5.6	LOS A	0.0	0.0	0.00	0.18	52.9
8	T1	384	1.1	0.290	0.0	LOS A	0.0	0.0	0.00	0.18	54.6
Approach		554	0.8	0.290	1.7	NA	0.0	0.0	0.00	0.18	53.9
All Vehicles		1452	0.6	0.439	5.0	NA	3.7	25.8	0.38	0.46	40.9

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

▽ Site: 2 [2 Georgiana Tce and Baker St AM]

Georgiana Tce and Baker Street
2032 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	16	1.5	0.066	4.3	LOS A	0.2	1.5	0.52	0.63	26.2
2	T1	10	7.7	0.066	14.3	LOS A	0.2	1.5	0.52	0.63	29.7
3	R2	5	0.0	0.066	13.4	LOS A	0.2	1.5	0.52	0.63	24.6
Approach		31	3.3	0.066	9.0	LOS A	0.2	1.5	0.52	0.63	27.4
East: Georgiana Terrace (E)											
4	L2	154	1.1	0.528	9.9	LOS A	5.6	39.8	0.71	0.35	25.9
5	T1	286	0.7	0.528	5.8	LOS A	5.6	39.8	0.71	0.35	27.5
6	R2	197	0.5	0.528	11.1	LOS A	5.6	39.8	0.71	0.35	30.2
Approach		637	0.7	0.528	8.5	NA	5.6	39.8	0.71	0.35	28.2
North: Baker Street (N)											
7	L2	71	0.0	0.303	8.1	LOS A	1.2	8.3	0.70	0.89	26.6
8	T1	9	0.0	0.303	14.5	LOS B	1.2	8.3	0.70	0.89	25.7
9	R2	23	0.0	0.303	33.8	LOS C	1.2	8.3	0.70	0.89	26.5
Approach		103	0.0	0.303	14.4	LOS A	1.2	8.3	0.70	0.89	26.5
West: Georgiana Terrace (W)											
10	L2	246	1.3	0.335	3.4	LOS A	0.0	0.3	0.01	0.18	38.6
11	T1	389	0.3	0.335	0.0	LOS A	0.0	0.3	0.01	0.18	37.3
12	R2	2	5.0	0.335	6.3	LOS A	0.0	0.3	0.01	0.18	35.7
Approach		637	0.7	0.335	1.4	NA	0.0	0.3	0.01	0.18	37.9
All Vehicles		1408	0.7	0.528	5.7	NA	5.6	39.8	0.39	0.32	31.8

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: 2 [2 Georgiana Tce and Baker St PM]

Georgiana Tce and Baker Street
2032 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	36	0.0	0.098	4.3	LOS A	0.3	2.4	0.47	0.60	28.4
2	T1	22	0.0	0.098	9.4	LOS A	0.3	2.4	0.47	0.60	31.7
3	R2	5	0.0	0.098	14.6	LOS B	0.3	2.4	0.47	0.60	26.9
Approach		63	0.0	0.098	6.9	LOS A	0.3	2.4	0.47	0.60	29.7
East: Georgiana Terrace (E)											
4	L2	45	0.0	0.413	7.4	LOS A	3.3	23.1	0.54	0.34	30.1
5	T1	284	0.0	0.413	3.1	LOS A	3.3	23.1	0.54	0.34	31.0
6	R2	203	0.0	0.413	7.7	LOS A	3.3	23.1	0.54	0.34	33.1
Approach		532	0.0	0.413	5.2	NA	3.3	23.1	0.54	0.34	32.0
North: Baker Street (N)											
7	L2	228	0.0	0.628	12.1	LOS A	4.5	31.6	0.71	1.18	25.0
8	T1	4	0.0	0.628	16.7	LOS B	4.5	31.6	0.71	1.18	24.1
9	R2	48	2.2	0.628	40.9	LOS C	4.5	31.6	0.71	1.18	24.8
Approach		280	0.4	0.628	17.1	LOS B	4.5	31.6	0.71	1.18	24.9
West: Georgiana Terrace (W)											
10	L2	120	0.0	0.250	3.4	LOS A	0.0	0.1	0.00	0.12	39.3
11	T1	360	0.0	0.250	0.0	LOS A	0.0	0.1	0.00	0.12	38.2
12	R2	1	0.0	0.250	5.0	LOS A	0.0	0.1	0.00	0.12	36.9
Approach		481	0.0	0.250	0.9	NA	0.0	0.1	0.00	0.12	38.5
All Vehicles		1356	0.1	0.628	6.2	NA	4.5	31.6	0.38	0.45	31.3

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St AM]

Mann St and Georgiana Tce
2032 Base - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	461	1.1	0.829	5.0	LOS A	15.0	108.7	0.86	0.54	31.0
2	T1	577	5.9	0.829	4.7	LOS A	15.0	108.7	0.86	0.54	34.1
3	R2	13	0.0	0.829	7.3	LOS A	15.0	108.7	0.86	0.54	31.6
Approach		1051	3.7	0.829	4.9	LOS A	15.0	108.7	0.86	0.54	32.9
East: Georgiana Terrace (E)											
4	L2	5	0.0	0.021	6.8	LOS A	0.1	0.8	0.65	0.60	30.1
5	T1	7	0.0	0.021	6.3	LOS A	0.1	0.8	0.65	0.60	29.1
6	R2	3	0.0	0.021	9.1	LOS A	0.1	0.8	0.65	0.60	32.2
Approach		15	0.0	0.021	7.0	LOS A	0.1	0.8	0.65	0.60	30.2
North: Mann Street (N)											
7	L2	14	0.0	0.401	4.8	LOS A	3.2	24.2	0.59	0.58	32.7
8	T1	291	10.7	0.401	4.5	LOS A	3.2	24.2	0.59	0.58	34.7
9	R2	89	0.0	0.401	7.1	LOS A	3.2	24.2	0.59	0.58	33.7
Approach		394	7.9	0.401	5.1	LOS A	3.2	24.2	0.59	0.58	34.4
West: Georgiana Terrace (W)											
10	L2	109	0.0	0.444	8.6	LOS A	3.3	23.3	0.85	0.91	29.4
11	T1	37	0.0	0.444	8.0	LOS A	3.3	23.3	0.85	0.91	26.2
12	R2	139	0.7	0.444	10.8	LOS A	3.3	23.3	0.85	0.91	28.7
Approach		285	0.4	0.444	9.6	LOS A	3.3	23.3	0.85	0.91	28.8
All Vehicles		1745	4.1	0.829	5.7	LOS A	15.0	108.7	0.80	0.61	32.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: GTA CONSULTANTS | Processed: Wednesday, September 4, 2019 3:10:55 PM

Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St PM]

Mann St and Georgiana Tce
2032 Base - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	188	0.0	0.427	3.8	LOS A	3.7	25.8	0.40	0.44	33.9
2	T1	336	0.0	0.427	3.4	LOS A	3.7	25.8	0.40	0.44	35.9
3	R2	12	0.0	0.427	6.1	LOS A	3.7	25.8	0.40	0.44	32.2
Approach		536	0.0	0.427	3.6	LOS A	3.7	25.8	0.40	0.44	35.3
East: Georgiana Terrace (E)											
4	L2	26	0.0	0.147	11.2	LOS A	0.9	6.5	0.82	0.83	27.3
5	T1	29	0.0	0.147	10.9	LOS A	0.9	6.5	0.82	0.83	26.3
6	R2	22	0.0	0.147	13.7	LOS A	0.9	6.5	0.82	0.83	29.4
Approach		77	0.0	0.147	11.8	LOS A	0.9	6.5	0.82	0.83	27.7
North: Mann Street (N)											
7	L2	12	0.0	0.563	8.4	LOS A	5.3	37.3	0.84	0.85	30.8
8	T1	396	0.0	0.563	7.9	LOS A	5.3	37.3	0.84	0.85	32.6
9	R2	39	0.0	0.563	10.7	LOS A	5.3	37.3	0.84	0.85	31.7
Approach		447	0.0	0.563	8.2	LOS A	5.3	37.3	0.84	0.85	32.5
West: Georgiana Terrace (W)											
10	L2	156	0.0	0.594	8.8	LOS A	5.4	37.7	0.76	0.84	30.4
11	T1	10	0.0	0.594	8.4	LOS A	5.4	37.7	0.76	0.84	28.0
12	R2	366	0.0	0.594	11.1	LOS A	5.4	37.7	0.76	0.84	29.9
Approach		532	0.0	0.594	10.4	LOS A	5.4	37.7	0.76	0.84	30.0
All Vehicles		1592	0.0	0.594	7.6	LOS A	5.4	37.7	0.67	0.71	32.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave AM]

Mann St and Vaughan Ave
2032 Base - AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	14	3.3	0.581	4.6	LOS A	0.2	1.4	0.01	0.01	41.0
2	T1	1086	3.4	0.581	0.0	LOS A	0.2	1.4	0.01	0.01	39.9
Approach		1100	3.4	0.581	0.1	NA	0.2	1.4	0.01	0.01	39.9
North: Mann Street (N)											
8	T1	444	7.3	0.282	2.1	LOS A	1.0	7.3	0.14	0.01	37.5
9a	R1	12	10.0	0.282	21.4	LOS B	1.0	7.3	0.14	0.01	36.9
Approach		456	7.4	0.282	2.6	NA	1.0	7.3	0.14	0.01	37.5
SouthWest: Vaughan Avenue (SW)											
30a	L1	16	14.3	0.064	17.0	LOS B	0.2	1.5	0.85	0.92	24.1
32b	R3	5	0.0	0.049	33.4	LOS C	0.1	0.9	0.92	0.96	20.9
Approach		21	10.7	0.064	21.1	LOS B	0.2	1.5	0.86	0.93	23.0
All Vehicles		1577	4.7	0.581	1.1	NA	1.0	7.3	0.06	0.02	38.9

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave PM]

Mann St and Vaughan Ave
2032 Base - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	3	0.0	0.271	4.4	LOS A	0.0	0.2	0.00	0.00	41.1
2	T1	514	2.8	0.271	0.0	LOS A	0.0	0.2	0.00	0.00	40.0
Approach		517	2.8	0.271	0.0	NA	0.0	0.2	0.00	0.00	40.0
North: Mann Street (N)											
8	T1	838	2.7	0.445	0.1	LOS A	0.2	1.2	0.02	0.00	39.8
9a	R1	7	0.0	0.445	6.9	LOS A	0.2	1.2	0.02	0.00	40.4
Approach		845	2.7	0.445	0.1	NA	0.2	1.2	0.02	0.00	39.8
SouthWest: Vaughan Avenue (SW)											
30a	L1	25	4.3	0.029	5.9	LOS A	0.1	0.8	0.51	0.64	32.3
32b	R3	12	0.0	0.059	20.3	LOS B	0.2	1.2	0.86	0.94	25.6
Approach		37	3.0	0.059	10.4	LOS A	0.2	1.2	0.62	0.73	29.3
All Vehicles		1399	2.7	0.445	0.4	NA	0.2	1.2	0.03	0.02	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv AM]

Central Coast Hwy and Dane Drv
2032 Base - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	15	0.0	1.097	192.0	LOS F	188.6	1350.5	1.00	4.69	14.4
22	T1	1922	2.7	1.097	192.7	LOS F	188.6	1350.5	1.00	4.63	14.4
23	R2	604	1.0	1.097	199.7	LOS F	167.8	1193.4	1.00	4.48	9.1
Approach		2541	2.3	1.097	194.4	LOS F	188.6	1350.5	1.00	4.60	13.2
NorthEast: Dane Drive (NE)											
24	L2	313	2.3	1.269	507.2	LOS F	174.3	1238.6	1.00	10.82	3.8
25	T1	12	0.0	1.269	506.8	LOS F	174.3	1238.6	1.00	10.82	4.0
26	R2	284	1.2	1.269	509.4	LOS F	174.3	1238.6	1.00	10.82	4.0
Approach		609	1.8	1.269	508.2	LOS F	174.3	1238.6	1.00	10.82	3.9
NorthWest: Central Coast Hwy (NW)											
27	L2	318	0.6	1.114	235.9	LOS F	150.1	1077.0	1.00	5.60	7.5
28	T1	1383	4.2	1.114	238.7	LOS F	150.1	1077.0	1.00	5.38	12.1
29	R2	9	0.0	1.114	244.4	LOS F	126.3	914.9	1.00	5.19	12.2
Approach		1710	3.5	1.114	238.2	LOS F	150.1	1077.0	1.00	5.42	11.3
SouthWest: Dane Drive (SW)											
30	L2	3	0.0	0.040	16.1	LOS B	0.2	1.5	0.91	0.91	47.1
31	T1	5	0.0	0.040	16.6	LOS B	0.2	1.5	0.91	0.91	29.2
32	R2	1	0.0	0.040	21.4	LOS B	0.2	1.5	0.91	0.91	47.4
Approach		9	0.0	0.040	17.0	LOS B	0.2	1.5	0.91	0.91	37.4
All Vehicles		4869	2.6	1.269	248.7	LOS F	188.6	1350.5	1.00	5.66	10.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv PM]

Central Coast Hwy and Dane Drv
2032 Base - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	16	0.0	0.563	5.3	LOS A	6.4	45.6	0.57	0.48	52.3
22	T1	1197	2.2	0.563	5.0	LOS A	6.4	45.6	0.57	0.51	53.9
23	R2	289	1.8	0.563	9.9	LOS A	6.2	44.4	0.59	0.56	45.7
Approach		1502	2.1	0.563	6.0	LOS A	6.4	45.6	0.58	0.52	52.8
NorthEast: Dane Drive (NE)											
24	L2	373	1.1	2.636	2961.2	LOS F	540.6	3808.3	1.00	17.23	0.7
25	T1	11	0.0	2.636	2961.0	LOS F	540.6	3808.3	1.00	17.23	0.7
26	R2	293	0.3	2.636	2965.0	LOS F	540.6	3808.3	1.00	17.23	0.7
Approach		677	0.7	2.636	2962.8	LOS F	540.6	3808.3	1.00	17.23	0.7
NorthWest: Central Coast Hwy (NW)											
27	L2	261	0.0	1.295	544.0	LOS F	455.3	3206.5	1.00	11.40	3.6
28	T1	2517	0.9	1.295	545.3	LOS F	455.3	3206.5	1.00	10.96	6.0
29	R2	8	0.0	1.295	550.3	LOS F	390.5	2753.8	1.00	10.53	6.1
Approach		2786	0.8	1.295	545.2	LOS F	455.3	3206.5	1.00	11.00	5.8
SouthWest: Dane Drive (SW)											
30	L2	24	0.0	0.152	7.9	LOS A	0.7	4.8	0.75	0.88	51.5
31	T1	26	0.0	0.152	8.4	LOS A	0.7	4.8	0.75	0.88	32.2
32	R2	32	0.0	0.152	13.2	LOS A	0.7	4.8	0.75	0.88	52.0
Approach		82	0.0	0.152	10.1	LOS A	0.7	4.8	0.75	0.88	45.8
All Vehicles		5047	1.1	2.636	700.3	LOS F	540.6	3808.3	0.87	8.55	4.3

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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: P:\N13100-13199\N131974 26 Mann Street, Gosford - Staged Masterplan\Modelling\190903sid-N131974 26 Mann St 2032 Base.sip7

MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street AM]

Central Coast Hwy, Masons Parade and Mann Street

2032 Base - AM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
South: Mann Street (S)											
1a	L1	2596	2.2	0.899	9.6	LOS A	17.0	121.2	0.18	0.64	46.0
2	T1	645	4.0	0.885	41.9	LOS C	37.9	274.1	0.96	0.96	22.4
Approach		3241	2.5	0.899	16.0	LOS B	37.9	274.1	0.34	0.70	40.0
North: Mann Street (N)											
8	T1	373	8.0	0.263	24.6	LOS B	6.1	45.7	0.60	0.50	25.6
Approach		373	8.0	0.263	24.6	LOS B	6.1	45.7	0.60	0.50	25.6
NorthWest: Central Coast Hwy (NW)											
27b	L3	33	12.5	0.896	40.4	LOS C	46.3	334.5	0.88	0.94	31.8
29a	R1	1689	3.4	0.896	35.8	LOS C	46.8	337.3	0.88	0.93	30.1
Approach		1722	3.6	0.896	35.9	LOS C	46.8	337.3	0.88	0.93	30.2
All Vehicles		5336	3.3	0.899	23.0	LOS B	46.8	337.3	0.53	0.76	35.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Back of Queue Distance	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	m		per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	17.6	LOS B	0.1	0.1	0.54	0.54	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	40.2	LOS E			0.80	0.80	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street PM]

Central Coast Hwy, Masons Parade and Mann Street

2032 Base - PM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	1485	2.2	0.514	5.2	LOS A	1.7	12.2	0.04	0.57	50.5
2	T1	307	3.7	0.922	67.5	LOS E	20.9	150.7	1.00	1.07	16.2
Approach		1792	2.4	0.922	15.9	LOS B	20.9	150.7	0.21	0.66	40.3
North: Mann Street (N)											
8	T1	746	2.8	1.113	271.7	LOS F	57.3	410.9	1.00	2.35	4.8
Approach		746	2.8	1.113	271.7	LOS F	57.3	410.9	1.00	2.35	4.8
NorthWest: Central Coast Hwy (NW)											
27b	L3	19	0.0	1.100	219.1	LOS F	213.2	1504.1	1.00	1.55	10.3
29a	R1	3009	0.9	1.100	217.7	LOS F	231.4	1632.7	1.00	1.62	8.8
Approach		3028	0.9	1.100	217.7	LOS F	231.4	1632.7	1.00	1.62	8.8
All Vehicles		5566	1.7	1.113	159.9	LOS F	231.4	1632.7	0.74	1.41	10.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	6.7	LOS A	0.1	0.1	0.33	0.33	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	36.5	LOS D			0.73	0.73	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▽ Site: 1 [1 Georgiana Tce and Dane Drv AM]

Georgiana Tce and Dane Dr
2032 Base + Completed Development Traffic - AM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	445	1.2	0.639	7.2	LOS A	8.6	61.0	0.67	0.57	24.4
3	R2	502	0.6	0.639	9.1	LOS A	8.6	61.0	0.67	0.57	32.5
Approach		947	0.9	0.639	8.2	NA	8.6	61.0	0.67	0.57	28.1
East: Georgiana Tce (E)											
4	L2	349	0.9	0.591	8.9	LOS A	4.7	33.1	0.61	0.99	27.5
6	R2	39	0.0	0.591	38.7	LOS C	4.7	33.1	0.61	0.99	25.6
Approach		388	0.8	0.591	11.9	LOS A	4.7	33.1	0.61	0.99	27.3
North: Dane Drive (N)											
7	L2	45	2.3	0.195	1.1	LOS A	0.0	0.0	0.00	0.02	25.8
8	T1	327	2.5	0.195	0.0	LOS A	0.0	0.0	0.00	0.02	24.9
Approach		372	2.5	0.195	0.1	NA	0.0	0.0	0.00	0.02	25.1
All Vehicles		1707	1.2	0.639	7.3	NA	8.6	61.0	0.51	0.55	27.2

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 1 [1 Georgiana Tce and Dane Drv PM]

Georgiana Tce and Dane Dr
2032 Base + Completed Development Traffic - PM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dane Drive (S)											
2	T1	251	1.7	0.468	3.9	LOS A	4.1	28.9	0.66	0.55	42.9
3	R2	337	0.0	0.468	9.2	LOS A	4.1	28.9	0.66	0.55	33.8
Approach		588	0.7	0.468	6.9	NA	4.1	28.9	0.66	0.55	37.1
East: Georgiana Tce (E)											
4	L2	353	0.3	0.474	7.1	LOS A	3.1	21.7	0.59	0.86	30.5
6	R2	34	0.0	0.474	18.5	LOS B	3.1	21.7	0.59	0.86	36.0
Approach		387	0.3	0.474	8.1	LOS A	3.1	21.7	0.59	0.86	31.1
North: Dane Drive (N)											
7	L2	170	0.0	0.290	5.6	LOS A	0.0	0.0	0.00	0.18	52.9
8	T1	384	1.1	0.290	0.0	LOS A	0.0	0.0	0.00	0.18	54.6
Approach		554	0.8	0.290	1.7	NA	0.0	0.0	0.00	0.18	53.9
All Vehicles		1529	0.6	0.474	5.3	NA	4.1	28.9	0.40	0.50	40.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2 [2 Georgiana Tce and Baker St AM]

Georgiana Tce and Baker Street
2032 Base + Completed Development Traffic - AM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	49	1.5	0.204	4.5	LOS A	0.7	4.8	0.56	0.69	25.2
2	T1	10	7.7	0.204	17.3	LOS B	0.7	4.8	0.56	0.69	28.9
3	R2	33	0.0	0.204	15.9	LOS B	0.7	4.8	0.56	0.69	23.6
Approach		92	1.6	0.204	10.0	LOS A	0.7	4.8	0.56	0.69	25.2
East: Georgiana Terrace (E)											
4	L2	190	1.1	0.564	10.1	LOS A	6.5	45.5	0.72	0.33	25.7
5	T1	317	0.7	0.564	6.0	LOS A	6.5	45.5	0.72	0.33	27.3
6	R2	197	0.5	0.564	11.7	LOS A	6.5	45.5	0.72	0.33	30.0
Approach		704	0.8	0.564	8.7	NA	6.5	45.5	0.72	0.33	27.9
North: Baker Street (N)											
7	L2	71	0.0	0.344	9.0	LOS A	1.4	9.7	0.73	0.94	25.0
8	T1	9	0.0	0.344	17.9	LOS B	1.4	9.7	0.73	0.94	24.2
9	R2	23	0.0	0.344	41.3	LOS C	1.4	9.7	0.73	0.94	25.0
Approach		103	0.0	0.344	17.0	LOS B	1.4	9.7	0.73	0.94	24.9
West: Georgiana Terrace (W)											
10	L2	246	1.3	0.360	3.9	LOS A	0.6	4.5	0.10	0.18	37.9
11	T1	389	0.3	0.360	0.4	LOS A	0.6	4.5	0.10	0.18	36.2
12	R2	26	5.0	0.360	7.0	LOS A	0.6	4.5	0.10	0.18	34.6
Approach		661	0.8	0.360	2.0	NA	0.6	4.5	0.10	0.18	37.0
All Vehicles		1560	0.8	0.564	6.5	NA	6.5	45.5	0.45	0.33	30.8

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 2 [2 Georgiana Tce and Baker St PM]

Georgiana Tce and Baker Street
2032 Base + Completed Development Traffic - PM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L2	58	0.0	0.202	4.5	LOS A	0.7	4.8	0.54	0.66	26.1
2	T1	22	0.0	0.202	11.2	LOS A	0.7	4.8	0.54	0.66	29.9
3	R2	24	0.0	0.202	17.3	LOS B	0.7	4.8	0.54	0.66	24.8
Approach		104	0.0	0.202	8.9	LOS A	0.7	4.8	0.54	0.66	26.9
East: Georgiana Terrace (E)											
4	L2	99	0.0	0.455	7.5	LOS A	4.0	28.3	0.55	0.33	29.7
5	T1	310	0.0	0.455	3.3	LOS A	4.0	28.3	0.55	0.33	30.6
6	R2	203	0.0	0.455	8.1	LOS A	4.0	28.3	0.55	0.33	32.8
Approach		612	0.0	0.455	5.5	NA	4.0	28.3	0.55	0.33	31.4
North: Baker Street (N)											
7	L2	228	0.0	0.687	14.9	LOS B	5.4	38.0	0.73	1.31	23.0
8	T1	4	0.0	0.687	21.9	LOS B	5.4	38.0	0.73	1.31	22.1
9	R2	48	2.2	0.687	50.2	LOS D	5.4	38.0	0.73	1.31	22.9
Approach		280	0.4	0.687	21.0	LOS B	5.4	38.0	0.73	1.31	22.9
West: Georgiana Terrace (W)											
10	L2	120	0.0	0.275	3.9	LOS A	0.5	3.2	0.11	0.13	38.5
11	T1	360	0.0	0.275	0.2	LOS A	0.5	3.2	0.11	0.13	37.0
12	R2	30	0.0	0.275	5.6	LOS A	0.5	3.2	0.11	0.13	35.7
Approach		510	0.0	0.275	1.4	NA	0.5	3.2	0.11	0.13	37.4
All Vehicles		1506	0.1	0.687	7.3	NA	5.4	38.0	0.44	0.46	30.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: ☐ [☐ Georgiana Tce and Mann St AM]

Mann St and Georgiana Tce
2032 Base + Completed Development Traffic - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	507	1.1	0.907	7.4	LOS A	22.2	160.0	1.00	0.63	30.0
2	T1	592	5.9	0.907	7.1	LOS A	22.2	160.0	1.00	0.63	33.3
3	R2	13	0.0	0.907	9.7	LOS A	22.2	160.0	1.00	0.63	30.6
Approach		1112	3.6	0.907	7.3	LOS A	22.2	160.0	1.00	0.63	32.0
East: Georgiana Terrace (E)											
4	L2	5	0.0	0.023	7.2	LOS A	0.1	0.9	0.69	0.62	29.7
5	T1	7	0.0	0.023	6.7	LOS A	0.1	0.9	0.69	0.62	28.5
6	R2	3	0.0	0.023	9.5	LOS A	0.1	0.9	0.69	0.62	31.8
Approach		15	0.0	0.023	7.4	LOS A	0.1	0.9	0.69	0.62	29.7
North: Mann Street (N)											
7	L2	14	0.0	0.448	4.8	LOS A	3.8	28.5	0.62	0.59	32.5
8	T1	320	10.7	0.448	4.6	LOS A	3.8	28.5	0.62	0.59	34.6
9	R2	109	0.0	0.448	7.1	LOS A	3.8	28.5	0.62	0.59	33.5
Approach		443	7.7	0.448	5.3	LOS A	3.8	28.5	0.62	0.59	34.3
West: Georgiana Terrace (W)											
10	L2	137	0.0	0.513	9.9	LOS A	4.3	30.2	0.90	0.99	28.5
11	T1	37	0.0	0.513	9.3	LOS A	4.3	30.2	0.90	0.99	25.0
12	R2	139	0.7	0.513	12.1	LOS A	4.3	30.2	0.90	0.99	27.7
Approach		313	0.3	0.513	10.8	LOS A	4.3	30.2	0.90	0.99	27.9
All Vehicles		1883	4.0	0.907	7.4	LOS A	22.2	160.0	0.89	0.68	31.8

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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 3 [3 Georgiana Tce and Mann St PM]

Mann St and Georgiana Tce
2032 Base + Completed Development Traffic - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1	L2	246	0.0	0.500	4.2	LOS A	4.7	32.6	0.49	0.48	33.5
2	T1	349	0.0	0.500	3.7	LOS A	4.7	32.6	0.49	0.48	35.5
3	R2	12	0.0	0.500	6.5	LOS A	4.7	32.6	0.49	0.48	31.8
Approach		607	0.0	0.500	3.9	LOS A	4.7	32.6	0.49	0.48	34.8
East: Georgiana Terrace (E)											
4	L2	26	0.0	0.155	11.7	LOS A	1.0	6.9	0.84	0.85	26.8
5	T1	29	0.0	0.155	11.4	LOS A	1.0	6.9	0.84	0.85	25.8
6	R2	22	0.0	0.155	14.2	LOS A	1.0	6.9	0.84	0.85	29.0
Approach		77	0.0	0.155	12.3	LOS A	1.0	6.9	0.84	0.85	27.2
North: Mann Street (N)											
7	L2	12	0.0	0.606	9.1	LOS A	6.3	43.8	0.87	0.90	30.1
8	T1	406	0.0	0.606	8.7	LOS A	6.3	43.8	0.87	0.90	31.9
9	R2	62	0.0	0.606	11.5	LOS A	6.3	43.8	0.87	0.90	30.9
Approach		480	0.0	0.606	9.1	LOS A	6.3	43.8	0.87	0.90	31.8
West: Georgiana Terrace (W)											
10	L2	175	0.0	0.628	9.5	LOS A	6.2	43.3	0.80	0.88	29.9
11	T1	10	0.0	0.628	9.1	LOS A	6.2	43.3	0.80	0.88	27.3
12	R2	366	0.0	0.628	11.9	LOS A	6.2	43.3	0.80	0.88	29.2
Approach		551	0.0	0.628	11.1	LOS A	6.2	43.3	0.80	0.88	29.4
All Vehicles		1715	0.0	0.628	8.0	LOS A	6.3	43.8	0.71	0.74	31.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave AM]

Mann St and Vaughan Ave
2032 Base + Completed Development Traffic - AM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	89	3.3	0.653	4.7	LOS A	1.4	10.3	0.05	0.04	40.6
2	T1	1102	3.4	0.653	0.1	LOS A	1.4	10.3	0.05	0.04	39.5
Approach		1192	3.4	0.653	0.4	NA	1.4	10.3	0.05	0.04	39.6
North: Mann Street (N)											
8	T1	444	7.3	0.371	7.5	LOS A	3.3	24.6	0.36	0.04	32.6
9a	R1	26	10.0	0.371	29.0	LOS C	3.3	24.6	0.36	0.04	30.4
Approach		471	7.5	0.371	8.7	NA	3.3	24.6	0.36	0.04	32.5
SouthWest: Vaughan Avenue (SW)											
30a	L1	63	14.3	0.267	20.2	LOS B	0.9	7.0	0.88	0.98	22.5
32b	R3	27	0.0	0.312	47.7	LOS D	0.9	6.0	0.95	1.01	17.4
Approach		91	10.0	0.312	28.5	LOS B	0.9	7.0	0.90	0.99	20.3
All Vehicles		1753	4.8	0.653	4.1	NA	3.3	24.6	0.18	0.09	36.1

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▽ Site: 4 [4 Mann St and Vaughan Ave PM]

Mann St and Vaughan Ave
2032 Base + Completed Development Traffic - PM Peak
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1b	L3	57	0.0	0.331	4.4	LOS A	0.5	3.7	0.04	0.05	40.5
2	T1	546	2.8	0.331	0.0	LOS A	0.5	3.7	0.04	0.05	39.4
Approach		603	2.5	0.331	0.4	NA	0.5	3.7	0.04	0.05	39.5
North: Mann Street (N)											
8	T1	838	2.7	0.458	0.3	LOS A	0.5	3.5	0.06	0.01	39.5
9a	R1	18	0.0	0.458	8.2	LOS A	0.5	3.5	0.06	0.01	39.9
Approach		856	2.7	0.458	0.4	NA	0.5	3.5	0.06	0.01	39.5
SouthWest: Vaughan Avenue (SW)											
30a	L1	66	4.3	0.079	6.2	LOS A	0.3	2.1	0.53	0.70	31.9
32b	R3	28	0.0	0.164	23.5	LOS B	0.5	3.3	0.89	0.96	24.3
Approach		95	3.0	0.164	11.4	LOS A	0.5	3.3	0.64	0.78	28.6
All Vehicles		1554	2.6	0.458	1.1	NA	0.5	3.7	0.09	0.07	38.8

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.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv AM]

Central Coast Hwy and Dane Drv
2032 Base + Completed Development Traffic - AM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	15	0.0	1.131	252.4	LOS F	232.0	1661.1	1.00	5.93	11.6
22	T1	1922	2.7	1.131	253.0	LOS F	232.0	1661.1	1.00	5.83	11.7
23	R2	604	1.0	1.131	259.7	LOS F	204.6	1454.6	1.00	5.60	7.3
Approach		2541	2.3	1.131	254.6	LOS F	232.0	1661.1	1.00	5.78	10.7
NorthEast: Dane Drive (NE)											
24	L2	313	2.3	1.389	719.3	LOS F	248.8	1767.2	1.00	13.77	2.8
25	T1	12	0.0	1.389	719.0	LOS F	248.8	1767.2	1.00	13.77	2.9
26	R2	349	1.2	1.389	721.7	LOS F	248.8	1767.2	1.00	13.77	2.9
Approach		674	1.7	1.389	720.6	LOS F	248.8	1767.2	1.00	13.77	2.8
NorthWest: Central Coast Hwy (NW)											
27	L2	341	0.6	1.121	246.6	LOS F	160.0	1147.6	1.00	5.83	7.2
28	T1	1412	4.2	1.121	249.2	LOS F	160.0	1147.6	1.00	5.60	11.7
29	R2	9	0.0	1.121	254.9	LOS F	134.7	976.0	1.00	5.41	11.8
Approach		1762	3.4	1.121	248.8	LOS F	160.0	1147.6	1.00	5.64	10.8
SouthWest: Dane Drive (SW)											
30	L2	3	0.0	0.039	15.6	LOS B	0.2	1.4	0.91	0.90	47.4
31	T1	5	0.0	0.039	16.1	LOS B	0.2	1.4	0.91	0.90	29.4
32	R2	1	0.0	0.039	20.9	LOS B	0.2	1.4	0.91	0.90	47.7
Approach		9	0.0	0.039	16.4	LOS B	0.2	1.4	0.91	0.90	37.6
All Vehicles		4986	2.6	1.389	315.1	LOS F	248.8	1767.2	1.00	6.80	8.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 5 [5 Central Coast Hwy and Dane Drv PM]

Central Coast Hwy and Dane Drv
2032 Base + Completed Development Traffic - PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
SouthEast: Central Coast Hwy (SE)											
21	L2	16	0.0	0.574	5.4	LOS A	6.5	46.5	0.60	0.50	52.2
22	T1	1197	2.2	0.574	5.2	LOS A	6.5	46.5	0.61	0.52	53.8
23	R2	289	1.8	0.574	10.1	LOS A	6.3	45.1	0.62	0.57	45.6
Approach		1502	2.1	0.574	6.1	LOS A	6.5	46.5	0.61	0.53	52.6
NorthEast: Dane Drive (NE)											
24	L2	373	1.1	2.745	3157.0	LOS F	592.3	4171.6	1.00	17.91	0.7
25	T1	11	0.0	2.745	3156.8	LOS F	592.3	4171.6	1.00	17.91	0.7
26	R2	341	0.3	2.745	3160.7	LOS F	592.3	4171.6	1.00	17.91	0.7
Approach		725	0.7	2.745	3158.7	LOS F	592.3	4171.6	1.00	17.91	0.7
NorthWest: Central Coast Hwy (NW)											
27	L2	290	0.0	1.321	589.8	LOS F	491.6	3461.6	1.00	12.06	3.4
28	T1	2538	0.9	1.321	591.1	LOS F	491.6	3461.6	1.00	11.58	5.6
29	R2	8	0.0	1.321	596.1	LOS F	421.2	2970.1	1.00	11.12	5.6
Approach		2836	0.8	1.321	591.0	LOS F	491.6	3461.6	1.00	11.62	5.3
SouthWest: Dane Drive (SW)											
30	L2	24	0.0	0.156	8.0	LOS A	0.7	4.9	0.75	0.88	51.5
31	T1	26	0.0	0.156	8.5	LOS A	0.7	4.9	0.75	0.88	32.2
32	R2	32	0.0	0.156	13.3	LOS A	0.7	4.9	0.75	0.88	52.0
Approach		82	0.0	0.156	10.2	LOS A	0.7	4.9	0.75	0.88	45.7
All Vehicles		5145	1.1	2.745	772.8	LOS F	592.3	4171.6	0.88	9.10	3.9

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

MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street AM]

Central Coast Hwy, Masons Parade and Mann Street

2032 Base + Completed Development Traffic - AM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	2596	2.2	0.899	9.6	LOS A	17.0	121.2	0.18	0.64	46.0
2	T1	731	4.0	0.962	64.0	LOS E	55.9	404.4	1.00	1.18	16.8
Approach		3327	2.6	0.962	21.6	LOS B	55.9	404.4	0.36	0.76	36.2
North: Mann Street (N)											
8	T1	395	8.0	0.266	23.0	LOS B	6.2	46.6	0.58	0.48	26.4
Approach		395	8.0	0.266	23.0	LOS B	6.2	46.6	0.58	0.48	26.4
NorthWest: Central Coast Hwy (NW)											
27b	L3	33	12.5	0.972	74.8	LOS F	71.9	519.2	1.00	1.11	22.7
29a	R1	1775	3.4	0.972	68.9	LOS E	72.2	520.2	1.00	1.10	20.9
Approach		1808	3.6	0.972	69.1	LOS E	72.2	520.2	1.00	1.10	21.0
All Vehicles		5530	3.3	0.972	37.2	LOS C	72.2	520.2	0.59	0.85	28.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	18.7	LOS B	0.1	0.1	0.56	0.56	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	40.6	LOS E			0.80	0.80	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 6 [6 Central Coast Hwy and Mann Street PM]

Central Coast Hwy, Masons Parade and Mann Street

2032 Base + Completed Development Traffic - PM Peak

Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mann Street (S)											
1a	L1	1485	2.2	0.514	5.2	LOS A	1.7	12.2	0.04	0.57	50.5
2	T1	390	3.7	1.117	279.4	LOS F	61.1	441.8	1.00	2.13	4.8
Approach		1875	2.5	1.117	62.2	LOS E	61.1	441.8	0.24	0.89	21.1
North: Mann Street (N)											
8	T1	763	2.8	1.086	228.2	LOS F	52.6	377.2	1.00	2.13	5.6
Approach		763	2.8	1.086	228.2	LOS F	52.6	377.2	1.00	2.13	5.6
NorthWest: Central Coast Hwy (NW)											
27b	L3	19	0.0	1.137	282.6	LOS F	250.9	1770.0	1.00	1.71	8.3
29a	R1	3074	0.9	1.137	281.4	LOS F	270.3	1907.2	1.00	1.79	7.1
Approach		3093	0.9	1.137	281.4	LOS F	270.3	1907.2	1.00	1.79	7.1
All Vehicles		5731	1.7	1.137	202.6	LOS F	270.3	1907.2	0.75	1.54	8.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1S	South Slip/Bypass Lane Crossing	50	48.7	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	50	7.0	LOS A	0.1	0.1	0.34	0.34	
P7	NorthWest Full Crossing	50	54.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		150	36.7	LOS D			0.73	0.73	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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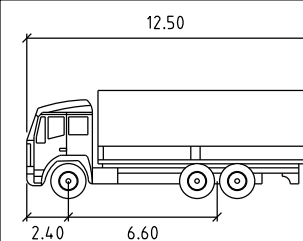
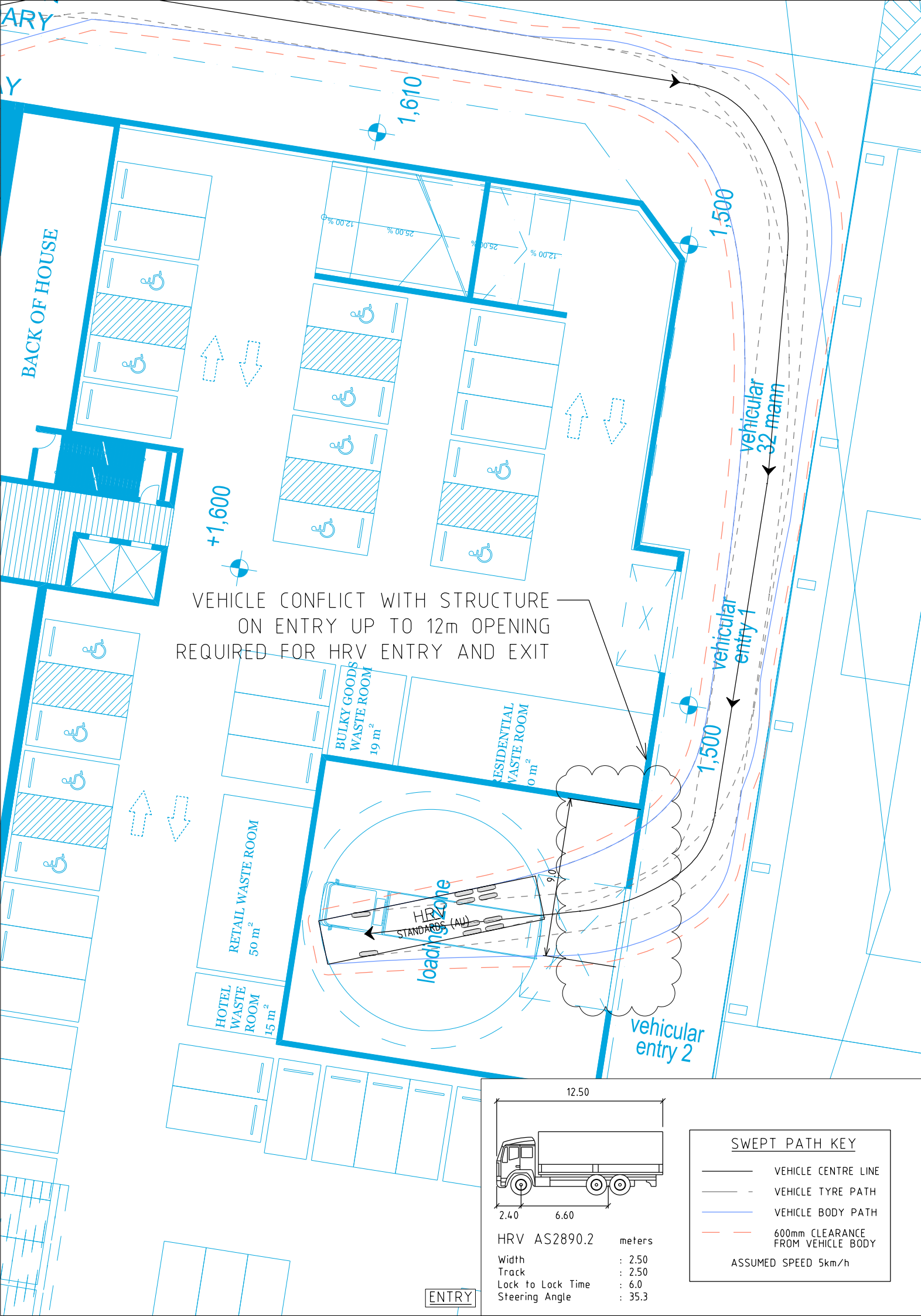
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C. SWEPT PATH ASSESSMENT

C



HRV AS2890.2 meters

Width : 2.50

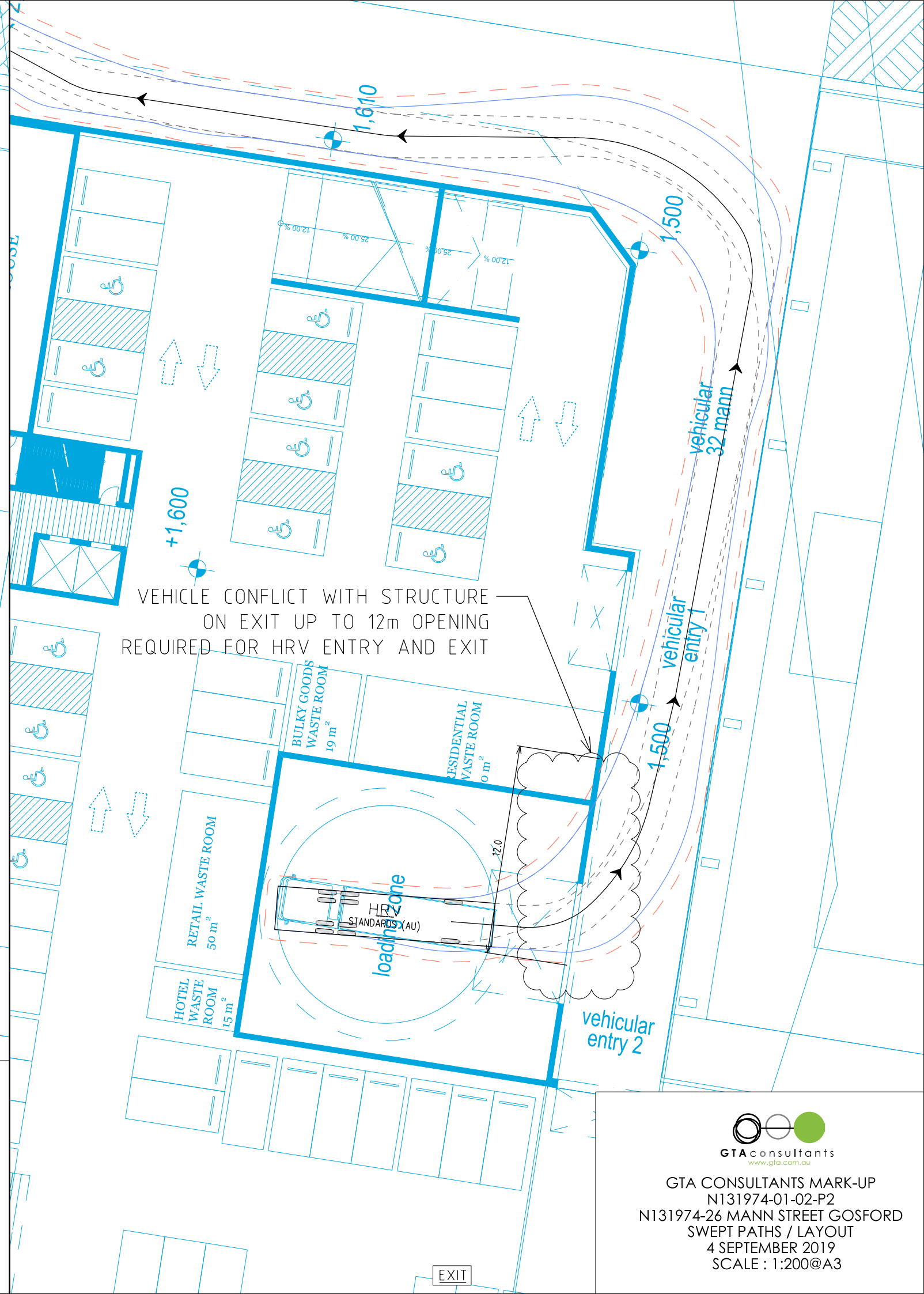
Track : 2.50

Lock to Lock Time : 6.0

Steering Angle : 35.3

SWEPT PATH KEY

- VEHICLE CENTRE LINE
 - - VEHICLE TYRE PATH
 - VEHICLE BODY PATH
 - - 600mm CLEARANCE FROM VEHICLE BODY
- ASSUMED SPEED 5km/h



GTA CONSULTANTS MARK-UP
N131974-01-02-P2
N131974-26 MANN STREET GOSFORD
SWEEP PATHS / LAYOUT
4 SEPTEMBER 2019
SCALE : 1:200@A3

