

ET Australia, Gosford

125 Donnison Street and 171 Mann Street, Gosford
Transport Impact Assessment



Prepared by: GTA Consultants (NSW) Pty Ltd for ET Australia
on 09/05/2020
Reference: N189620
Issue #: A

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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1. INTRODUCTION

01

1.1. Background & Proposal

A development application is to be lodged with the Department of Planning, Industry and Environment (DPIE) for the proposed relocation of ET Australia, an independent community based high school located in the Gosford city centre. The proposal involves relocating the existing year 7 to 10 campus from 123 Donnison Street to 171 Mann Street, Gosford, and to increase the school population from 170 students to 200 students. It is also proposed for a new year 11 and 12 campus to be opened at 125 Donnison Street, with a student population of 80.

ET Australia engaged GTA Consultants (GTA) in March 2020 to undertake a transport impact assessment for the proposed development.

1.2. Secretary's Environmental Assessment Requirements

DPIE has issued the Secretary's Environmental Assessment Requirements (SEARs) for State Significant Development (SSD) 10434 for the preparation of a transport assessment for the proposed development. Matters raised in the SEARs have been considered during the preparation of this report and addressed within specified sections, as shown in Table 1.1.

Table 1.1: Secretary's Environmental Assessment Requirements

SEARs	Report section where addressed
Transport and Accessibility	
an assessment of all relevant vehicular traffic routes and intersections for access to/ from the subject properties.	Sections 3.5, 4.4
an assessment of construction and operational traffic impacts on existing intersections, capacity of the local and classified road network.	Sections 3.6, 6
identify road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network for the development (if required).	Section 6
the adequacy of public transport, pedestrian and bicycle networks in the vicinity of the site.	Sections 3.3, 3.4, 6
access arrangements, including car and bus pick-up/drop-off facilities if proposed, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones.	Sections 4.4, 4.5, 5.2, 6
details of available on-site car parking spaces for teaching staff and visitors in accordance with existing parking requirements and justification for the level of car parking provided on-site or provided off site in association with the development.	Sections 4.4, 5.1, 5.2
an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development.	Sections 3.7, 4.4, 5
an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED.	Section 6
emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times).	Section 4.4, 5

SEARs	Report section where addressed
Consultation	
<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, local community groups and affected landowners.</p> <p>In particular, you must consult with:</p> <ul style="list-style-type: none"> Central Coast Council Transport for NSW (TfNSW) Transport for NSW (Roads and Maritime Services) <p>Consultation with TfNSW and TfNSW (RMS) should commence as soon as practicable to agree the scope of investigation.</p> <p>The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues.</p> <p>Where amendments have not been made to address an issue, a short explanation should be provided.</p>	Section 1.3
Policies, Plans, Guidelines	
<p>Strategic plans:</p> <ul style="list-style-type: none"> Future Transport 2056 Central Coast Regional Plan 2036 Gosford City Centre Development Control Plan 2018 Gosford City Centre Transport Management and Accessibility Plan Gosford Development Control Plan 2013 	Section 2

1.3. Stakeholder Engagement

GTA consulted with Council via the phone and Transport for NSW via the phone and email to provide input into the preparation of this transport assessment. The key items that have been raised and the report section where these topics are addressed are shown in Table 1.2. TfNSW email stakeholder correspondence is included as Appendix A.

Table 1.2: Stakeholder engagement

Stakeholder	Comment	Report section where comment addressed
Steven Green, Council	GTA spoke to Steven over the phone on 16/04/20. Steven is aware of the school and proposal and does not see any concerns from a traffic/transport perspective, he indicated that it is in a good location with great connectivity to public transport services.	N/A
Kumar Kuruppu, Transport for NSW (includes Roads and Maritime Services)	<p>GTA spoke to Kumar over the phone on 16/04/20. He acknowledged receipt of GTAs initial email (8/04) outlining the project and outlined he had provided input into the SEARs. GTA provided an overview of the project and our assessment approach. Kumar requested any data/ analysis from external reports referenced within this report to be included in the body of the report, to avoid Transport for NSW needing to search for the original document. He also advised he would provide a response via email so that the consultation could be tracked.</p> <p>Kumar provided an email response 22/04, requesting an outline of the project and assessment approach. GTA responded, as detailed in Appendix A.</p>	Section 3.5

1.4. 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.

1.5. References

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

- an inspection of the site and its surrounds
- Gosford City Centre Development Control Plan (DCP) 2018
- Gosford Local Environmental Plan (LEP) 2014
- 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 2890.2:2018
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009

INTRODUCTION

- ET Australia Secondary College Site Feasibility, SHAC, dated 20 March 2020
- Gosford Alive – Transport Assessment Revision A, GTA Consultants, 22 August 2019
- other documents and data as referenced in this report.

2. STRATEGIC CONTEXT

02

This section provides an overview of the strategic context of the proposed development, including the relevant planning strategies and opportunities.

2.1. Regional Context

Gosford is a regional city on the Central Coast of New South Wales located midway between Sydney and Newcastle. Central Coast Regional Plan 2036 (October 2016) projects the region's population will increase by 22 per cent (75,500 people) over twenty years to 2036. An opportunity has been presented to meet the future transportation needs of the growing regional centre. Capitalising on Gosford's geographic position and well-connected infrastructure will play a key role in meeting this challenge.

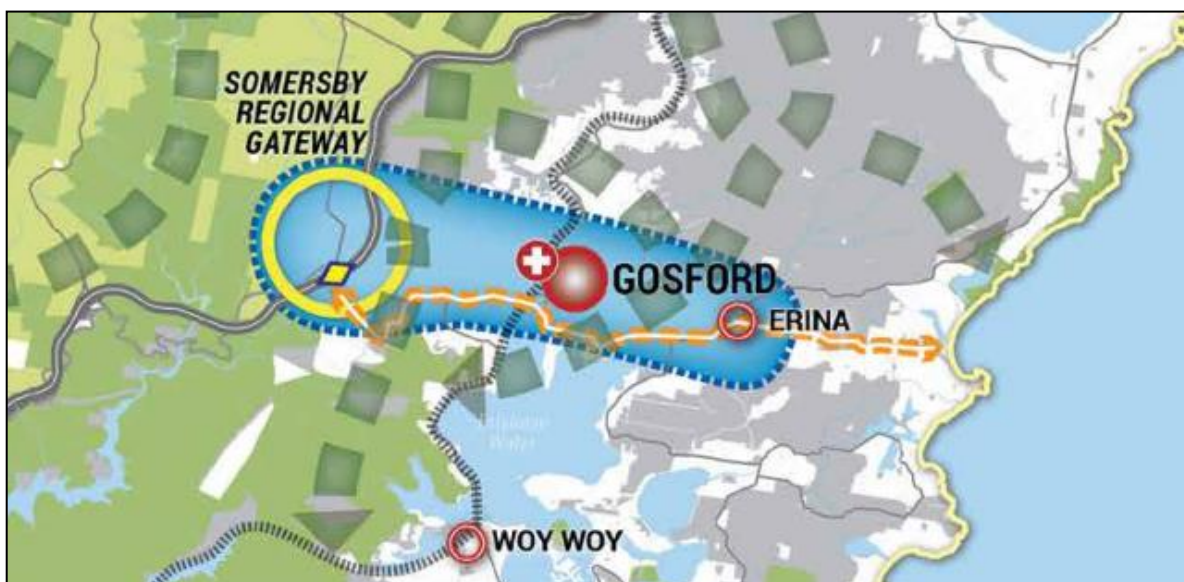
2.2. Planning Context

The following key strategies and plans have influenced development opportunities in local and regional areas, together with real effects on future travel demand and mode splits.

The Central Coast Regional Plan ('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.

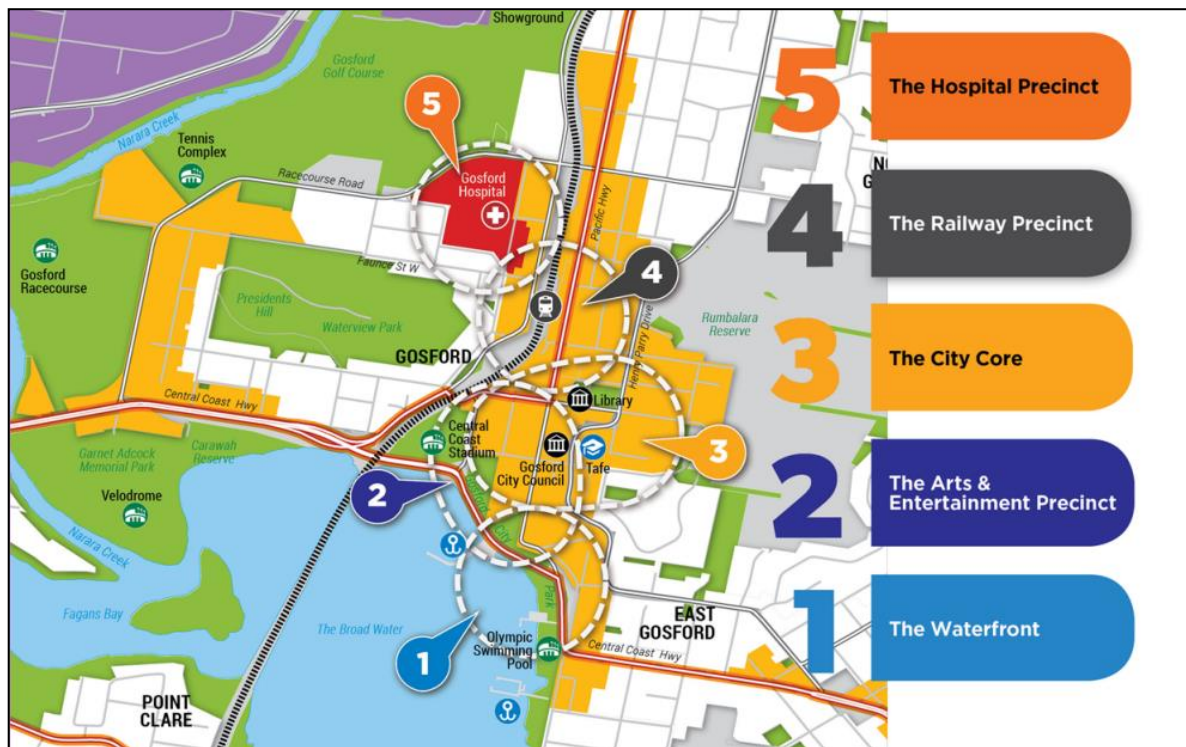
The area between the Somersby Regional Gateway and Erina has been identified as a Regional Growth Corridor with Gosford city centre at its core. Infill high density housing is anticipated in these locations together with a variety of land uses including health, retail, commercial and sporting/ recreational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

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.

3. EXISTING CONDITIONS

03

3.1. Location

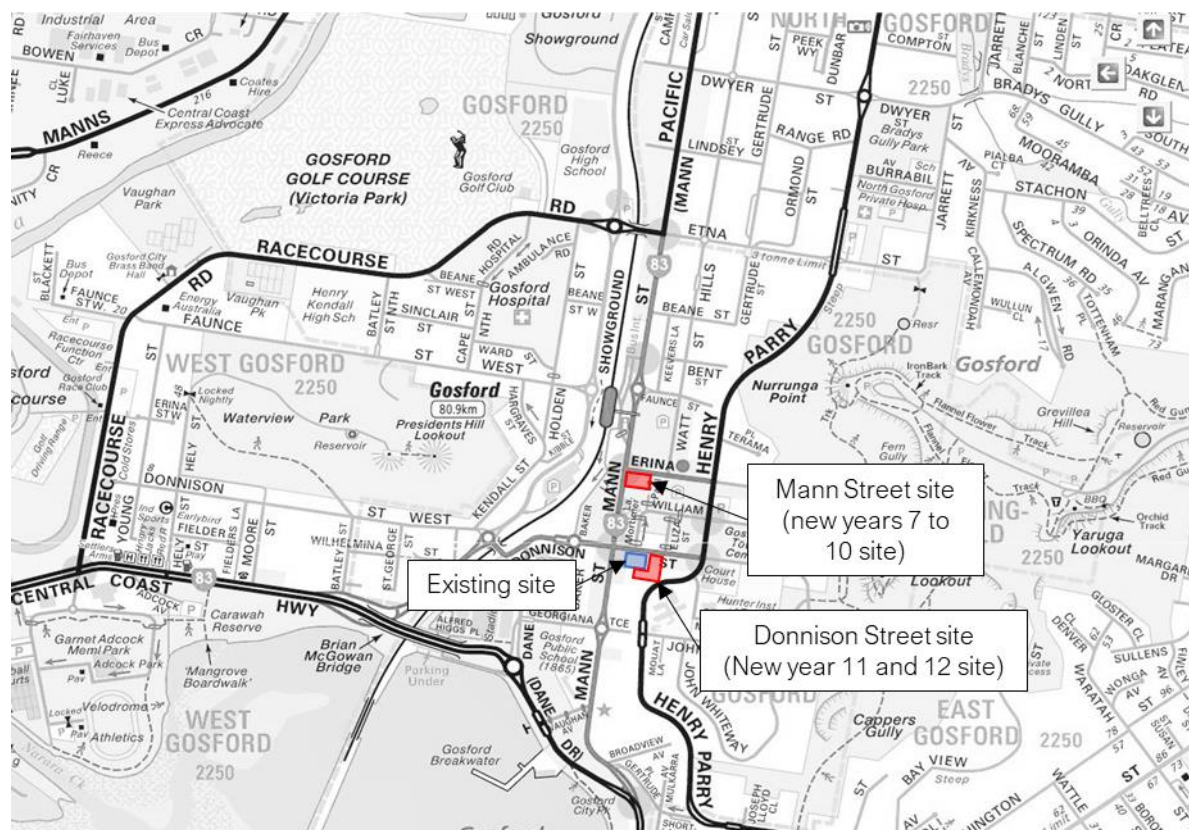
The year 7 to 10 and year 11 to 12 subject sites are respectively located at 171 Mann Street and 125 Donnison Street, Gosford, herein respectively referred to as the 'Mann Street' and 'Donnison Street' sites. Both sites are centrally located within Gosford city centre and within 500 metres proximity of each other. Both sites are zoned B3 – commercial core.

The Mann Street site is occupied by the Imperial Centre, a shopping centre fronting Mann Street to the west, Erina Street North to the north, Henry Parry Drive to the east and William Street to the south. The Mann Street site is proposed to be located within the north-western corner of the Imperial Centre on level two. The Donnison Street site is currently occupied by ET Australia's adult training college on the ground level and a commercial tenant on the first floor that is vacating the premises in August 2020.

The surrounding properties include medium density commercial space with ground floor retail along the key frontages. Kibble Park, a public recreational space, is centrally located between both sites.

The location of the existing and proposed sites and their surrounding environs is shown in Figure 3.1 and Figure 3.2.

Figure 3.1: Existing and proposed subject sites and surrounding road network



Base image source: Sydney

Figure 3.2: Existing and proposed subject sites and their environs



Base image source: Nearmap

3.2. Existing Travel Behaviour

3.2.1. Staff

Questionnaire surveys were distributed to the school on 20 March 2020 to understand the existing staff travel modes. 100 per cent of the 35 staff responded to the staff survey, with the travel mode share results provided in Table 3.1

Table 3.1: Existing mode of travel to work (school staff)

Mode of travel	Mode Split
Car, as driver or passenger	69%
Dropped off	3%
Train	9%
Bus	9%
Motorcycle	3%
Cycle	3%
Walked only	3%
Other	3%

The survey indicates a high proportion of staff drive to work, however over half of staff driving to work carpool with other staff members. On average for all staff driving to work (regardless of whether staff participate in carpooling), each vehicle contained 1.8 staff members.

The staff surveys also indicated that out of staff that travel to work by car as the driver or passenger, 30 per cent park on-site, 60 per cent park at nearby off-site car parks and 10 per cent park on street.

For comparison purposes, reference has been made to Australian Bureau of Statistics (ABS) Journey to Work data for the area surrounding the site. A summary of the journey to work data is shown in Table 3.2.

Table 3.2: Existing mode of travel to work (Gosford area)

Mode of travel	Mode Split
Car, as driver	85%
Car, as passenger	4%
Train	5%
Bus	2%
Motorcycle	1%
Cycle	0%
Walked only	2%
Other	2%

The data outlines that 89 per cent of workers in the area travel to work by car as driver or passenger compared to 69 per cent from the school.

3.2.2. Student

Student surveys were collected as a class exercise by the school teachers, with 140 student responses received. The results are provided in Table 3.3.

Table 3.3: Existing mode of travel to school (school students)

Mode of travel	Mode Split
Car	11%
Public transport	71%
Both car and public transport	15%
Walked only	2%

The survey indicates a greater proportion of students (around 86 per cent) use public transport with 11 per cent arriving to and from school by private car. Of these 86 per cent, 15 per cent travel to and from school using both public transport and private car. It is assumed that the private car is used to drop students off at public transport facilities, with students arriving into/ departing from Gosford city centre via public transport.

3.3. Walking and Cycling Infrastructure

3.3.1. Pedestrian Access

Gosford city centre caters well for high pedestrian activity with established pedestrian networks, footpaths, through site connections and provision of ample formal crossing facilities. Pedestrian activity

is generally high, especially along and across Mann Street and the pedestrian only section of William Street. The pedestrian network is well established and would link both sites well with Gosford Interchange. The established city centre environment and pedestrian amenity is illustrated in Figure 3.3 to Figure 3.6.

Figure 3.3: Mann Street site frontage (looking south)



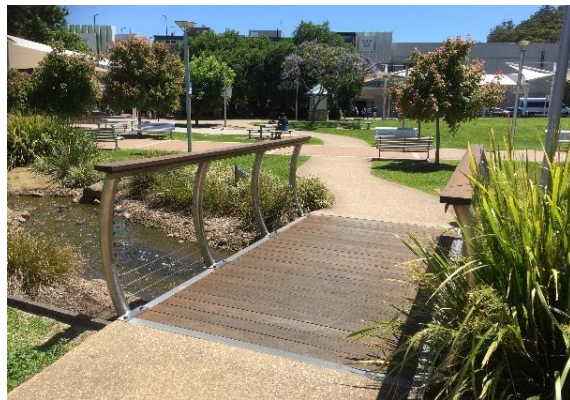
Figure 3.4: Mann Street signalised pedestrian crossing



Figure 3.5: Pedestrian only section of William Street



Figure 3.6: Kibble Park pedestrian facilities



3.3.2. Cycle Access

The Central Coast Cycling Guide identifies more than 52 kilometres of both shared and off-road cycling paths in Gosford LGA with an additional 39 kilometres proposed. Cycle routes connect Gosford city centre to different areas of the Central Coast including Terrigal, The Entrance and Umina.

The current conditions near the sites cater for cycle traffic but are limited in their capacity to store bicycles. No formal bicycle storage arrangements exist on-site.

3.4. Public Transport

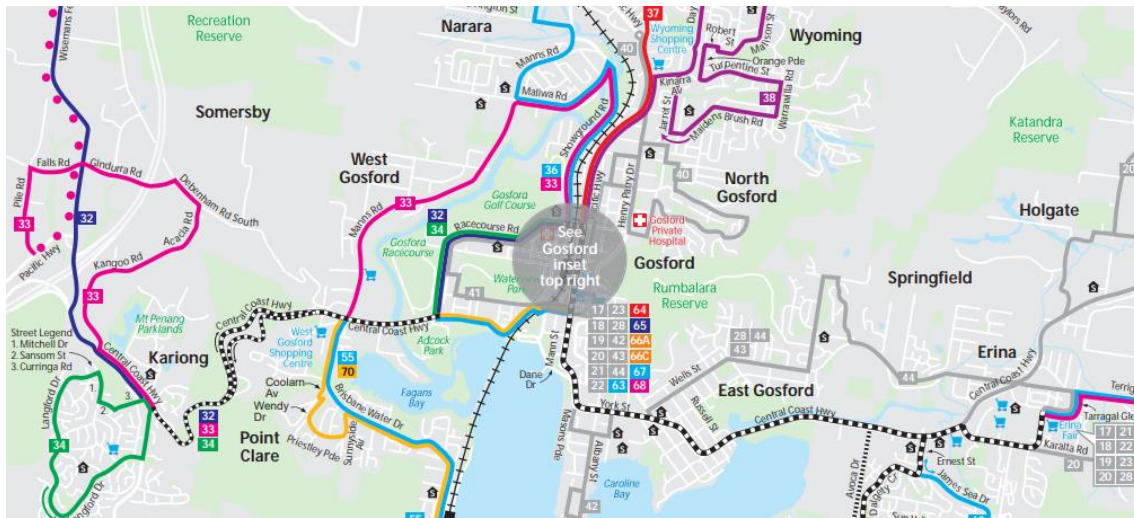
The sites are well served by public transport services with Gosford Interchange respectively within 240 and 500 metres to the north-west of the Mann Street and Donnison Street sites. Gosford is considered a major node in the Sydney Trains network and is well served by the Central Coast and Newcastle Line.

EXISTING CONDITIONS

Gosford Interchange also functions as one of the main bus interchanges in the Central Coast region. Many bus routes travel through the interchange, servicing key destinations including Tuggerah, Terrigal and Umina Beach.

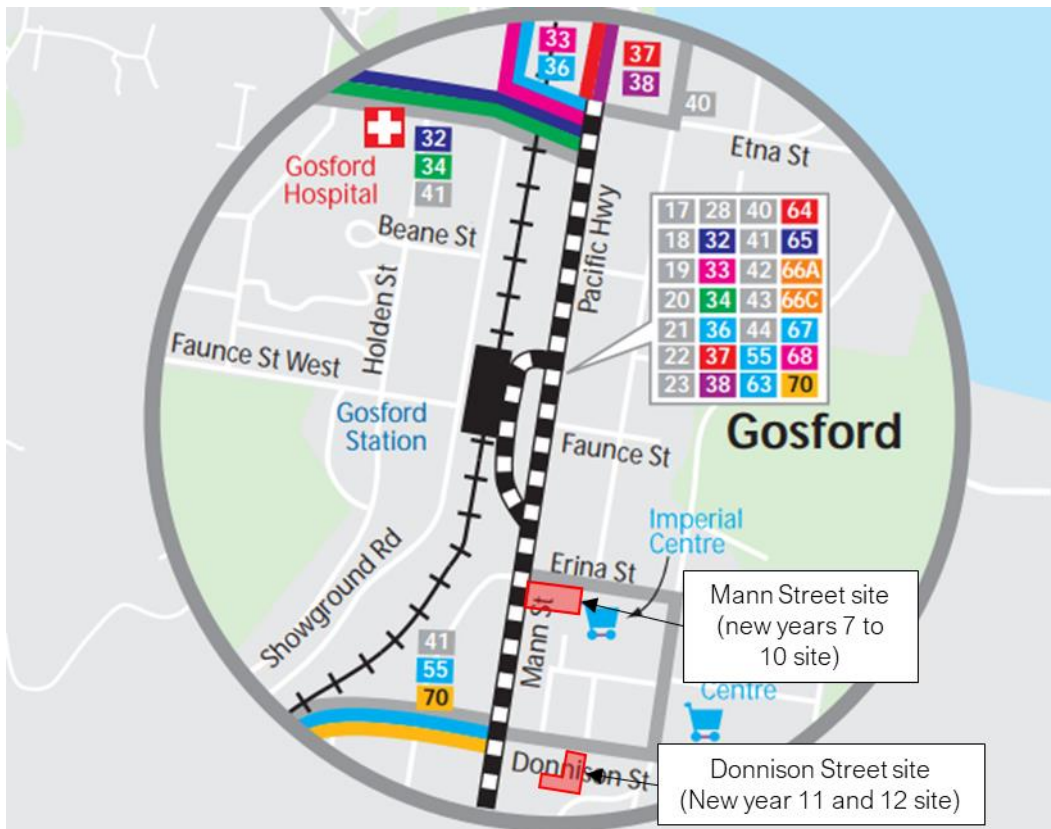
A review of the rail and bus services available near the sites are illustrated in Figure 3.7 and Figure 3.8 and summarised in Table 3.4.

Figure 3.7: Surrounding public transport network



Source: Busways

Figure 3.8: Gosford Interchange public transport map



[1] Source: Busways

Table 3.4: Public transport summary

Service	Route #	Route Description	Frequency On/Off-Peak
Train	CCN	Central Coast & Newcastle Line	15 min/ 30 min
Bus	17	Gosford to The Entrance North via Bateau Bay & Long Jetty	Limited AM and PM services
	18	The Entrance to Gosford via Long Jetty & Tumby Umbi	
	19	Gosford to Wyong via Erina Fair, Bay Village & Tuggerah	60 min/ 60 min
	20	Gosford Loop via Erina Fair, Holgate & Matcham	Limited AM and PM services
	21-23	Gosford to The Entrance North via Erina Fair, Bateau Bay, Bay Village & Long Jetty	60 min/ 60 min
	28	The Entrance to Gosford via Long Jetty, Bay Village, Tumby Umbi, Erina Fair & Springfield	Limited evening services
	32	Spencer-Mangrove-Somersby-Gosford	Limited AM and PM services
	33	Gosford & West Gosford/Somersby Industrial Areas	
	34	Gosford-Kariong Loop-Gosford	30 min/ 60 min
	36	Gosford to Niagara Park & Tuggerah (loop service)	
	37	Gosford-Lisarow-Ourimbah-Tuggerah	
	38	Gosford-Wyoming Loop-Gosford	30 min/ 60 min mornings and evenings only
	40	Gosford Loop services (via North Gosford, West Gosford and Point Frederick)	30 min/ 60 min (and 60 min/ 120 min)
	43	Springfield to Gosford via East Gosford	30 min. mornings only
	44	Gosford to Erina Fair via East Gosford & Springfield	30 min/ 30 min
	63	Gosford & Saratoga/ Davistown via Green Point & Kincumber	60 min/ 60 min
	64	Gosford to Woy Woy via Kincumber & Empire Bay	30 min/ 60 min
	65	Gosford to Wagstaffe via Kincumber & McMasters Beach	Limited AM and PM services
	66A and 66C	Gosford & Copacabana/ Avoca Loop via Green Pt & Kincumber	30 min AM and PM only
	67-68	Gosford & Nth Avoca via Terrigal	60 min/ 60 min

3.5. Road Network

3.5.1. 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. TfNSW (formally Roads and Maritime Services) is 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.

TfNSW 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 TfNSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or TfNSW 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.

3.5.2. Surrounding Road Network

Donnison Street functions as a collector road and is aligned in an east-west direction along the northern boundary of the Donnison Street site. It is a two-way road generally configured with one traffic lane and one parking lane in each direction, with additional traffic lanes at key intersections.

Time restricted kerbside parking is generally permitted on the southern side, with bus zones and no stopping zones on the northern side near the site. Donnison Street west of Henry Parry Drive is sign posted as a high pedestrian area and has a 40 kilometre per hour speed limit and is shown in Figure 3.9.

Figure 3.9: Donnison Street (looking east to Henry Parry Drive)



Erina Street East functions as a collector road and is aligned in an east-west direction along the northern boundary of the Mann Street site. It is a two-way road generally configured with one traffic lane and one parking lane in each direction, with additional traffic lanes at key intersections. Erina Street East is sign posted as a high pedestrian area and has a 40 kilometre per hour speed limit and is shown in Figure 3.10.

Figure 3.10: Erina Street East (looking east)



Mann Street functions as a sub-arterial road and is aligned in a north-south direction along the western boundary of the Mann Street site. It is a two-way road generally configured with one traffic lane in each direction, with additional traffic lanes at key intersections. Indented time restricted parking is provided between Donnison Street and Erina Street East. Mann Street is sign posted as a high pedestrian area and has a 40 kilometre per hour speed limit, illustrated in Figure 3.11.

Figure 3.11: Mann Street (looking south)



William Street functions as a local road and is aligned in an east-west direction, traversing Kibble Park west of Henry Parry Drive along the Mann Street sites southern boundary. It is a two way road generally configured with one traffic lane and one parking lane in each direction. West of Henry Parry Drive, William Street primarily provides access to the Imperial Centre. It provides a shared zone with a 10 kilometres per hour speed limit near the imperial centres pedestrian entry that transitions into a pedestrian only zone at its most western end close to Mann Street. William Street is shown in Figure 3.12 and Figure 3.13.

Figure 3.12: William Street (looking west)



Figure 3.13: William Street (looking west)



Paul Lane extends further north beyond William Street adjacent to the western boundary of the Imperial Centre. It provides two-way access to Imperial Centre loading areas and restricted area at-grade parking associated with the retail sites fronting Mann Street.

Henry Parry Drive is classified as a State Road linking directly with the Pacific Highway to the north and Central Coast Highway to the south, as well as several local and connecting roads along its length. It provides two traffic lanes in each direction, with a posted speed limit of 50 kilometres per hour. Kerbside parking is not permitted in the immediate vicinity.

3.5.3. Surrounding Intersections

The following key intersections currently exist near the sites:

- Henry Parry Drive/ Erina Street East (signalised)
- Henry Parry Drive/ William Street (signalised)

- Henry Parry Drive/ Donnison Street (signalised)
- Mann Street/ Donnison Street (signalised)
- Mann Street/ Erina Street East (signalised).

3.6. Road Network Operation

Typically, GTA would complete classified intersection surveys to support the Transport Assessment however due to current global circumstances, current traffic conditions are not considered typical and as such, traffic surveys would not be considered representative.

GTA prepared a Traffic and Transport Assessment¹ (GTA, 22 August 2019) to support the Gosford Alive development, located at 136-148 Donnison Street, Gosford, immediately east of the Mann Street and Donnison Street sites. The GTA report is available on the Department of Planning major projects website and has been reviewed and key assumptions used within this study.

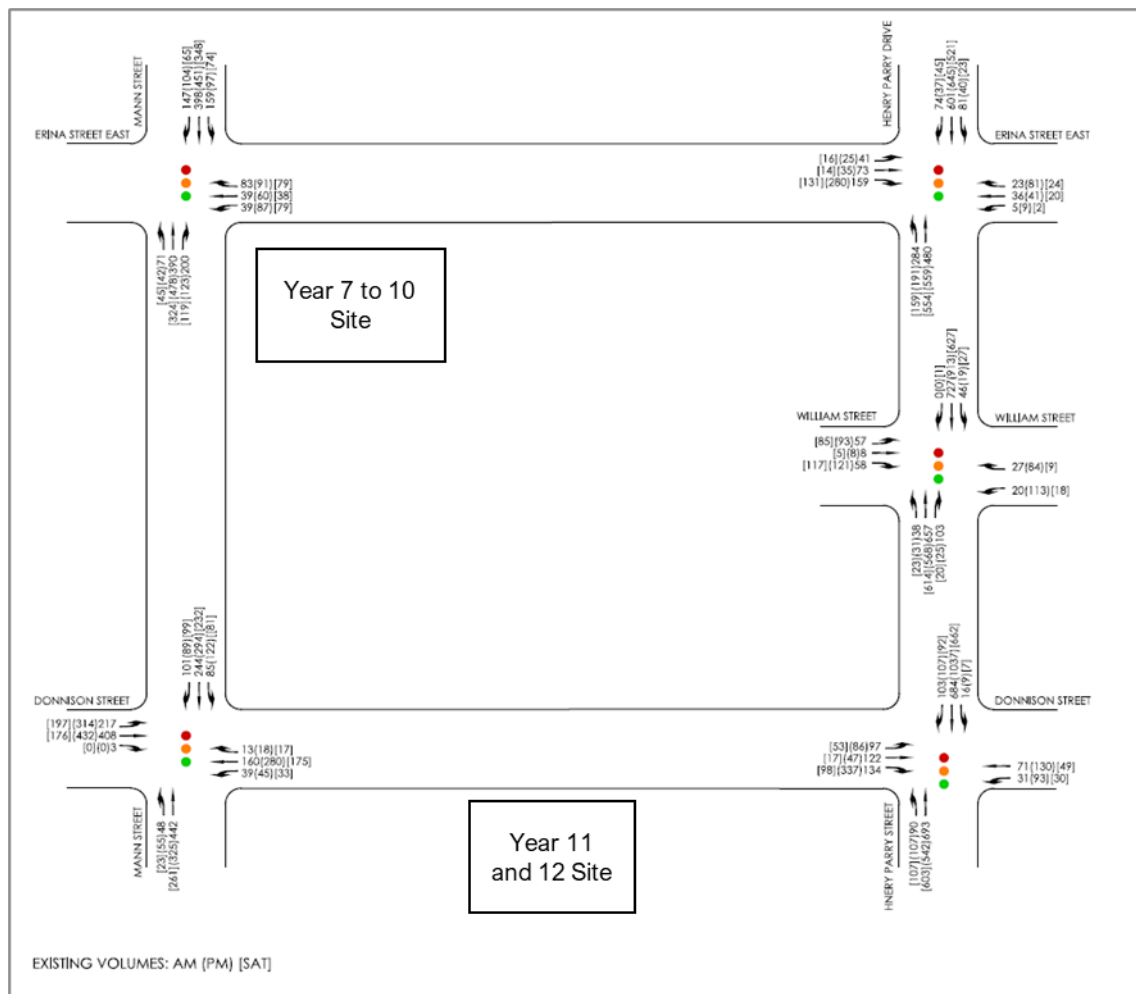
Traffic surveys of the key surrounding intersections were commissioned by GTA on Thursday 16 May 2019 during the AM and PM road network peak periods. Peaks were determined to occur at the following times:

- AM Peak Hour: 8:30am – 9:30am
- PM Peak Hour: 4:15pm – 5:15pm.

The traffic volumes have been excerpted from the GTA Report in Figure 3.14.

¹ Gosford Alive – Transport Assessment Revision A, GTA Consultants, 22 August 2019

Figure 3.14: Existing peak hour traffic volumes (GTA, 2019)



Base image source: Figure 3.11 page 20, Gosford Alive – Transport Assessment Revision A, GTA Consultants, 22 August 2019

SIDRA Intersection network analyses were carried out for all intersections during the peak periods to understand existing road network operation and the impact of cumulative queuing and delays from intersections in close proximity.

The commonly used measure of intersection performance, as defined by Roads and Maritime, is vehicle delay. SIDRA determines the average delay that vehicles encounter and provides a measure of the level of service. Table 3.5 shows the criteria that SIDRA adopts in assessing the level of service.

Table 3.5: 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

The SIDRA results have been excerpted from the GTA Report in Table 3.6, presenting a summary of the existing operation of the intersections, with full results excerpted in Appendix B of this report.

Table 3.6: Existing operating conditions (GTA, 2019)

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (sec)	95th Percentile Queue (m)	Level of Service (LOS)
Henry Parry Drive/ Donnison Street	AM	0.89	33	270	C
	PM	0.92	33	200	C
	Sat	0.56	15	72	B
Henry Parry Drive/ William Street	AM	0.57	13	76	A
	PM	0.84	16	65	B
	Sat	0.48	9	52	A
Henry Parry Drive/ Erina Street East	AM	0.68	17	84	B
	PM	0.61	23	173	B
	Sat	0.48	14	56	A
Mann Street/ Erina Street East	AM	0.65	12	74	A
	PM	0.70	15	98	B
	Sat	0.43	12	52	A
Mann Street/ Donnison Street	AM	0.73	22	111	B
	PM	0.65	21	101	B
	Sat	0.45	18	56	B

Table source: Table 3.5 page 21, Gosford Alive – Transport Assessment Revision A, GTA Consultants, 22 August 2019

The SIDRA results indicate that all intersections analysed operate at acceptable levels of service of C or better. The GTA Report notes that longer queues do occur at the Henry Parry Drive/ Donnison

Street intersection in both peak hours due to vehicles traveling both northbound and southbound along Henry Parry Drive avoiding delay associated with vehicles turning right.

In addition, GTA completed site observations in 2019 that indicate that the road network surrounding the site generally operates well with some queuing and delay for select approaches during the weekday peak periods, confirming the SIDRA intersection results contained in the GTA Report.

In response to the staff travel survey, 96 per cent of staff that drive to work stated they arrive before 8:30am, and 71 per cent stated they leave work between 2:30pm and 4:30pm. It is therefore likely that peak vehicular activity associated with the school is earlier than the respective identified road network peaks of 8:30am to 9:30am and 4:15pm to 5:15pm. As such, it is expected that intersection operation would be marginally improved during the actual school morning and afternoon peak periods.

3.7. Car Parking and Set Down/ Pick Up Activities

3.7.1. On-site parking

Two on-site car parking areas are provided, including an at-grade car parking area at the rear of 123 and 125 Donnison Street, Gosford, accessed from Henry Parry Drive, as well as an undercover driveway along the western edge of 125 Donnison Street, accessed from Donnison Street. The car parking areas are available for exclusive use by 125 Donnison Street tenants, noting that no vehicular access is provided between the two areas.

16 spaces across the two parking areas are currently managed by ET Australia, operated on a monthly lease basis, intended to be shared between year 7 to 10 staff, adult training college staff and ET Australia management staff. Currently, six spaces are leased by year 7 to 10 staff, seven are leased to external people by LJ Hooker Commercial on behalf of ET Australia due to lack of demand by staff, one is vacant and two generally remain empty, intended to be used for short term emergency parking, such as for plumbers/ electricians and the like.

No on-site parking is provided for parents, carers or students.

3.7.2. Off-site parking

Demand for on-street parking is generally moderate during weekdays, with most of the parking time restricted. The time restricted parking is generally limited to 1P or less on weekdays with a range of taxi zones, bus zones and loading zones also occupying kerbsides in the vicinity of the sites.

Drop off and pick up activity for the existing school currently occurs along Donnison Street. Noting the low volumes of students arriving by private car (11 per cent of students, or up to 19 students from 170), this activity is easily accommodated on-street.

In addition to on-street parking, a number of car parking facilities are provided within the Gosford city centre providing for retail and commercial use and for commuters to Sydney. These include:

- Gosford Town Centre car park (free of charge)
- Gosford Commuter car park (free of charge)
- Gosford city centre car park (charged for stays longer than 2 hours)
- Imperial Centre retail car park (charged for stays longer than 3 hours).

Both Gosford Town Centre and commuter car parks experience high demand. The staff travel survey indicates that 13 staff currently park within Gosford Town Centre car park and Gosford city centre car

park. With an average of 1.8 staff per car, this equates to eight staff cars parked in off-site parking facilities.

It is noted that the Gosford Town Centre car park is privately owned and is proposed to be demolished as part of the Gosford Alive development. It is understood that Council are currently investigating solutions to alleviate the all-day car parking shortfall within the city centre, including preparing a short-term car parking strategy for the Gosford city centre².

² Central Coast Parking Strategy, Part 1: Short-term Gosford CBD Strategy, Bitzios, 12 June 2018

4. DEVELOPMENT PROPOSAL

04

4.1. Overview

The development seeks to relocate ET Australia, an independent community based high school, from 123 Donnison Street to two sites, 171 Mann Street and 125 Donnison Street. The proposal involves relocating the existing year 7 to 10 campus from 123 Donnison Street to 171 Mann Street, Gosford, and increasing the school population from 170 students to 200 students, with the staff population remaining as 35. It is also proposed for a new year 11 and 12 campus to be opened at 125 Donnison Street, with a student population of 80 and staff population of 14.

Overall, the development results in an additional 110 year 7 to 12 students and 14 staff. The development will not require any formal construction works, only internal tenancy fit out works.

4.2. School Operation

The proposed school hours are 9:00am to 2:30pm for year 7 and 10 and 8:30am to 3:30pm for year 11 and 12, with after school extension classes and tutoring taking place Monday to Thursday for one hour following school finishing.

4.3. School Catchment

No school catchment area restrictions are imposed.

4.4. Vehicle Access and Parking

As discussed, two on-site car parking areas are provided, including an at-grade car parking area at the rear of 123 and 125 Donnison Street, Gosford, accessed from Henry Parry Drive through a left in left out access, as well as an undercover driveway along the western edge of 125 Donnison Street, accessed from Donnison Street. No vehicular access is provided between the two areas.

Currently, 16 car parking spaces are managed by ET Australia staff. At least 12 of these spaces will be retained for future use. In addition, 10 spaces currently managed by the first floor tenant will be transferred to ET Australia for their use. The current spaces are operated on a monthly lease basis, shared between year 7 to 10 staff, adult training college staff and ET Australia management staff. The 26 spaces will continue to be available for all staff (year 7 through to year 12) on a lease basis following the redevelopment.

12 additional unreserved car parking spaces are proposed to be provided within the Imperial Centre roof top parking area. These spaces will be available to all staff on a lease basis, similar to the existing arrangement. Vehicular access to the car park is provided via Erina Street East, near its intersection with Watt Street.

A minimum of 34 car parking spaces will therefore be managed by the ET Australia school across the two sites, available to staff on a lease basis. This is an increase of at least 18 spaces from existing, more than double the current provision of 16 spaces.

No parking is proposed to be provided for students, parents or caretakers at either site. This includes any formal on-street set down/ pick up areas.

The suitability of the proposed parking facilities is discussed in Section 5 of this report.

4.5. Pedestrian and Bicycle Facilities

Pedestrian access to the Donnison Street site will be similar to current arrangements for the existing school, with all access provided via Donnison Street.

Pedestrian access to the Mann Street site will be via Mann Street or Erina Street East. The site is located on level two of the Imperial Centre. Due to the gradual incline of Erina Street East between Mann Street and Henry Parry Drive, pedestrian access from Mann Street is on level 1 of the Imperial Centre whereas pedestrian access from Erina Street East is on level 1A of the Imperial Centre. Both accesses require use of either an escalator or elevator to gain access to level 2. It is likely that a significant proportion of pedestrian access will be via Erina Street East given its close proximity to the site within the Centre, as well as natural desire line from Gosford Interchange and proximity to short term parking spaces along Erina Street East and within the Imperial Centre car park that may be used for drop off/ pick up activity.

The suitability of the proposed pedestrian and bicycle facilities is discussed in Section 5.3 and 6.4 of the report.

4.6. Loading Areas

Service and emergency vehicle access for the Donnison Street site will remain as per existing arrangements. Similarly, service and emergency vehicle access for the Mann Street site will be as per existing arrangements for the Imperial Centre tenancy.

5. PARKING AND LOADING ASSESSMENT

05

5.1. Car Parking Requirements

5.1.1. Parking Requirements

The car parking requirements for different development types are set out in Gosford City Centre Development Control Plan (DCP 2018) and Local Environmental Plan (LEP 2014). DCP 2018 indicates a rate of one space per two staff and one space per 30 students for Schools, Education Establishments use. Based on the increase of 14 staff and 110 students, the development requires an additional 11 car parking spaces. Based on the future total of 35 staff and 280 students, the development requires a total of 34 car parking spaces.

DCP 2018 also requires school use to provide one motorcycle space for every 25 car parking spaces, or part thereof. Based on the requirement for 11 additional parking spaces, one motorcycle parking space is required. The provision of one motorcycle space would not be designated but easily accommodated with the public car park of the Imperial Centre.

5.1.2. Empirical Assessment of Car Parking Demand

To better understand the actual, or real parking demand associated with the proposal, a first principles assessment has been completed based on existing journey to school data. Currently, 69 per cent of staff travel to work by car (as driver or passenger), with an average of 1.8 staff per car. Given an increase in 14 staff, approximately 10 additional staff are likely to travel to work by car (as driver or passenger). If staff participate in a similar carpooling arrangements as existing staff with up to 1.8 staff per car, demand for only six car additional staff parking spaces will be generated.

5.1.3. Adequacy of Car Parking Supply

The development proposes to increase car parking supply by at least 18 car parking spaces and therefore complies with the Council's car parking requirements for 11 additional parking spaces. In addition, based on the empirical assessment of the demand, the additional on-site car parking provision is expected to be capable of accommodating the additional staff car parking demands associated with the proposed development. The additional provision of parking provides capacity for existing staff currently parking on street or off-site to park on-site should it be required following the potential demolition of the Gosford town centre car park.

Furthermore, the development will provide a minimum of 34 car parking spaces across the various car parking areas hence complying with the total DCP requirement.

The tenancy agreement with the Imperial Centre specifies the 12 parking spaces are unreserved however must be located on the roof top level of the car park. This section of the car park is open to general public use however staff will arrive prior to peak retail parking demand and will therefore be guaranteed a park. Site observations indicate the roof top experiences less parking demand compared to lower level of the Imperial Centre car park.

5.1.4. Car Parking Layout Review

Both car parking areas are existing, with no modifications proposed to the layouts or vehicle access. Both parking areas generally operate satisfactorily however it is noted that the Imperial Centre car park has an existing low clearance height of two metres.

5.2. Set Down/ Pick Up Activities

No parking is proposed to be provided for students, parents or caretakers at either site. This includes any formal on-street set down/ pick up areas. Notwithstanding, parents and carers have access to a range of suitable options when visiting both sites.

For set down/ pick up activity for the Donnison Street site, arrangements will remain similar to existing, with activity likely to occur primarily along Donnison Street. Considering the student population along Donnison Street is reducing from 170 year 7 to 10 students currently to 80 year 11 to 12 students, parking conditions along Donnison Street are likely to be improved.

Set down/ pick up activity could easily take place for the Mann Street site at a number of locations including:

- within the Imperial Centre car park (elevators on the northern side of the building connect each car park level directly to the site)
- along the northern edge of Erina Street East, within kerbside parking zones subject to 1 hour, 15 minute and 5 minutes parking restrictions between Mann Street and Henry Parry Drive
- along William Street, if required.

Each location provides sufficient pedestrian infrastructure to connect students to the sites. This includes provision of a five-metre-wide pedestrian crossing along Erina Street East, connecting the northern edge of the road with the Imperial Centre pedestrian entry.

Given only 11 per cent of students currently arrive to school via private vehicle, it is expected that the Mann Street site will generate demand for up to 22 students being dropped off before/ after school. Assuming a peak period of 30 minutes, this equates to one vehicle every one to two minutes. Given this low demand and the ample provision of on-street and off-street parking facilities available to parents/ carers, this level of activity is not expected to impact parking conditions in the surrounding area.

If parents/ carers are required to park and attend either site, this activity could easily be accommodated on street within time restricted parking, or else within the Imperial Centre retail car park or Gosford city centre car park.

5.3. Bicycle Parking

DCP 2018 indicates that one bicycle parking space is required for every five students above Grade 4. Based on an additional 110 students, 22 bicycle parking spaces are required.

To better understand the actual, or real bicycle parking demand associated with the proposal, a first principles assessment has been completed based on existing journey to school data. Currently, three per cent of staff and no students travel to work by bicycle. Given an increase in 14 staff and 110 students, no additional staff or students are likely to cycle to school.

Given the limited opportunity of the development to provide additional bicycle parking infrastructure and based on the empirical assessment that indicates there will be little to no demand for bicycle parking, the provision of no formal bicycle parking is considered appropriate.

Notwithstanding, staff storerooms and changing areas are proposed to be provided at both sites. This area could be used for bicycle storage if required.

Furthermore, a bicycle parking shed with capacity for 38 bicycles and eight lockers are provided at Gosford Interchange, as well as bicycle hoops along Mann Street and within Kibble Park that could be used in lieu for formal onsite parking for students. These spaces are near the sites, easily accessible and are in well-lit areas with good active and passive surveillance.

5.4. Loading Arrangements

Given service and emergency vehicle arrangements are proposed to be maintained as per arrangements for the existing developments, they are considered appropriate.

6. TRAFFIC AND ACTIVE ASSESSMENT

06

6.1. Overview

The traffic impact assessment for both sites has been completed with consideration for the following:

- Identifying the traffic generation characteristics associated with the proposed sites.
- Off-setting traffic associated with the existing uses.
- Assessing the net change in traffic on the surrounding intersections.

6.2. Traffic Generation

6.2.1. Anticipated Trips

Staff working at the new year 11 and 12 campus are expected to maintain similar travel patterns to the staff travelling to/ from the existing school. The anticipated number of staff travelling to/ from the proposed sites via each mode are summarised in Table 6.1.

Table 6.1: Staff trips by mode

Mode of travel	Mode Split	Mann Street (Year 7 to 10)	Donnison Street (Year 11 to 12)
		35 staff	14 staff
Car, as driver or passenger	69%	24	10
Dropped off	3%	1	0
Public Transport	18%	6	2
Other	12%	4	2

Given the Mann Street site is closer to the Gosford Interchange than the current Donnison Street site, some private mode share reduction for year 7 and 8 students may occur as parents/ carers are more comfortable allowing students to walk between school and Gosford Interchange. Similarly, a higher proportion of students at the new Donnison Street site are likely to catch public transport compared to existing given the mature age of students. For the purpose of this assessment, students attending the Mann Street and Donnison Street sites are assumed to maintain similar travel patterns to students travelling to/ from the existing school irrespective of potential future mode shifts towards public transport.

The anticipated number of students travelling to/ from the proposed sites via each mode is summarised in Table 6.2.

Table 6.2: Students trips by mode

Mode of travel	Mode Split	Mann Street (Year 7 to 10)	Donnison Street (Year 11 to 12)
		200 students	80 students
Car	11%	22	9
Public transport	71%	142	57
Both car and public transport	15%	30	12
Walked only	2%	4	2

For each staff member or student that is dropped off, two trips are assumed to be generated. For example, 22 students are expected to be dropped off to the Mann Street site however this represents 44 trips on the network (22 inbound and 22 outbound). If multiple students or staff members arrive in the same vehicle then the number of vehicles and therefore trips on the network are reduced. Currently on average, 1.8 staff occupy one vehicle hence for every five staff arriving by car, only three vehicles are required. For the purpose of providing a conservative assessment, it is assumed that 1.5 staff arrive per vehicle and all students arrive independently.

On this basis, each site could be expected to generate up to the following vehicle trips before and after school:

- Mann Street site could generate 62 vehicle trips (18 staff and 44 student vehicle trips)
- Donnison Street site could generate 25 vehicle trips (7 staff and 18 student vehicle trips).

6.2.2. Existing Site Generated Traffic Volumes

Currently and based on the same assumptions as above, the Donnison Street site could generate up to 49 vehicle trips (18 staff and 38 student) for 170 students and 35 staff.

Traffic generation estimates for the existing Imperial Centre site have been sourced from Transport for NSW *Guide to Traffic Generating Developments Updated Traffic Survey TDT 2013/04a* (RMS, 2013) which suggests a rate for 6.2 vehicle trips per 100 square metres Gross Leasable Floor Area (GLFA) for shopping centres over 10,000 square metres GLFA, noting it is understood the Imperial Centre is around 13,600 square metres GLFA. In estimating the weekday AM peak hour traffic generation rate, a 0.5 factor has been applied to the weekday PM peak hour rate to account for slower trade during the morning.

It is understood that the tenancy within the Imperial Centre proposed to be occupied by ET Australia covers some 2,000 square metres of GLFA. Based on traffic generation rates for shopping centres, the Mann Street site has been approved to generate in the order of 62 and 124 vehicle movements respectively during the weekday AM and weekday PM peak hours.

6.3. Traffic Impact

A comparative analysis of the existing and proposed traffic generation estimates for each site indicates that the development would represent a reduction in traffic accessing the Donnison Street site in any peak hour, and no net increase in vehicle generation previously approved for the Imperial Centre

tenancy in any peak hour, with a significant reduction in vehicle generation previously approved in the PM peak hour.

This development will therefore not inherently change traffic throughout the Gosford city centre in the weekday AM and PM peak hours and would clearly have a nominal impact on the road network surrounding the site. As such, the traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

6.4. Walking and Cycling Network

Pedestrian access along Donnison Street for year 11 and 12 staff/ students and along Mann Street and Erina Street East for year 7 to 10 staff/ students are ideal as they provide a high level of amenity, connecting staff and students to the Gosford city centre's well-established existing pedestrian network. In addition, each location is proximate to public transport services and pick-up/ drop-off locations, with formal crossing opportunities provided along each leg of signalised intersections within the city centre, as well as midblock along Mann Street and Erina Street East, ensuring students have appropriate travel paths to/ from school.

6.5. Public Transport

As discussed, both sites are well located close to high frequency existing bus and train services. Several local and regional area services travel through the area, connecting students and staff to major residential nodes within the Central Coast. This high level of convenience is expected to strengthen public transport use while limiting the frequency of private car use for both sites.

6.6. Crime Prevention through Environmental Design

The key considerations of Crime Prevention through Environmental Design (CPTED) are to create a safe and secure environment, assist in minimising the incidence of crime and contribute to perceptions of increased public safety. There are four main principals of CPTED:

- Natural surveillance
- Access control
- Territorial reinforcements
- Space management.

Whilst this proposal does not affect the existing design of carparking, pedestrian and road networks it is recommended that the existing CPTED developed for the Imperial Centre be reviewed to ensure access to car parking and pedestrian pathways are well lit and have good surveillance.

6.7. Construction Impacts

Given construction works will consist of tenancy fit out only, the development is likely to only generate around five vehicles per day during the fit out. As such, construction of the development will have a minimal impact to the operation of the surrounding road network.

7. CONCLUSION

07

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

1. ET Australia is relocating from 123 Donnison Street, Gosford, to two sites, 171 Mann Street and 125 Donnison Street. The development seeks to relocate the existing year 7 to 10 campus from 123 Donnison Street to Mann Street, and to open a new year 11 and 12 campus at 125 Donnison Street.
2. The total school population is proposed to be increased from 170 year 7 to 10 students with 35 teachers, to 200 year 7 to 10 students with 35 teachers and 80 year 11 to 12 students with 14 teachers.
3. The site and surrounding area are clearly capable of supporting the proposed development on transport grounds with staff, students and parents/ carers able to travel to and from the sites with relatively minor impacts on the surrounding local road network.
4. The pedestrian and vehicular site access arrangements are appropriate and able to accommodate the anticipated peak traffic volumes.
5. The proposal will increase on-site car parking supply across the two sites by at least 18 parking spaces in accordance with DCP 2018. The additional provision of parking provides capacity for existing staff currently parking on street or off-site to park on-site should it be required following the potential demolition of the Gosford town centre car park.
6. The development will provide a minimum of 34 parking spaces in accordance with DCP 2018 for the total development.
7. The provision of loading facilities is expected to be adequate to service the development.
8. Traffic generation will be low and relatively consistent, if not less, than the volumes generated by the existing use of each site.
9. The proposal would have negligible impact to the existing traffic, active and public transport networks near the school.

A: STAKEHOLDER CONSULTATION

Ingrid Bissaker

From: Ingrid Bissaker
Sent: Wednesday, 22 April 2020 1:24 PM
To: Development hunter
Cc: Karen McNatty
Subject: RE: ET Australia, Gosford relocation (SSD 10434) - Transport and accessibility

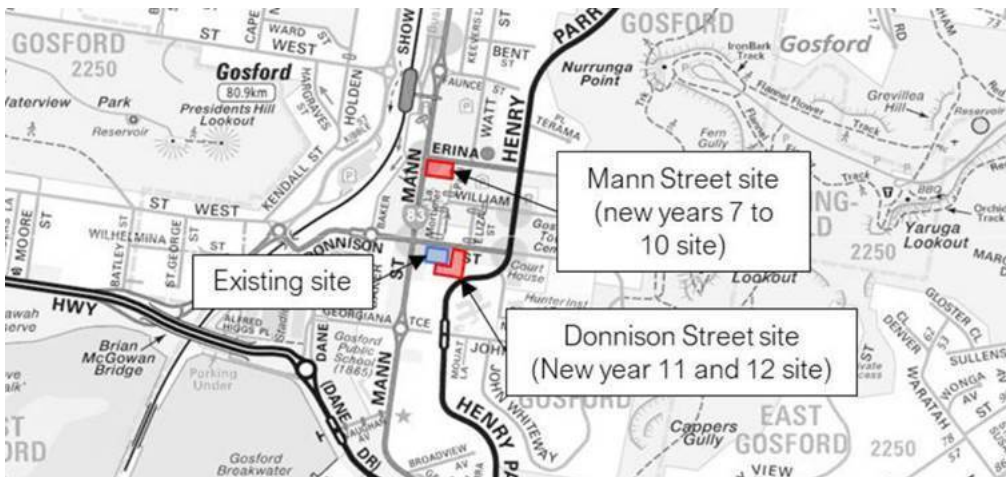
Hi Kumar,

Thank you for your email. I understand Karen McNatty from our office spoke to you last week regarding this development. I expect the below email to effectively outline items from your discussion.

Development overview

The development seeks to relocate ET Australia, an independent community based high school, from 123 Donnison Street to two sites, 171 Mann Street and 125 Donnison Street. The proposal involves relocating the existing year 7 to 10 campus from 123 Donnison Street to 171 Mann Street, Gosford, and increasing the school population from 170 students to 200 students, with the staff population remaining as 35. It is also proposed for a new year 11 and 12 campus to be opened at 125 Donnison Street, with a student population of 80 and staff population of 14.

Overall, the development results in an additional 110 year 7 to 12 students and 14 staff. The development will not require any formal construction works, only internal tenancy fit out works.



1. Overall methodology of study,

To understand the parking and traffic generating characteristics of the development, GTA have completed staff and student travel mode surveys of the existing school. The staff survey indicates a high proportion of staff travel to school via car as driver or passenger (71 per cent), however over half of staff driving to work carpool with other staff members, with each vehicle on average containing 1.8 staff members. The student survey indicates a greater proportion of students (around 86 per cent) use public transport with 11 per cent arriving to and from school by private car.

As such, the school currently generates a low volume of traffic (up to 49 vehicle movements in each school peak hour) and is expected to continue generating a low volume of traffic following the increase in staff and students.

2. Intersections you are proposing to analyse,

Typically, GTA would complete classified intersection surveys to support the Transport Assessment however due to current global circumstances, current traffic conditions are not considered typical and as such, traffic surveys would not be considered representative.

Notwithstanding, GTA prepared a Traffic and Transport Assessment¹ (GTA, 22 August 2019) to support the Gosford Alive development, located at 136-148 Donnison Street, Gosford, immediately east of the proposed Mann Street and Donnison Street school sites. The GTA report is available on the Department of Planning major projects website and has been reviewed and key outtakes included in the study. This includes traffic volumes and SIDRA intersection network analyse results for the following intersections:

- Henry Parry Drive/ Erina Street East (signalised)
- Henry Parry Drive/ William Street (signalised)
- Henry Parry Drive/ Donnison Street (signalised)
- Mann Street/ Donnison Street (signalised)
- Mann Street/ Erina Street East (signalised).

To assist Transport for NSW review process, all relevant information from the GTA Report (August, 2019) will be included in the report and referenced appropriately.

3. Scope of traffic and pedestrian survey,

See response to question 2 for traffic survey information.

GTA have visited the Gosford City Centre on a number of occasions. Gosford city centre caters well for high pedestrian activity with established pedestrian networks, footpaths, through site connections and provision of ample formal crossing facilities. Pedestrian activity is generally high, especially along and across Mann Street and the pedestrian only section of William Street. The pedestrian network is well established and would link both sites well with Gosford Interchange.

Considering the high public transport mode share of students, the development is expected to generate an additional 100 pedestrian trips traveling to/ from the Gosford Interchange. It is noted that less pedestrians will be traveling to the Donnison Street site compared to existing (20 less staff and 90 less students than existing). The additional 100 walking trips will therefore be concentrated along a 150 metre route between Gosford Interchange and Imperial Centre, where footpaths widths of between 3 to 3.5 metres will easily accommodate this additional demand.

4. Proposed modelling to be used,

See response to question 2 above for existing condition SIDRA intersection network analysis.

A comparative analysis of the existing and proposed traffic generation estimates for each site indicates that the development would represent a reduction in traffic accessing the Donnison Street site in any peak hour (20 less staff and 90 less students than existing), and no net increase in vehicle generation previously approved for the Imperial Centre tenancy in any peak hour (2,000sq.m GLFA, application of TfNSW shopping centre traffic generation rates for shopping centres with over 10,000sq.m GLFA), with a significant reduction in vehicle generation previously approved in the PM peak hour.

This development will therefore not inherently change traffic throughout the Gosford city centre in the weekday AM and PM peak hours and would clearly have a nominal impact on the road network surrounding the site. As such, the traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

5. Details relating to pedestrian, cyclist and public transport facilities, and

Pedestrian access along Donnison Street for year 11 and 12 staff/ students and along Mann Street and Erina Street East for year 7 to 10 staff/ students are ideal as they provide a high level of amenity, connecting staff and students to the Gosford city centre's well-established existing pedestrian network. In addition, each location is proximate to public transport services and pick-up/ drop-off locations, with formal crossing opportunities provided along each leg of signalised intersections within the city centre, as well as midblock along Mann Street and Erina Street East, ensuring students have appropriate travel paths to/ from school.

As discussed, both sites are well located close to high frequency existing bus and train services. Several local and regional area services travel through the area, connecting students and staff to major residential nodes within the Central Coast. This high level of convenience is expected to strengthen public transport use while limiting the frequency of private car use for both sites.

Given the limited opportunity of the development to provide additional bicycle parking infrastructure and based on the low existing mode share for cycling to school (no students and 1 staff member), the provision of no formal bicycle

parking is considered appropriate. Notwithstanding, staff storerooms and changing areas are proposed to be provided at both sites. This area could be used for bicycle storage if required. Furthermore, a bicycle parking shed with capacity for 38 bicycles and eight lockers are provided at Gosford Interchange, as well as bicycle hoops along Mann Street and within Kibble Park that could be used in lieu for formal onsite parking for students. These spaces are near the sites, easily accessible and are in well-lit areas with good active and passive surveillance.

6. Provision for service vehicles.

Service vehicle access for the Donnison Street site will remain as per existing arrangements (noting reduction to student and staff numbers at this location). Similarly, service vehicle access for the Mann Street site will be as per existing arrangements for the Imperial Centre tenancy. Given service vehicle arrangements are proposed to be maintained as per arrangements for the existing developments, they are considered appropriate.

7. The TIA is to also cover the points raised within the SEARs.

GTA confirms the TIA will cover all points raised within the SEARs.

I hope this provides you with the information you require. You're welcome to call either Karen or myself to discuss any time.

Kind regards,

Ingrid Bissaker
Consultant
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From: Development hunter <Development.hunter@rms.nsw.gov.au>
Sent: Wednesday, 22 April 2020 7:44 AM
To: Ingrid Bissaker <Ingrid.Bissaker@gta.com.au>
Subject: RE: ET Australia, Gosford relocation (SSD 10434) - Transport and accessibility

Hi Ingrid,

Thank you for your consultation email regarding the SEARs (SSD 10434), relocation of ET Australia independent special assistance high school, seeking TfNSW comments prior to completion of the Traffic Impact Assessment (TIA).

To assist with your request, TfNSW would like to understand the scope of the TIA that you are proposing, so could you please forward the following information:

- Overall methodology of study,
- Intersections you are proposing to analyse,
- Scope of traffic and pedestrian survey,

- Proposed modelling to be used,
- Details relating to pedestrian, cyclist and public transport facilities, and
- Provision for service vehicles.

Please note, the TIA is to also cover the points raised within the SEARs.

Kind regards

Kumar Kuruppu
Development Assessment Officer
Land Use Assessment Hunter
Regional and Outer Metropolitan
Transport for NSW

T 02 4908 7688
Level 8, 266 King Street Newcastle NSW 2300



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I acknowledge the traditional owners and custodians of the land in which I work and pay my respects to Elders past, present and future.

From: Ingrid Bissaker [<mailto:Ingrid.Bissaker@gta.com.au>]
Sent: Wednesday, 8 April 2020 5:02 PM
To: Peter Marler <peter.c.marler@transport.nsw.gov.au>
Cc: Karen McNatty <Karen.McNatty@gta.com.au>
Subject: ET Australia, Gosford relocation (SSD 10434) - Transport and accessibility

Hi Peter,

I wanted to email to advise that GTA are currently working on a State Significant Development within Gosford city centre for the relocation of ET Australia, an independent special assistance high school, from 123 Donnison Street to two sites, 171 Mann Street and 125 Donnison Street. The proposal involves relocating the existing year 7 to 10 campus from 123 Donnison Street to 171 Mann Street, Gosford, and increasing the school population from 170 students to 200 students. It is also proposed for a new year 11 and 12 campus to be opened at 125 Donnison Street, with a student population of 80.

We are currently preparing a transport report responding to the SEARs (SSD 10434) and are happy to meet or discuss through any queries you may have, before or after lodgement.

Any queries, please let me know.

Regards,

Ingrid Bissaker
Consultant
GTA Consultants
P 02 8448 1800 D 02 8448 1818 M 0423 198 536
Level 16, 207 Kent Street, Sydney, NSW 2000
Ingrid.Bissaker@gta.com.au



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B:SIDRA INTERSECTION RESULTS (GTA, 2019)

Appendix source: Appendix C, Gosford Alive – Transport Assessment Revision A, GTA Consultants, 22 August 2019'

MOVEMENT SUMMARY

 Site: 1 [1 - Mann Street/ Erina Street East AM]

 Network: N101 [AM Network]

Bus stop ID: 225087

AM peak 10 buses stop

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Mann Street														
1	L2	75	0.0	75	0.0	0.594	10.3	LOS A	9.8	73.5	0.45	0.44	0.45	34.2
2	T1	411	9.2	411	9.2	0.594	6.9	LOS A	9.8	73.5	0.45	0.44	0.45	33.3
3	R2	211	0.0	211	0.0	0.347	8.4	LOS A	3.1	21.8	0.45	0.64	0.45	27.8
Approach		696	5.4	696	5.4	0.594	7.8	LOS A	9.8	73.5	0.45	0.50	0.45	32.3
East: Erina Street East														
4	L2	41	5.1	41	5.1	0.108	37.2	LOS C	1.6	11.8	0.83	0.70	0.83	13.7
5	T1	41	2.6	41	2.6	0.648	47.6	LOS D	6.4	57.0	1.00	0.85	1.07	18.4
6	R2	87	47.0	87	47.0	0.648	51.1	LOS D	6.4	57.0	1.00	0.85	1.07	17.4
Approach		169	26.1	169	26.1	0.648	46.9	LOS D	6.4	57.0	0.96	0.81	1.01	17.0
North: Mann Street														
7	L2	167	0.0	167	0.0	0.110	5.3	LOS A	1.6	11.0	0.21	0.54	0.21	31.5
8	T1	419	10.1	419	10.1	0.384	7.9	LOS A	8.9	67.5	0.47	0.42	0.47	28.4
9	R2	155	0.7	155	0.7	0.273	9.4	LOS A	2.4	16.9	0.47	0.66	0.47	32.2
Approach		741	5.8	741	5.8	0.384	7.6	LOS A	8.9	67.5	0.41	0.50	0.41	30.2
All Vehicles		1606	7.8	1606	7.8	0.648	11.8	LOS A	9.8	73.5	0.49	0.53	0.49	28.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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
P1	South Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P2	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P4	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		158	44.3	LOS E			0.94	0.94

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 - Mann Street/ Erina Street East PM]

 Network: N101 [PM Network]

Bus stop ID: 225087

AM peak 10 buses stop

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Mann Street														
1	L2	44	0.0	44	0.0	0.699	15.7	LOS B	13.5	97.7	0.68	0.61	0.68	31.0
2	T1	503	4.2	503	4.2	0.699	12.2	LOS A	13.5	97.7	0.68	0.61	0.68	30.0
3	R2	129	0.0	129	0.0	0.259	10.8	LOS A	1.9	13.0	0.61	0.68	0.61	25.6
Approach		677	3.1	677	3.1	0.699	12.2	LOS A	13.5	97.7	0.67	0.63	0.67	29.5
East: Erina Street East														
4	L2	92	2.3	92	2.3	0.209	29.4	LOS C	2.9	20.5	0.83	0.73	0.83	15.9
5	T1	63	0.0	63	0.0	0.564	34.8	LOS C	6.0	46.4	0.97	0.79	0.97	21.4
6	R2	96	20.9	96	20.9	0.564	38.2	LOS C	6.0	46.4	0.97	0.79	0.97	20.4
Approach		251	8.8	251	8.8	0.564	34.1	LOS C	6.0	46.4	0.92	0.77	0.92	19.5
North: Mann Street														
7	L2	102	0.0	102	0.0	0.072	5.9	LOS A	1.0	6.9	0.27	0.55	0.27	30.7
8	T1	475	5.3	475	5.3	0.542	11.6	LOS A	11.1	81.3	0.65	0.57	0.65	25.1
9	R2	109	1.0	109	1.0	0.230	11.6	LOS A	1.5	10.9	0.63	0.70	0.63	30.9
Approach		686	3.8	686	3.8	0.542	10.8	LOS A	11.1	81.3	0.59	0.59	0.59	27.2
All Vehicles		1614	4.3	1614	4.3	0.699	15.0	LOS B	13.5	97.7	0.67	0.63	0.67	26.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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
P1	South Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P2	East Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		158	34.3	LOS D			0.93	0.93

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 - Mann Street/ Erina Street East Sat]

 Network: N101 [Sat Network]

Bus stop ID: 225087

AM peak 10 buses stop

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles																
Mov ID	Turn	Demand		Flows		Arrival	Flows	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %			v/c	sec		Vehicles veh	Distance m				km/h
South: Mann Street																
1	L2	47	0.0	47	0.0	0.329		9.5	LOS A		6.4	46.1	0.46	0.43	0.46	34.8
2	T1	341	4.3	341	4.3	0.329		6.1	LOS A		6.4	46.1	0.46	0.43	0.46	34.1
3	R2	125	0.0	125	0.0	0.203		9.1	LOS A		1.8	12.7	0.49	0.63	0.49	27.1
Approach		514	2.9	514	2.9	0.329		7.2	LOS A		6.4	46.1	0.46	0.48	0.46	33.0
East: Erina Street East																
4	L2	83	0.0	83	0.0	0.196		30.1	LOS C		2.6	18.5	0.84	0.73	0.84	15.7
5	T1	40	0.0	40	0.0	0.432		33.8	LOS C		4.5	34.4	0.95	0.77	0.95	21.6
6	R2	83	15.2	83	15.2	0.432		37.3	LOS C		4.5	34.4	0.95	0.77	0.95	20.6
Approach		206	6.1	206	6.1	0.432		33.7	LOS C		4.5	34.4	0.90	0.75	0.90	19.3
North: Mann Street																
7	L2	78	1.4	78	1.4	0.052		5.0	LOS A		0.6	4.1	0.21	0.53	0.21	31.9
8	T1	366	5.2	366	5.2	0.324		8.5	LOS A		7.0	51.5	0.53	0.46	0.53	27.9
9	R2	68	0.0	68	0.0	0.112		10.0	LOS A		1.1	7.9	0.45	0.63	0.45	31.8
Approach		513	3.9	513	3.9	0.324		8.1	LOS A		7.0	51.5	0.47	0.49	0.47	29.3
All Vehicles		1233	3.8	1233	3.8	0.432		12.0	LOS A		7.0	51.5	0.54	0.53	0.54	28.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	
P1	South Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P2	East Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
All Pedestrians		158	34.3	LOS D			0.93	0.93	

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: 2 [2 - Henry Parry Drive/ Erina Street East AM]

 Network: N101 [AM Network]

Site Category: -

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Henry Parry Drive														
1	L2	299	1.8	299	1.8	0.402	11.9	LOS A	5.8	41.4	0.33	0.56	0.33	20.7
2	T1	484	2.0	484	2.0	0.402	11.3	LOS A	8.3	59.3	0.45	0.44	0.45	44.7
Approach		783	1.9	783	1.9	0.402	11.5	LOS A	8.3	59.3	0.40	0.49	0.40	40.2
East: Erina Street East														
4	L2	5	0.0	5	0.0	0.166	47.3	LOS D	1.8	12.6	0.92	0.71	0.92	16.9
5	T1	38	2.8	38	2.8	0.166	44.3	LOS D	1.8	12.6	0.93	0.71	0.93	16.8
6	R2	24	0.0	24	0.0	0.166	49.9	LOS D	1.3	9.0	0.94	0.72	0.94	28.2
Approach		67	1.6	67	1.6	0.166	46.6	LOS D	1.8	12.6	0.93	0.71	0.93	22.1
North: Henry Parry Drive														
7	L2	85	0.0	85	0.0	0.409	14.3	LOS A	11.8	84.0	0.54	0.52	0.54	41.9
8	T1	633	2.3	633	2.3	0.409	10.3	LOS A	11.8	84.0	0.56	0.55	0.58	38.4
9	R2	78	1.4	78	1.4	0.409	15.8	LOS B	7.0	50.0	0.61	0.59	0.66	37.5
Approach		796	2.0	796	2.0	0.409	11.2	LOS A	11.8	84.0	0.56	0.55	0.59	38.9
West: Erina Street East														
10	L2	43	0.0	43	0.0	0.136	31.6	LOS C	2.6	18.2	0.77	0.67	0.77	31.7
11	T1	77	0.0	77	0.0	0.682	34.7	LOS C	9.5	66.2	0.90	0.82	1.02	24.1
12	R2	167	0.0	167	0.0	0.682	42.0	LOS C	9.5	66.2	0.97	0.91	1.17	12.8
Approach		287	0.0	287	0.0	0.682	38.5	LOS C	9.5	66.2	0.92	0.85	1.07	19.6
All Vehicles		1934	1.6	1934	1.6	0.682	16.6	LOS B	11.8	84.0	0.56	0.57	0.59	34.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Prop. Queued	Effective Stop Rate		
P1	South Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P2	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P3	North Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P4	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94	
All Pedestrians		211	44.3	LOS E			0.94	0.94	

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: \\gta.com.au\projectfiles\ProjectFilesSyd\N16400-16499\N164620 Gosford Alive\Modelling\190808sid-N164620-Existing revisedCal.sip8

MOVEMENT SUMMARY

 Site: 2 [2 - Henry Parry Drive/ Erina Street East PM]

 Network: N101 [PM Network]

Site Category: -

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Henry Parry Drive														
1	L2	201	1.6	201	1.6	0.577	20.2	LOS B	11.3	80.4	0.58	0.62	0.58	14.9
2	T1	588	1.3	588	1.3	0.577	17.4	LOS B	12.7	90.1	0.62	0.58	0.62	39.6
Approach		789	1.3	789	1.3	0.577	18.1	LOS B	12.7	90.1	0.61	0.59	0.61	36.2
East: Erina Street East														
4	L2	9	0.0	9	0.0	0.246	53.4	LOS D	2.6	18.8	0.95	0.73	0.95	15.5
5	T1	43	2.4	43	2.4	0.246	50.2	LOS D	2.6	18.8	0.95	0.73	0.95	15.5
6	R2	85	0.0	85	0.0	0.560	59.1	LOS E	4.6	32.5	1.00	0.78	1.01	25.9
Approach		138	0.8	138	0.8	0.560	55.9	LOS D	4.6	32.5	0.98	0.76	0.99	22.9
North: Henry Parry Drive														
7	L2	42	2.5	42	2.5	0.566	23.8	LOS B	24.4	172.6	0.74	0.67	0.74	37.2
8	T1	679	1.1	679	1.1	0.566	19.0	LOS B	24.4	172.6	0.73	0.67	0.73	32.9
9	R2	39	0.0	39	0.0	0.170	21.1	LOS B	2.3	16.1	0.70	0.62	0.70	33.3
Approach		760	1.1	760	1.1	0.566	19.3	LOS B	24.4	172.6	0.73	0.66	0.73	33.2
West: Erina Street East														
10	L2	26	0.0	26	0.0	0.086	25.2	LOS B	2.1	14.5	0.65	0.58	0.65	34.7
11	T1	37	0.0	37	0.0	0.086	21.7	LOS B	2.1	14.5	0.65	0.58	0.65	29.4
12	R2	295	0.0	295	0.0	0.608	31.5	LOS C	11.9	83.5	0.89	0.80	0.89	15.2
Approach		358	0.0	358	0.0	0.608	30.1	LOS C	11.9	83.5	0.85	0.76	0.85	18.9
All Vehicles		2045	1.0	2045	1.0	0.608	23.2	LOS B	24.4	172.6	0.72	0.66	0.72	30.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Prop. Queued	Effective Stop Rate		
		ped/h	sec		Pedestrian ped	Distance m			
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		211	49.3	LOS E			0.95	0.95	

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: 2 [2 - Henry Parry Drive/ Erina Street East Sat]

 Network: N101 [Sat Network]

Site Category: -

Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Henry Parry Drive														
1	L2	167	1.3	167	1.3	0.415	14.4	LOS A	6.4	45.3	0.47	0.54	0.47	19.6
2	T1	583	0.2	583	0.2	0.415	12.1	LOS A	8.0	55.9	0.54	0.51	0.54	44.0
Approach		751	0.4	751	0.4	0.415	12.6	LOS A	8.0	55.9	0.53	0.52	0.53	41.5
East: Erina Street East														
4	L2	2	0.0	2	0.0	0.086	36.9	LOS C	0.8	6.0	0.89	0.67	0.89	20.1
5	T1	21	10.0	21	10.0	0.086	33.7	LOS C	0.8	6.0	0.89	0.67	0.89	20.1
6	R2	25	0.0	25	0.0	0.119	39.4	LOS C	0.9	6.4	0.92	0.71	0.92	31.3
Approach		48	4.3	48	4.3	0.119	36.8	LOS C	0.9	6.4	0.91	0.69	0.91	27.3
North: Henry Parry Drive														
7	L2	24	4.3	24	4.3	0.298	11.7	LOS A	6.3	44.7	0.48	0.44	0.48	44.0
8	T1	548	0.6	548	0.6	0.298	7.1	LOS A	6.3	44.7	0.51	0.46	0.51	41.5
9	R2	52	0.0	52	0.0	0.298	12.0	LOS A	4.5	31.8	0.55	0.50	0.55	40.7
Approach		624	0.7	624	0.7	0.298	7.7	LOS A	6.3	44.7	0.51	0.46	0.51	41.5
West: Erina Street East														
10	L2	17	0.0	17	0.0	0.068	27.4	LOS B	0.9	6.5	0.78	0.63	0.78	33.5
11	T1	15	0.0	15	0.0	0.068	24.0	LOS B	0.9	6.5	0.78	0.63	0.78	28.2
12	R2	138	0.8	138	0.8	0.482	36.2	LOS C	5.0	35.4	0.94	0.84	1.11	14.0
Approach		169	0.6	169	0.6	0.482	34.2	LOS C	5.0	35.4	0.91	0.80	1.05	17.9
All Vehicles		1593	0.7	1593	0.7	0.482	13.7	LOS A	8.0	55.9	0.57	0.53	0.59	37.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Distance	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped	m			
P1	South Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P2	East Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P3	North Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
All Pedestrians		211	34.3	LOS D			0.93	0.93	

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: 3 [3 - Henry Parry Drive/ William Street AM]

 Network: N101 [AM Network]

Henry Parry Drive / William Street

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Henry Parry Drive (S)														
1	L2	40	5.3	40	5.3	0.517	9.0	LOS A	6.5	46.5	0.25	0.25	0.25	35.5
2	T1	692	1.8	692	1.8	0.517	4.7	LOS A	6.5	46.5	0.25	0.28	0.25	28.3
3	R2	108	1.0	108	1.0	0.517	10.2	LOS A	3.2	22.5	0.29	0.41	0.29	35.8
Approach		840	1.9	840	1.9	0.517	5.6	LOS A	6.5	46.5	0.26	0.30	0.26	30.8
East: William Street (E)														
4	L2	21	0.0	21	0.0	0.094	43.9	LOS D	0.9	6.4	0.92	0.68	0.92	13.1
6	R2	28	3.7	28	3.7	0.131	48.2	LOS D	1.3	9.2	0.93	0.71	0.93	12.2
Approach		49	2.1	49	2.1	0.131	46.4	LOS D	1.3	9.2	0.92	0.70	0.92	12.5
North: Henry Parry Drive (N)														
7	L2	48	0.0	48	0.0	0.566	13.1	LOS A	10.6	75.7	0.44	0.42	0.44	34.8
8	T1	765	2.3	765	2.3	0.566	12.3	LOS A	10.6	75.7	0.55	0.50	0.55	19.0
Approach		814	2.2	814	2.2	0.566	12.3	LOS A	10.6	75.7	0.54	0.50	0.54	20.4
West: William Street (W)														
10	L2	60	1.8	60	1.8	0.329	48.6	LOS D	3.2	22.6	0.96	0.75	0.96	9.0
11	T1	8	0.0	8	0.0	0.329	45.2	LOS D	3.2	22.6	0.96	0.75	0.96	16.9
12	R2	61	5.2	61	5.2	0.487	49.6	LOS D	3.0	21.7	0.97	0.77	0.97	8.8
Approach		129	3.3	129	3.3	0.487	48.9	LOS D	3.2	22.6	0.96	0.76	0.96	9.5
All Vehicles		1833	2.1	1833	2.1	0.566	12.7	LOS A	10.6	75.7	0.45	0.43	0.45	20.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Distance	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	m			
P1	South Full Crossing	79	30.5	LOS D	0.2	0.2	0.78	0.78	
P2	East Full Crossing	8	18.6	LOS B	0.0	0.0	0.61	0.61	
P3	North Full Crossing	59	44.3	LOS E	0.2	0.2	0.94	0.94	
P4	West Full Crossing	3	12.5	LOS B	0.0	0.0	0.50	0.50	
All Pedestrians		149	34.9	LOS D			0.83	0.83	

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: 3 [3 - Henry Parry Drive/ William Street PM]

 Network: N101 [PM Network]

Henry Parry Drive / William Street

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Henry Parry Drive (S)														
1	L2	33	0.0	33	0.0	0.308	9.6	LOS A	4.4	31.3	0.24	0.25	0.24	34.6
2	T1	598	1.8	598	1.8	0.308	3.7	LOS A	4.4	31.3	0.18	0.20	0.18	31.3
3	R2	26	0.0	26	0.0	0.308	6.6	LOS A	1.5	10.8	0.11	0.14	0.11	43.5
Approach		657	1.6	657	1.6	0.308	4.1	LOS A	4.4	31.3	0.18	0.20	0.18	32.6
East: William Street (E)														
4	L2	119	0.0	119	0.0	0.640	49.4	LOS D	5.9	41.6	1.00	0.81	1.06	12.0
6	R2	88	1.2	88	1.2	0.618	60.8	LOS E	4.9	34.7	1.00	0.80	1.06	10.2
Approach		207	0.5	207	0.5	0.640	54.3	LOS D	5.9	41.6	1.00	0.81	1.06	11.1
North: Henry Parry Drive (N)														
7	L2	20	0.0	20	0.0	0.651	5.4	LOS A	2.3	16.1	0.06	0.07	0.06	46.5
8	T1	961	0.8	961	0.8	0.651	6.2	LOS A	9.3	65.2	0.24	0.22	0.24	27.4
Approach		981	0.8	981	0.8	0.651	6.2	LOS A	9.3	65.2	0.24	0.21	0.24	28.1
West: William Street (W)														
10	L2	98	0.0	98	0.0	0.562	55.8	LOS D	5.7	39.7	0.99	0.79	0.99	8.1
11	T1	8	0.0	8	0.0	0.562	52.4	LOS D	5.7	39.7	0.99	0.79	0.99	15.4
12	R2	127	0.0	127	0.0	0.840	64.7	LOS E	7.7	54.2	1.00	1.02	1.37	7.1
Approach		234	0.0	234	0.0	0.840	60.5	LOS E	7.7	54.2	1.00	0.91	1.20	7.8
All Vehicles		2079	0.9	2079	0.9	0.840	16.4	LOS B	9.3	65.2	0.38	0.35	0.41	17.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		
P1	South Full Crossing	92	37.8	LOS D	0.2	0.2	0.83	0.83
P2	East Full Crossing	2	18.6	LOS B	0.0	0.0	0.58	0.58
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	6	11.4	LOS B	0.0	0.0	0.45	0.45
All Pedestrians		153	40.4	LOS E			0.85	0.85

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: 3 [3 - Henry Parry Drive/ William Street Sat]

 Network: N101 [Sat Network]

Henry Parry Drive / William Street

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Henry Parry Drive (S)														
1	L2	24	0.0	24	0.0	0.314	8.1	LOS A	2.8	19.6	0.21	0.21	0.21	37.0
2	T1	646	0.5	646	0.5	0.314	2.0	LOS A	2.8	19.6	0.13	0.14	0.13	37.4
3	R2	21	0.0	21	0.0	0.314	5.0	LOS A	0.4	2.6	0.03	0.06	0.03	46.8
Approach		692	0.5	692	0.5	0.314	2.3	LOS A	2.8	19.6	0.13	0.14	0.13	38.0
East: William Street (E)														
4	L2	19	5.6	19	5.6	0.141	44.3	LOS D	0.7	5.4	0.96	0.69	0.96	13.0
6	R2	9	0.0	9	0.0	0.068	43.6	LOS D	0.4	2.5	0.96	0.66	0.96	13.1
Approach		28	3.7	28	3.7	0.141	44.1	LOS D	0.7	5.4	0.96	0.68	0.96	13.0
North: Henry Parry Drive (N)														
7	L2	28	0.0	28	0.0	0.296	6.6	LOS A	1.8	12.7	0.14	0.16	0.14	43.7
8	T1	660	0.6	660	0.6	0.296	5.7	LOS A	7.4	51.8	0.38	0.35	0.38	28.4
Approach		688	0.6	688	0.6	0.296	5.7	LOS A	7.4	51.8	0.37	0.34	0.37	29.5
West: William Street (W)														
10	L2	89	0.0	89	0.0	0.403	39.0	LOS C	3.5	24.8	0.96	0.77	0.96	10.6
11	T1	5	0.0	5	0.0	0.403	35.6	LOS C	3.5	24.8	0.96	0.77	0.96	19.3
12	R2	123	0.0	123	0.0	0.482	39.4	LOS C	4.7	32.6	0.97	0.78	0.97	10.5
Approach		218	0.0	218	0.0	0.482	39.1	LOS C	4.7	32.6	0.96	0.77	0.96	10.8
All Vehicles		1626	0.5	1626	0.5	0.482	9.4	LOS A	7.4	51.8	0.36	0.32	0.36	23.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Distance	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped	m			
P1	South Full Crossing	1	28.9	LOS C	0.0	0.0	0.85	0.85	
P2	East Full Crossing	3	11.6	LOS B	0.0	0.0	0.54	0.54	
P3	North Full Crossing	18	34.3	LOS D	0.0	0.0	0.93	0.93	
P4	West Full Crossing	2	11.0	LOS B	0.0	0.0	0.53	0.53	
All Pedestrians		24	29.0	LOS C			0.84	0.84	

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: 4 [4 - Henry Parry Drive/ Donnison Street AM]

 Network: N101 [AM Network]

Henry Parry Drive / Donnison Street
Bus stop ID: 2250356

Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %				v/c	sec				
South: Henry Parry Drive (S)														
1	L2	95	2.2	95	2.2	0.888	44.2	LOS D	38.1	269.7	0.99	1.03	1.17	24.0
2	T1	729	1.3	729	1.3	0.888	36.5	LOS C	38.1	269.7	0.94	0.95	1.09	25.1
Approach		824	1.4	824	1.4	0.888	37.4	LOS C	38.1	269.7	0.94	0.96	1.10	24.9
East: Donnison Street (E)														
4	L2	33	0.0	33	0.0	0.160	49.4	LOS D	1.5	10.4	0.94	0.72	0.94	25.3
5	T1	75	1.4	75	1.4	0.276	43.8	LOS D	3.4	23.7	0.93	0.74	0.93	13.1
Approach		107	1.0	107	1.0	0.276	45.5	LOS D	3.4	23.7	0.94	0.73	0.94	18.4
North: Henry Parry Drive (N)														
7	L2	17	0.0	17	0.0	0.356	6.7	LOS A	2.2	15.7	0.12	0.13	0.12	43.7
8	T1	720	2.8	720	2.8	0.774	22.0	LOS B	18.3	130.6	0.52	0.54	0.65	32.8
9	R2	108	1.0	108	1.0	0.774	50.2	LOS D	18.3	130.6	1.00	1.04	1.29	6.4
Approach		845	2.5	845	2.5	0.774	25.3	LOS B	18.3	130.6	0.57	0.60	0.72	30.0
West: Donnison Street (W)														
10	L2	102	6.2	102	6.2	0.167	24.1	LOS B	3.5	26.1	0.68	0.68	0.68	18.0
11	T1	128	4.1	128	4.1	0.723	39.3	LOS C	12.1	86.0	0.96	0.95	1.17	20.2
12	R2	141	0.7	141	0.7	0.723	44.6	LOS D	12.1	86.0	0.99	0.98	1.22	26.0
Approach		372	3.4	372	3.4	0.723	37.1	LOS C	12.1	86.0	0.89	0.89	1.06	22.7
All Vehicles		2148	2.2	2148	2.2	0.888	33.0	LOS C	38.1	269.7	0.79	0.79	0.93	26.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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
P1	South Full Crossing	95	44.4	LOS E	0.3	0.3	0.94	0.94
P2	East Full Crossing	92	11.1	LOS B	0.1	0.1	0.47	0.47
P3	North Full Crossing	97	34.6	LOS D	0.2	0.2	0.83	0.83
P4	West Full Crossing	36	23.2	LOS C	0.1	0.1	0.68	0.68
All Pedestrians		319	29.5	LOS C			0.75	0.75

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: 4 [4 - Henry Parry Drive/ Donnison Street PM]

 Network: N101 [PM Network]

Henry Parry Drive / Donnison Street
Bus stop ID: 2250356

Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Henry Parry Drive (S)														
1	L2	113	0.0	113	0.0	0.837	46.7	LOS D	28.3	200.2	0.99	0.95	1.10	23.1
2	T1	571	1.5	571	1.5	0.837	38.5	LOS C	28.3	200.2	0.93	0.87	1.01	24.3
Approach		683	1.2	683	1.2	0.837	39.8	LOS C	28.3	200.2	0.94	0.88	1.02	24.1
East: Donnison Street (E)														
4	L2	98	0.0	98	0.0	0.446	54.9	LOS D	5.1	35.5	0.97	0.78	0.97	24.0
5	T1	137	0.8	137	0.8	0.456	47.9	LOS D	6.8	48.2	0.96	0.78	0.96	12.3
Approach		235	0.4	235	0.4	0.456	50.8	LOS D	6.8	48.2	0.96	0.78	0.96	18.7
North: Henry Parry Drive (N)														
7	L2	9	0.0	9	0.0	0.919	18.4	LOS B	18.5	130.6	0.72	0.72	0.79	29.7
8	T1	1092	0.7	1092	0.7	0.919	13.8	LOS A	18.5	130.6	0.72	0.72	0.79	37.8
9	R2	113	0.0	113	0.0	0.296	50.5	LOS D	6.2	43.1	1.00	0.80	1.00	6.0
Approach		1214	0.6	1214	0.6	0.919	17.3	LOS B	18.5	130.6	0.74	0.73	0.81	34.8
West: Donnison Street (W)														
10	L2	91	2.3	91	2.3	0.202	27.1	LOS B	4.9	35.4	0.70	0.66	0.70	17.2
11	T1	49	4.3	49	4.3	0.202	23.7	LOS B	4.9	35.4	0.70	0.66	0.70	25.5
12	R2	355	0.6	355	0.6	0.917	67.4	LOS E	20.7	145.6	1.00	1.31	1.84	20.8
Approach		495	1.3	495	1.3	0.917	55.7	LOS D	20.7	145.6	0.91	1.13	1.51	20.8
All Vehicles		2626	0.9	2626	0.9	0.919	33.4	LOS C	28.3	200.2	0.85	0.85	1.01	26.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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
P1	South Full Crossing	81	48.4	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	58	17.0	LOS B	0.1	0.1	0.56	0.56
P3	North Full Crossing	100	29.9	LOS C	0.2	0.2	0.74	0.74
P4	West Full Crossing	39	32.1	LOS D	0.1	0.1	0.76	0.76
All Pedestrians		278	32.9	LOS D			0.76	0.76

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: \\gta.com.au\projectfiles\ProjectFilesSyd\N16400-16499\N164620 Gosford Alive\Modelling\190808sid-N164620-Existing revisedCal.sip8

MOVEMENT SUMMARY

 Site: 4 [4 - Henry Parry Drive/ Donnison Street Sat]

 Network: N101 [Sat Network]

Henry Parry Drive / Donnison Street
Bus stop ID: 2250356

Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Henry Parry Drive (S)														
1	L2	113	0.9	113	0.9	0.443	21.4	LOS B	10.1	70.7	0.74	0.68	0.74	33.6
2	T1	635	0.3	635	0.3	0.443	16.9	LOS B	10.3	72.1	0.74	0.66	0.74	34.0
Approach		747	0.4	747	0.4	0.443	17.6	LOS B	10.3	72.1	0.74	0.66	0.74	34.0
East: Donnison Street (E)														
4	L2	32	0.0	32	0.0	0.124	38.2	LOS C	1.1	7.8	0.91	0.71	0.91	28.5
5	T1	52	2.0	52	2.0	0.179	34.2	LOS C	1.8	12.9	0.91	0.70	0.91	15.6
Approach		83	1.3	83	1.3	0.179	35.8	LOS C	1.8	12.9	0.91	0.71	0.91	22.4
North: Henry Parry Drive (N)														
7	L2	7	0.0	7	0.0	0.561	10.5	LOS A	8.9	62.7	0.39	0.36	0.39	38.0
8	T1	686	0.8	686	0.8	0.561	6.7	LOS A	8.9	62.7	0.42	0.39	0.42	43.0
9	R2	97	0.0	97	0.0	0.306	17.6	LOS B	3.9	27.1	0.67	0.66	0.67	15.1
Approach		791	0.7	791	0.7	0.561	8.1	LOS A	8.9	62.7	0.45	0.42	0.45	41.3
West: Donnison Street (W)														
10	L2	56	1.9	56	1.9	0.077	18.0	LOS B	1.3	9.4	0.62	0.65	0.62	20.8
11	T1	18	0.0	18	0.0	0.334	25.8	LOS B	4.0	27.9	0.86	0.73	0.86	24.2
12	R2	103	1.0	103	1.0	0.334	30.5	LOS C	4.0	27.9	0.88	0.74	0.88	29.9
Approach		177	1.2	177	1.2	0.334	26.1	LOS B	4.0	27.9	0.80	0.71	0.80	27.8
All Vehicles		1798	0.6	1798	0.6	0.561	15.1	LOS B	10.3	72.1	0.63	0.56	0.63	35.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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
P1	South Full Crossing	17	34.2	LOS D	0.0	0.0	0.93	0.93
P2	East Full Crossing	6	11.0	LOS B	0.0	0.0	0.53	0.53
P3	North Full Crossing	15	28.9	LOS C	0.0	0.0	0.85	0.85
P4	West Full Crossing	53	18.9	LOS B	0.1	0.1	0.69	0.69
All Pedestrians		91	22.9	LOS C			0.75	0.75

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: 5 [5 - Mann Street/ Donnison Street AM]

 Network: N101 [AM Network]

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Mann Street													
1	L2	51	0.0	51	0.0	0.062	18.4	LOS B	1.1	7.9	0.60	0.60	26.7
2	T1	465	7.2	465	7.2	0.540	16.6	LOS B	13.1	97.0	0.77	0.77	24.2
Approach		516	6.5	516	6.5	0.540	16.8	LOS B	13.1	97.0	0.75	0.75	24.5
East: Donnison Street													
4	L2	41	5.1	41	5.1	0.115	26.6	LOS B	1.8	12.9	0.76	0.76	26.9
5	T1	168	0.6	168	0.6	0.570	31.0	LOS C	6.9	48.3	0.93	0.93	20.3
6	R2	41	0.0	41	0.0	0.570	36.9	LOS C	6.9	48.3	0.95	0.95	15.9
Approach		251	1.3	251	1.3	0.570	31.2	LOS C	6.9	48.3	0.90	0.90	20.8
North: Mann Street													
7	L2	89	4.7	89	4.7	0.120	17.7	LOS B	2.1	15.4	0.60	0.60	23.6
8	T1	257	12.3	257	12.3	0.592	16.5	LOS B	10.2	77.6	0.80	0.80	31.2
9	R2	106	6.9	106	6.9	0.592	21.2	LOS B	10.2	77.6	0.81	0.81	26.5
Approach		453	9.5	453	9.5	0.592	17.8	LOS B	10.2	77.6	0.76	0.76	29.0
West: Pacific Highway													
10	L2	228	3.2	228	3.2	0.325	23.2	LOS B	6.3	45.2	0.74	0.74	12.4
11	T1	429	2.9	429	2.9	0.725	27.7	LOS B	15.5	111.4	0.95	0.99	10.8
Approach		658	3.0	658	3.0	0.725	26.1	LOS B	15.5	111.4	0.88	0.90	11.3
All Vehicles		1877	5.3	1877	5.3	0.725	22.2	LOS B	15.5	111.4	0.82	0.83	21.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P2	East Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		211	34.3	LOS D			0.93	0.93

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: 5 [5 - Mann Street/ Donnison Street PM]

 Network: N101 [PM Network]

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 80 seconds (Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Mann Street														
1	L2	58	0.0	58	0.0	0.080	21.1	LOS B	1.4	9.9	0.66	0.69	0.66	25.1
2	T1	342	5.2	342	5.2	0.440	18.2	LOS B	9.6	70.4	0.77	0.66	0.77	23.0
Approach		400	4.5	400	4.5	0.440	18.7	LOS B	9.6	70.4	0.75	0.66	0.75	23.4
East: Donnison Street														
4	L2	47	0.0	47	0.0	0.099	22.0	LOS B	1.7	12.2	0.68	0.65	0.68	29.2
5	T1	295	0.4	295	0.4	0.487	21.7	LOS B	9.0	63.1	0.82	0.71	0.82	24.9
6	R2	19	0.0	19	0.0	0.487	26.6	LOS B	9.0	63.1	0.83	0.71	0.83	20.5
Approach		361	0.3	361	0.3	0.487	22.0	LOS B	9.0	63.1	0.80	0.70	0.80	25.4
North: Mann Street														
7	L2	128	1.6	128	1.6	0.181	22.0	LOS B	3.3	23.5	0.69	0.72	0.69	20.7
8	T1	309	5.8	309	5.8	0.654	17.9	LOS B	11.9	87.1	0.83	0.72	0.83	30.5
9	R2	94	4.5	94	4.5	0.654	22.5	LOS B	11.9	87.1	0.83	0.72	0.83	26.0
Approach		532	4.6	532	4.6	0.654	19.7	LOS B	11.9	87.1	0.79	0.72	0.79	27.8
West: Pacific Highway														
10	L2	331	1.9	331	1.9	0.412	21.3	LOS B	8.9	63.2	0.73	0.77	0.73	13.2
11	T1	455	1.2	455	1.2	0.606	21.3	LOS B	14.3	101.3	0.86	0.75	0.86	13.2
Approach		785	1.5	785	1.5	0.606	21.3	LOS B	14.3	101.3	0.80	0.76	0.80	13.2
All Vehicles		2078	2.6	2078	2.6	0.654	20.5	LOS B	14.3	101.3	0.79	0.72	0.79	22.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Prop. Queued	Effective Stop Rate		
		ped/h	sec		Pedestrian ped	Distance m			
P1	South Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P2	East Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P3	North Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.93	0.93	
All Pedestrians		211	34.3	LOS D			0.93	0.93	

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: 5 [5 - Mann Street/ Donnison Street Sat]

 Network: N101 [Sat Network]

Site Category: -

Signals - Fixed Time Isolated Cycle Time = 70 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Mann Street														
1	L2	24	0.0	24	0.0	0.025	13.4	LOS A	0.4	2.8	0.51	0.63	0.51	30.4
2	T1	275	4.2	275	4.2	0.267	9.2	LOS A	5.0	36.3	0.57	0.48	0.57	31.5
Approach		299	3.9	299	3.9	0.267	9.5	LOS A	5.0	36.3	0.56	0.50	0.56	31.3
East: Donnison Street														
4	L2	35	0.0	35	0.0	0.083	25.3	LOS B	1.0	7.3	0.78	0.68	0.78	27.1
5	T1	184	0.6	184	0.6	0.409	23.0	LOS B	5.6	39.7	0.86	0.72	0.86	24.2
6	R2	18	0.0	18	0.0	0.409	27.7	LOS B	5.6	39.7	0.87	0.72	0.87	19.9
Approach		237	0.4	237	0.4	0.409	23.7	LOS B	5.6	39.7	0.85	0.71	0.85	24.4
North: Mann Street														
7	L2	85	1.2	85	1.2	0.091	13.3	LOS A	1.4	10.2	0.52	0.67	0.52	27.0
8	T1	244	6.5	244	6.5	0.447	11.6	LOS A	7.6	55.5	0.67	0.64	0.67	34.8
9	R2	104	4.0	104	4.0	0.447	16.2	LOS B	7.6	55.5	0.67	0.64	0.67	30.3
Approach		434	4.9	434	4.9	0.447	13.1	LOS A	7.6	55.5	0.64	0.64	0.64	32.7
West: Pacific Highway														
10	L2	207	1.5	207	1.5	0.439	28.7	LOS C	6.1	43.2	0.88	0.79	0.88	10.5
11	T1	185	0.6	185	0.6	0.334	21.6	LOS B	5.1	35.8	0.83	0.68	0.83	13.1
Approach		393	1.1	393	1.1	0.439	25.3	LOS B	6.1	43.2	0.86	0.74	0.86	11.6
All Vehicles		1362	2.8	1362	2.8	0.447	17.7	LOS B	7.6	55.5	0.72	0.65	0.72	24.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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	Distance	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped	m			
P1	South Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92	
P2	East Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92	
P3	North Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92	
P4	West Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92	
All Pedestrians		211	29.3	LOS C			0.92	0.92	

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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