Five Ways Triangle Site – Crows Nest

Supplementary Transport Assessment

Prepared for:

Deicorp Projects (Crows Nest) Pty Ltd

15 November 2022

PROJECT INFORMATION

Project Name:	Five Ways Triangle Site – Crows Nest
Client:	Deicorp Projects (Crows Nest) Pty Ltd
Project Number:	2274
Prepared By:	JMT Consulting

DOCUMENT HISTORY

Document Title	Revision	Date issued	Author
Five Ways Triangle Site – Supplementary Assessment	Issue 1	15.11.22	JM

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1 Introduction

1.1 Overview

JMT Consulting was engaged by Deicorp Projects (Crows Nest) Pty Ltd to prepare a supplementary transport assessment to support a rezoning of the site known as the 'Five Ways Triangle Site' located at 391-423 Pacific Highway, 3-15 Falcon Street and 8 Alexander Street, Crows Nest. The Planning Proposal seeks to increase the permissible height and Floor Space Ratio (FSR) on the site consistent with the controls outlined in the St Leonards and Crows Nest 2036 Plan.

1.2 Site location

The subject site is bound by Falcon Street to the north, Alexander Street to the east, and the Pacific Highway to the south-west. The site is 3,200.6sqm in area. It is triangular in shape with a frontage of approximately 70m to Falcon Street, 85m to Alexander Street and 110m to the Pacific Highway. The site contains a number of buildings ranging from 1-4 storeys in height in a variety of building styles and sizes. St Leonards Railway Station is located approx. 800m walk to the north-west, which provides regular services to the south to Sydney City CBD, and to the north to Chatswood, Macquarie Park and Hornsby. The future Crows Nest Metro Station is located approx. 250m to the north-west of the site.

Figure 1 Site location

1.3 Report background and purpose

A detailed Traffic and Parking Impact Assessment Report was prepared in support of the original Planning Proposal for the site by Barker Ryan Stewart consultants and finalised in December 2020. Due to the timing of the assessment, traffic counts on the surrounding road network were undertaken in April 2020 during the first COVID lockdown period. These traffic counts were then compared to traffic data from February 2020 (i.e. pre COVID) and scaled up accordingly, which then formed the basis of the traffic analysis later undertaken for the study.

A revised Traffic and Parking Impact Assessment Report was issued in December 2021 to support an updated Planning Proposal for the site – however the traffic analysis underpinning this study utilised the previous 2020 traffic data along with out of date assumptions regarding potential development yield. This detailed Traffic and Parking Impact Assessment Report is provided as Appendix B to this document.

The purpose of this supplementary transport assessment is confirm the accuracy and suitability of the traffic data utilised in the detailed Traffic and Parking Impact Assessment Report supporting the Planning Proposal – responding to advice provided by the Sydney North Planning Panel. The supplementary assessment considers contemporary traffic conditions around the site along with the most current reference scheme prepared for the proposal as developed by Turner Architects.

2 Existing Site Conditions

2.1 Travel behaviours

Travel behaviours for residents and employees within the area surrounding the site[1] been analysed using 2016[2] Journey to Work Census data. The data demonstrates a high proportion of people travelling to and from Crows Nest use public transport, accounting for close to half of all trips in the case of residents travelling to work. This reflects the strong availability and accessibility of public transport in this area, which will only improve following the completion of the Sydney Metro network. A high proportion of residents walk to work, which reflects the likelihood that future residents of the site will choose to work in the nearby St Leonards or North Sydney CBD. Only 12% of residents noted that they travelled to work using their own vehicle, demonstrating that the site has a very low car reliance making it suitable for future residential development.

Table 1 Existing travel patterns

Mode of travel	Proportion of trips	
	Residents travelling to work from Crows Nest	*Employees travelling into Crows Nest for work*
Car driver	28%	50%
Car passenger	1%	4%
Bus	21%	10%
Train	28%	25%
Walk	15%	7%
Bicycle	5%	0.5%
Other	2%	3.5%%
Total	**100%**	**100%**

[1] SA1, code 12104141401 & Destination Zone 114 143 316
[2] Detailed 2021 Census data unavailable at time of writing and given Census was completed during COVID lockdown period data would not provide an accurate reflection of contemporary travel behaviours

2.2 Road network

The road network surrounding the site is illustrated in Figure 2 below and includes the following key roads:

- **Pacific Highway** – A State Highway and arterial route linking between Sydney and Hornsby
- **Falcon Street** – A State Road and sub-arterial route being part of an east-west link between Manly, Mosman and Neutral Bay and the Pacific Highway at Crows Nest
- **Alexander Street and Willoughby Road** – local roads that act as north-south collector roads connecting to Falcon Street

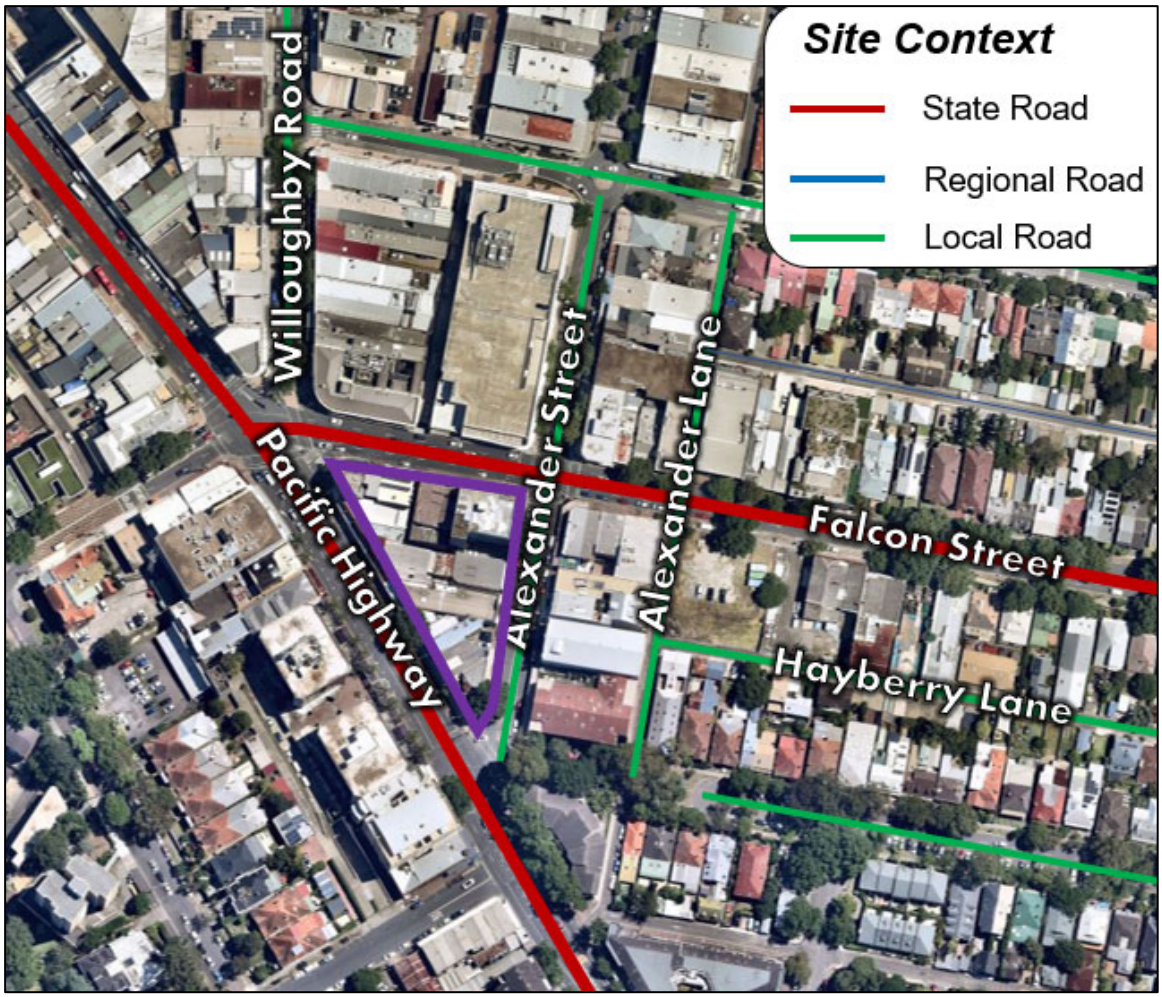


Figure 2 Surrounding road network

2.3 Public transport services

The existing bus routes serving the site are shown in Figure 3. Bus M20 provides access to the city via the Pacific Highway, while the other buses serve various suburbs regionally.

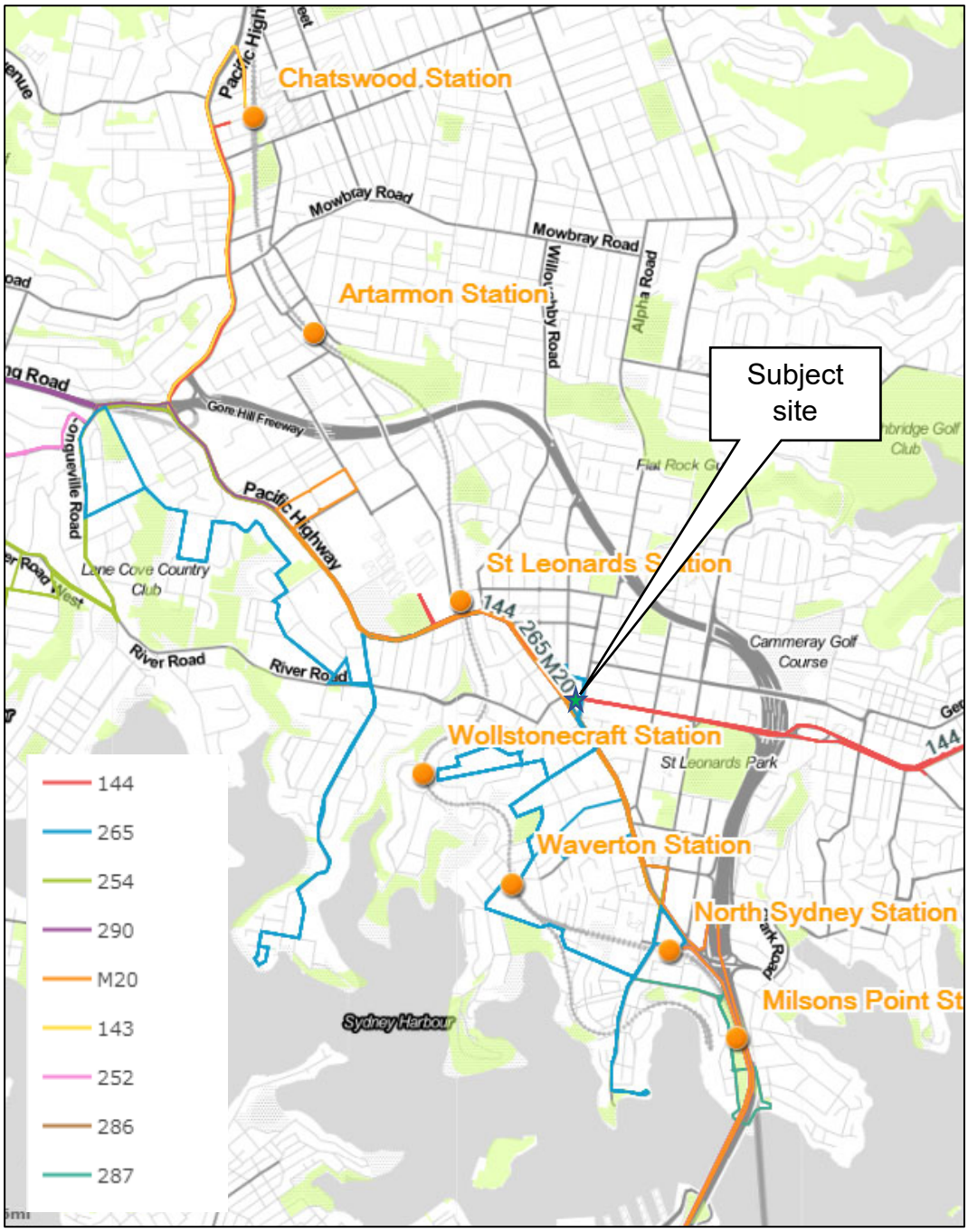


Figure 3 Bus routes serving the site

The extensive network of bus routes servicing the surrounding area are summarised in Table 2. Buses connect the local area to the Sydney CBD, Chatswood CBD, Crows Nest, Epping, Lane Cove and surrounding suburbs. Bus services are frequent throughout the day, with express services operating during the peak periods.

Table 2 Existing bus routes servicing the site

Bus Route	Service description
Route 143, Manly and Macquarie University	Services every 30 minutes throughout the day in each direction.
Route 144, Chatswood and manly via Royal North Shore Hospital	Services every 30 minutes throughout the day in each direction.
Route 200, Chatswood to Bondi Junction	Services every 15 minutes throughout the day in each direction.
Route 252, Lane Cove West and City via Pacific Highway	Services every 30 minutes throughout the day in each direction.
Route 254, Riverview and City via Pacific Highway	Services every 30 minutes throughout the day in each direction.
Route 265, McMahons Point and Lane Cove via Greenwich Wharf	Services every 30 minutes throughout the day in each direction.
Route 286, Denistone East and City via Pacific Highway	Services every 30 minutes during the peak periods between Monday to Friday.
Route 287, Ryde and Milsons Point via Pacific Highway and North Sydney	Services every 30 minutes during the peak periods between Monday and Friday in each direction.
Route 290, Epping and City via Macquarie Centre and Pacific Highway	Services every 15 minutes during the peak periods between Monday and Friday in each direction. Services every hour at all other times.
Route 291, Epping to McMahons Point	Services every 30 minutes during the peak periods between Monday to Friday.
Route 622, Dural to Milsons Point via Cherrybrook	Services every 30 minutes during the peak periods between Monday to Friday.
Route 653, West Pennant Hills to Milsons Point	Services every 30 minutes during the peak periods between Monday to Friday.
Route 602X, Rouse Hill to North Sydney	Services every 15 minutes during the peak periods between Monday to Friday.
Route 612X, Kellyville to Milsons Point	Services every 5 minutes during the peak periods between Monday to Friday.
M20, Botany and Gore Hill	Services every 10 minutes during the peak periods in each direction. Services every 15 minutes at all other times.
N90, Hornsby to City Town Hall via Chatswood	Services every 60 minutes throughout the day in each direction.
N91, Bondi Junction to Macquarie Park via City Town Hall	Services every 60 minutes throughout the day in each direction.

The introduction of the Sydney Metro (City and Southwest) service will provide additional connectivity to and from the site. Crows Nest Station will be delivered as part of this project and will be located between Pacific Highway, Clarke Lane and Oxley Street, south of Hume Street. This future metro station, currently under construction, will significantly add to the already well provisioned public transport amenities in the area.

From Crows Nest Station (approximately 250m walk of the site), Central Station may be reached in approximately 11 minutes and Martin Place Station in 7 minutes. The Sydney Metro route and station locations are shown in Figure 4.

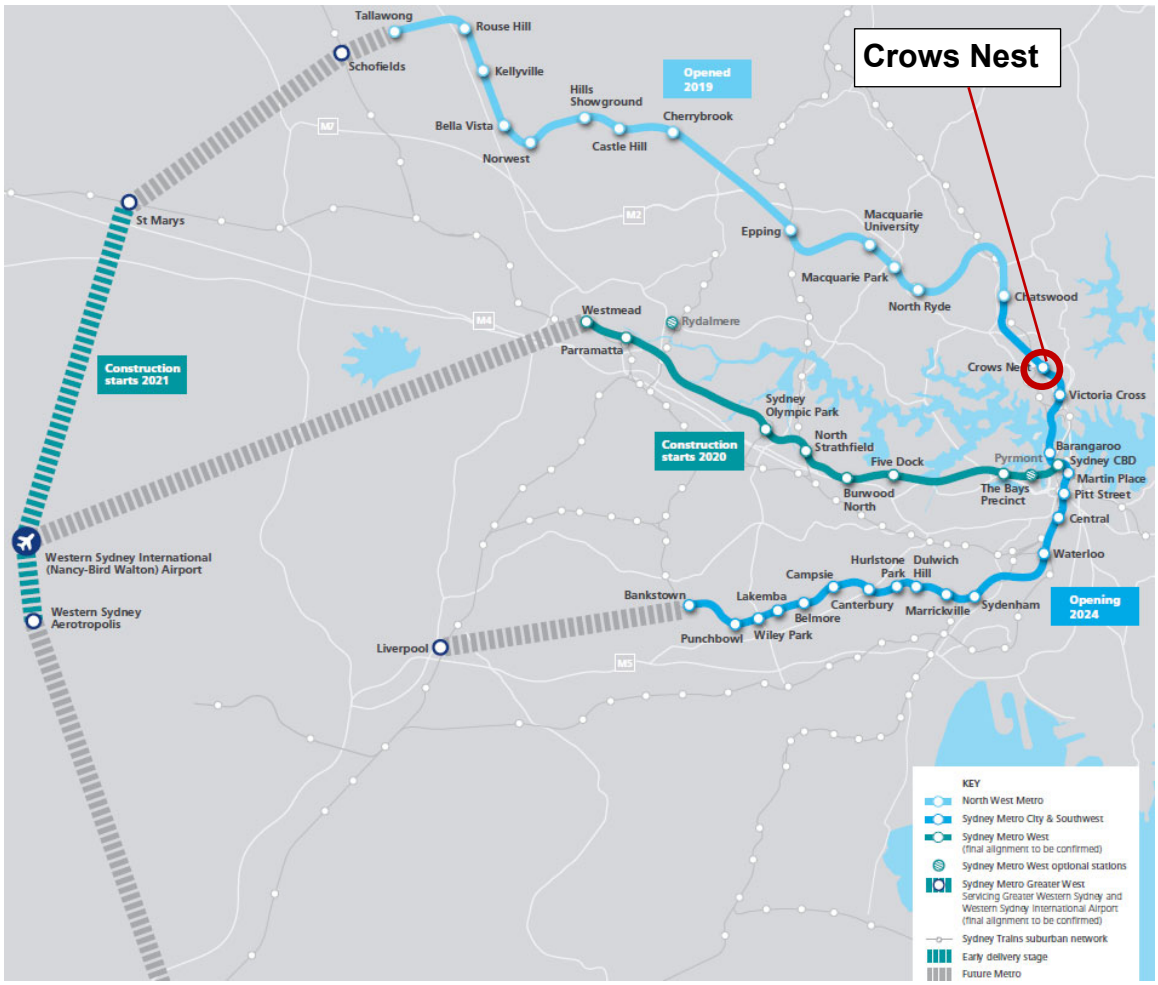


Figure 4 Sydney Metro network

Source: Transport for NSW

2.4 Public transport travel time catchment

A key indicator of the level of public transport accessibility a site contains is the number of locations accessible within a 30 minute public transport catchment. A key objective of the Greater Sydney Commission's Greater Sydney Region Plan is to deliver a 30-minute city where jobs, services and quality public transport spaces are in easy reach of residences.

As illustrated in Figure 5 a number of key employment centres across Sydney can be reached within 30 minutes public transport travel time of the site, including Chatswood, Macquarie Park, St Leonards, Sydney CBD and the North Sydney CBD. The highly accessible nature of the site will allow residents to easily access their place of work. Travel by private vehicle will primarily be used for more discretionary trips undertaken outside of the busy road network periods for purposes such as shopping, recreational travel etc.

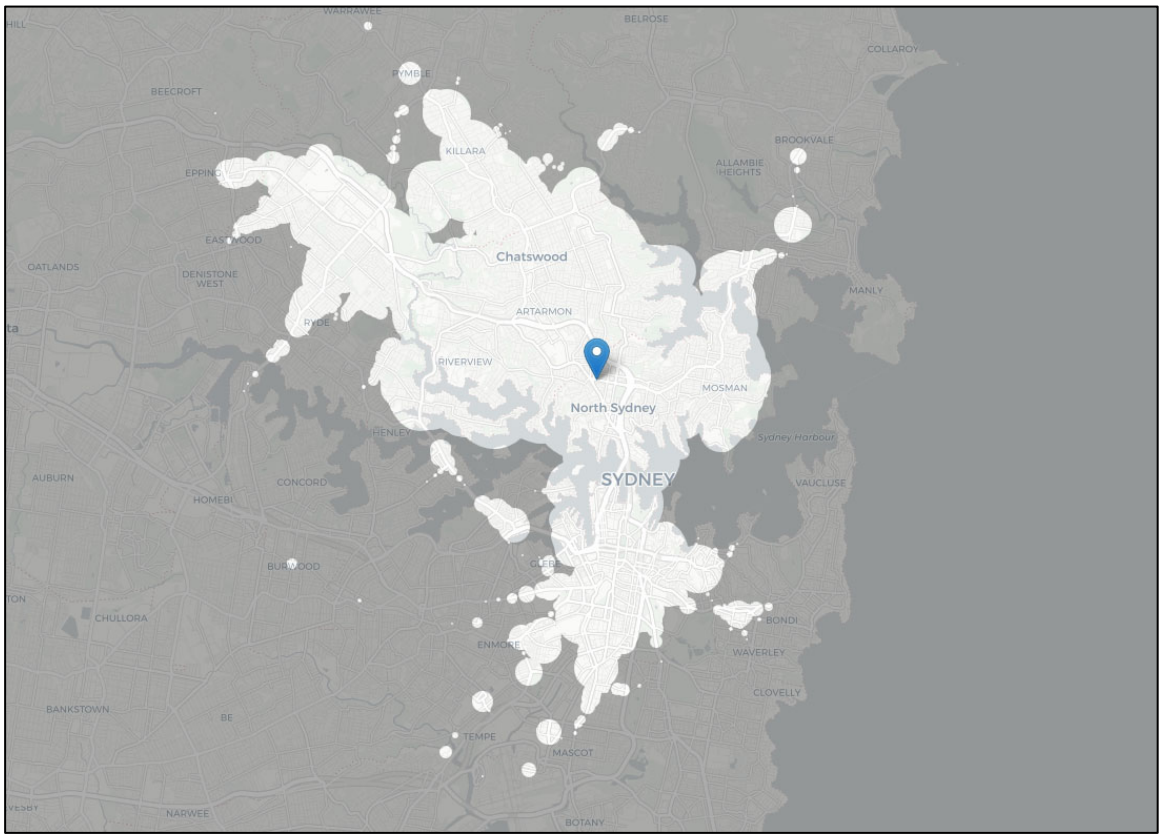


Figure 5 30 minute public transport catchment

Source: hiips://www mapnificent.net/sydney

2.5 Pedestrian and cycling facilities

The site is well served by a good network of local footpaths. Paved footpaths and kerb ramps are provided on both sides of Falcon Street and the Pacific Highway. All roads on the walking route from the site to the future Crows Nest metro station possess paved footpaths and kerb ramps on both sides of the road. Formal pedestrian crossings of Falcon Street are provided at the nearby Alexander Street and Willoughby Road signalised intersections.

The site is well connected to a number of cycling routes which consist of both off-road cycling paths as well as on-road marked paths. Burlington Street in the vicinity of the site forms part of the local cycling network within the North Sydney / Crows Nest area, providing connectivity between St Leonards and North Sydney CBDs via West Street. The local cycling routes also connect to the Warringah Freeway cycleway which provides connections to Lane Cove, North Ryde and Chatswood.

Figure 6 Existing cycling network

3 Supplementary Assessment

3.1 Traffic data comparison

As previously noted in Section 1.3, due to the timing of the initial traffic assessment prepared in support of the Proposal, traffic counts were undertaken in April 2020 during the first COVID lockdown period. These traffic counts were then compared to traffic data from February 2020 (i.e. pre COVID) and scaled up accordingly, which then formed the basis of the traffic analysis later undertaken for the study.

To determine the suitability of this traffic data for ongoing use updated traffic counts were commissioned in October 2022 to reflect cotemporary traffic conditions around the site. The counts were undertaken on Tuesday 25 October 2022 which did not coincide with any school or public holiday periods – therefore providing an accurate reflection of current traffic movements in the vicinity of the site. Consistent with the original traffic study data was collected at the two key intersections surrounding the site, as shown in Figure 7 and summarised below:

- Pacific Highway / Alexander Street
- Pacific Highway / Falcon Street / Shirley Road

Figure 7 Traffic survey locations

A comparison of the traffic data from 2020 (used in the original traffic analysis supporting the Planning Proposal) against that recently collected in October 2022 is provided in Table 3 below. The detailed traffic data collected in October 2022 is provided as Appendix A to this document.

Table 3 Traffic data comparison

Intersection	Scenario	Traffic Volumes	
		AM Peak Hour (8am - 9am)	PM Peak Hour (5pm - 6pm)
Pacific Highway / Alexander Street	2020 data used in original analysis	3,015	2,816
	October 2022 data	2,844	2,401
	Change compared to 2020 data	***-6.0%***	***-17.3%***
Pacific Highway / Falcon Street / Shirley Road	2020 data used in original analysis	3,710	3,911
	October 2022 data	3,877	3,716
	Change compared to 2020 data	***+4.3%***	***-5.2%***

The analysis demonstrates that the traffic data used in the modelling supporting the Planning Proposal is generally higher than current traffic conditions around the site. This is particularly the case in the afternoon peak hour between 5pm – 6pm which was identified as being the critical hour of the day on the surrounding road network, with reductions in traffic of between 5% and 17% at the Pacific Highway / Falcon Street / Shirley Road and Pacific Highway / Alexander Street intersections respectively when compared to 2020.

The analysis demonstrates that the original traffic data utilised for the Planning Proposal provides for a conservative and robust assessment of traffic conditions around the site when compared to current conditions and is therefore suitable for ongoing use.

3.2 Traffic generation comparison

The traffic modelling undertaken in support of the Planning Proposal was based on the traffic generation arising from the reference scheme from December 2020 which contained an overall FSR of 9.31:1 – significantly greater than the current proposal's FSR of 5.8:1.

In addition the analysis undertaken by Barker Ryan Stewart assumes a traffic generation rate for the non-residential uses based on the total floor space provided with no regard to the limited car parking provision to be in place. The proposed non-residential component of the development is expected to primarily serve the local walk-up catchment and passing along the Pacific Highway, especially during the commuter peak hours. Given the context of the site as well as the constrained parking rates of 1/60m^2 (as per Council's controls) for the non-residential component, it is appropriate that traffic generation potential is directly linked to the quantum of car parking provided.

Transport for NSW published a Technical Direction that described vehicular trip rates for commercial developments. Comparable commercial developments have been considered in order to understand the likely traffic generation resulting from the site. For the site in North Sydney a trip generation rate of 0.38 and 0.32 vehicles per hour during the AM and PM peak hours respectively were recorded.

For the retail uses a higher rate of approximately 0.5-1.0 and 1.0-2.0 trips per space is typically experienced in the AM and PM peak hours respectively for sites with ancillary retail uses. As a conservative assumption the upper end of this range has been adopted in this assessment.

Taking into account the most up to date reference scheme and appropriate traffic generation rates, a comparison of the expected level of traffic movements arising from the Planning Proposal has been provided as summarised in Table 4.

Table 4 Traffic generation comparison

Scenario	Land Use Assumptions			Overall Traffic Generation	
	Residential	Retail	Commercial	AM Peak Hour	PM Peak Hour
Original traffic analysis	233 units	1,849m2	6,153m2	179	159
Supplementary assessment	129 units	1,849m2	6,153m2	95	114
Difference compared to initial assessment				***-88%***	***-40%***

This assessment demonstrates a significant reduction in forecast traffic movements, of 88% and 40% in the AM and PM peak hours respectively, when compared to that considered in the traffic modelling supporting the Planning Proposal.

Similar to the traffic data analysis, it can be concluded that the traffic generation forecasts utilised in the detailed modelling supporting the Planning Proposal are conservative and therefore represent a worst case assessment of future year traffic conditions around the site. The previous analysis (utilising higher traffic movement numbers) concluded that the additional traffic arising from the rezoning of the site would have only minor impacts at key intersections surrounding the site. Utilising contemporary traffic data and current land use assumptions the impacts of the proposal would be even lower when compared to that stated in the original documentation.

3.3 Vehicle site access arrangements

No changes are proposed to the vehicle site access arrangements compared to that considered in the detailed traffic assessment supporting the Planning Proposal. As indicated in Figure 8 vehicles would access the site via Alexander Street which is appropriate given the status of both Falcon Street and the Pacific Highway as State Classified roads.

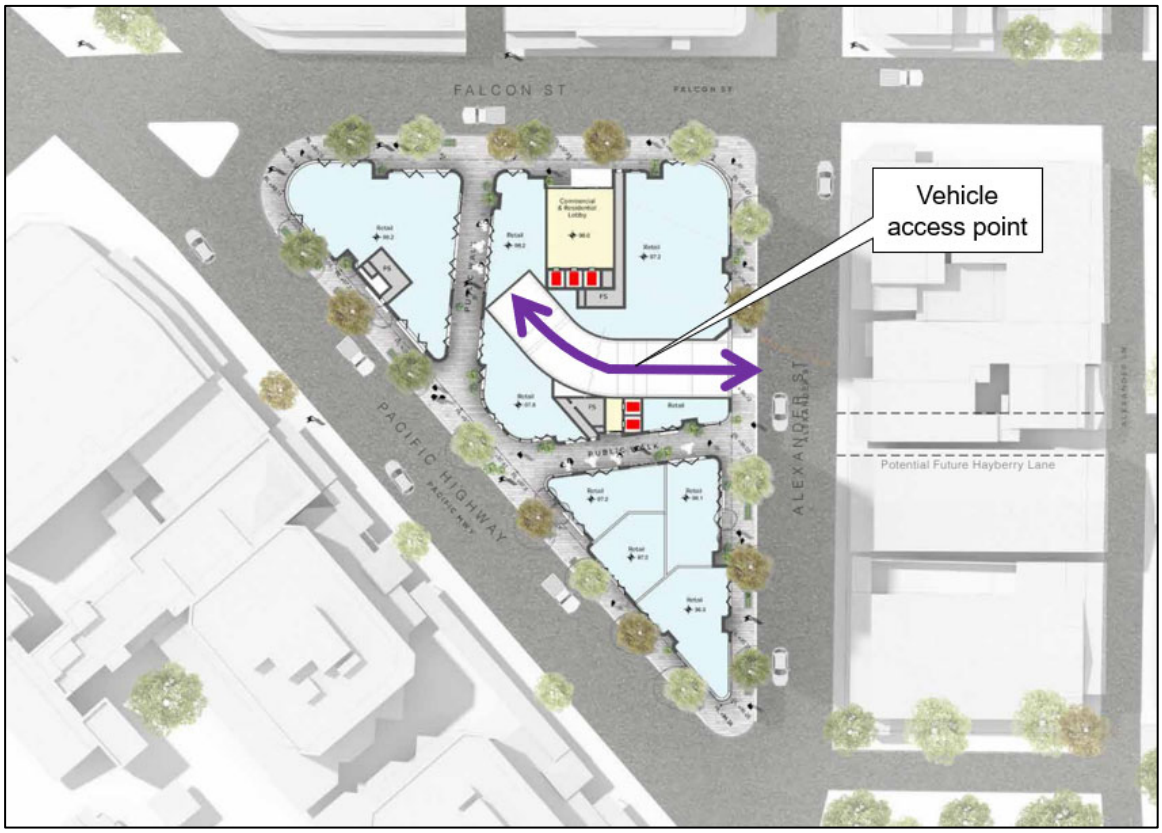


Figure 8 Vehicle site access point

3.4 Car parking

The parking numbers for the site considered in this supplementary transport assessment are consistent with those noted in the Traffic and Parking Impact Assessment Report prepared by Barker Ryan Stewart and detailed in Appendix B of this document. It is important to note however that the parking numbers noted in the Planning Proposal documentation are:

- Preliminary only and based on the reference scheme prepared by Turner Architects; and
- Compliant with Council's current parking controls for the Crows Nest centre

The Planning Proposal does not seek to 'lock in' a set number of parking spaces which will be confirmed at the time of the Development Application (DA). The final parking numbers for the site will be based on Council's controls in place at the time of the DA lodgement.

Importantly the site is well located with respect to existing and future public transport, including the future Crows Nest metro station. The final proposal would include various measures to minimise traffic impacts including improved pedestrian connections, high level of bicycle parking as well as car share spaces on site for the benefit of all future users. The current proposal includes provision for up to 12 car share vehicles within the development which will support reduced levels of traffic activity generated by the site.

3.5 Bicycle and motorcycle parking

The reference scheme prepared for the Planning Proposal considers up to 292 bicycle parking spaces and 13 motorcycle spaces – consistent with the rates noted in the North Sydney DCP. While the final number of bicycle and motorcycle parking spaces will be confirmed at the time of the Development Application, parking for these uses will form a core component of the overall transport strategy for the site. In this respect the approach outlined in the December 2021 Traffic and Parking Impact Assessment Report remains relevant to the proposal as it currently stands.

4 Summary

This supplementary transport assessment report has been prepared by JMT Consulting in support of the Planning Proposal for the Five Ways Triangle Site in Crows Nest. The supplementary assessment has been prepared to confirm the accuracy and suitability of the traffic data utilised in the detailed Traffic and Parking Impact Assessment Report prepared during 2020 and 2021 supporting the Planning Proposal – responding to advice provided by the Sydney North Planning Panel. Key findings of this supplementary assessment are as follows:

- Traffic counts undertaken in October 2022 show that traffic movements at key intersections surrounding the site are lower compared to those assumed in the detailed traffic modelling supporting the Planning Proposal – with reductions in traffic of between 5% and 17% at the Pacific Highway / Falcon Street / Shirley Road and Pacific Highway / Alexander Street intersections respectively when compared to 2020.
- Taking into account the most up to date reference scheme and appropriate traffic generation rates there is expected to be a significant reduction in forecast traffic movements of 88% and 40% in the AM and PM peak hours respectively when compared to that considered in the traffic modelling supporting the Planning Proposal.
- No changes are proposed to the vehicle site access arrangements compared to that considered in the detailed traffic assessment, with all vehicle access to be via Alexander Street.
- The parking numbers for the site considered in this supplementary transport assessment are consistent with those noted in the detailed traffic assessment, with the final numbers to be confirmed at the time of the Development Application for the site.
- Bicycle parking, motorcycle parking and car share will be provided within the site at rates consistent with those noted in the detailed traffic assessment.

In the above context the assumptions with respect to traffic numbers utilised in the Traffic and Parking Impact Assessment Report, which underpinned the detailed traffic modelling, are conservative and therefore represent a worst case assessment of future year traffic conditions around the site. Utilising contemporary traffic data and current land use assumptions the impacts of the proposal would be even lower when compared to that stated in the original documentation.

It can therefore be concluded that the original traffic data utilised for the Planning Proposal provides for a conservative and robust assessment of traffic conditions around the site when compared to current conditions and is therefore suitable for ongoing use.

Appendix A: October 2022 Traffic Count Data

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Pacific Hwy and Alexander St, Crows Nest

GPS *-33.828806, 151.201573*

Date:	Tue 25/10/22
Weather:	Fine
Suburban:	Crows Nest
Customer:	JMT

North:	Pacific Hwy
East:	Alexander St
South:	Pacific Hwy
West:	N/A

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	5:00 PM-6:00 PM

All Vehicles

Time		North Approach Pacific Hwy			East Approach Alexander St			South Approach Pacific Hwy			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
7:00	7:15	0	250	6	0	6	29	0	36	131	2121	
7:15	7:30	0	250	2	0	10	42	0	29	150	2364	
7:30	7:45	0	301	5	0	4	38	0	45	202	2638	
7:45	8:00	0	280	2	0	17	66	0	55	165	2752	
8:00	8:15	0	328	4	0	14	70	0	66	219	2844	Peak
8:15	8:30	0	363	4	0	26	63	0	85	216		
8:30	8:45	0	349	5	0	18	72	0	57	208		
8:45	9:00	0	311	6	0	28	65	0	55	212		
16:00	16:15	0	181	5	0	21	37	0	62	190	2152	
16:15	16:30	0	166	2	0	31	51	0	49	224	2241	
16:30	16:45	0	174	3	0	33	33	0	72	230	2347	
16:45	17:00	0	225	4	0	28	44	0	53	234	2394	
17:00	17:15	0	197	5	0	36	51	0	62	234	2401	Peak
17:15	17:30	0	207	2	0	31	53	0	66	270		
17:30	17:45	0	224	3	0	30	65	0	57	213		
17:45	18:00	0	252	4	0	31	37	0	59	212		

Peak Time		North Approach Pacific Hwy			East Approach Alexander St			South Approach Pacific Hwy			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	1351	19	0	86	270	0	263	855	2844
17:00	18:00	0	880	14	0	128	206	0	244	929	2401

Pedestrians Crossing

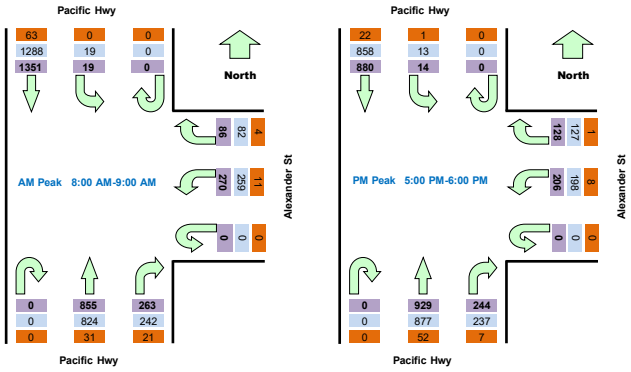
Time		North Approach Pacific Hwy		East Approach Alexander St		South Approach Pacific Hwy		Hourly Total
Period Start	Period End	Westbound	Eastbound	Northbound	Southbound	Westbound	Eastbound	
7:00	7:15	1	4	17	9	0	0	133
7:15	7:30	2	1	1	7	0	0	146
7:30	7:45	11	6	8	10	0	0	198
7:45	8:00	11	7	11	27	0	0	275
8:00	8:15	7	7	8	22	0	0	295
8:15	8:30	5	15	6	37	0	0	
8:30	8:45	11	10	6	85	0	0	
8:45	9:00	10	5	9	52	0	0	
16:00	16:15	3	20	9	6	0	0	141
16:15	16:30	15	9	7	8	0	0	136
16:30	16:45	4	15	4	3	0	0	133
16:45	17:00	11	3	16	8	0	0	142
17:00	17:15	10	8	12	2	1	0	154
17:15	17:30	8	4	18	6	0	0	
17:30	17:45	7	8	7	12	0	1	
17:45	18:00	13	13	14	10	0	0	

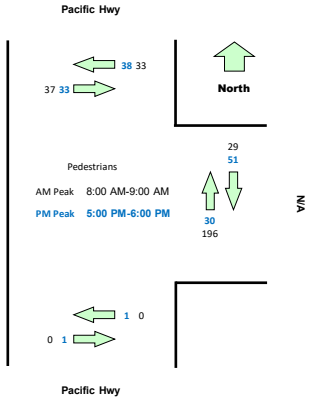
Peak Time		North Approach Pacific Hwy		East Approach Alexander St		South Approach Pacific Hwy		Peak total
Period Start	Period End	Westbound	Eastbound	Northbound	Southbound	Westbound	Eastbound	
8:00	9:00	33	37	29	196	0	0	295
17:00	18:00	38	33	51	30	1	1	154

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





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Date:	Tue 25/10/22
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All Vehicles

Time		North Approach Pacific Hwy				East Approach Falcon St				South Approach Pacific Hwy				West Approach ShirleyRd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	191	52	0	77	54	2	0	0	98	39	0	63	98	7	3208	
7:15	7:30	0	0	154	75	0	113	74	2	0	0	125	35	0	96	103	13	3480	
7:30	7:45	0	0	226	76	0	72	60	2	0	0	147	59	0	78	131	3	3645	
7:45	8:00	0	0	186	85	0	129	73	1	0	0	134	48	0	95	127	5	3787	
8:00	8:15	0	0	237	74	0	105	79	1	0	0	165	68	0	94	123	7	3877	Peak
8:15	8:30	0	0	285	85	0	96	44	4	0	0	179	63	0	78	116	5		
8:30	8:45	0	0	276	94	0	125	79	2	0	0	182	44	0	76	110	8		
8:45	9:00	0	0	227	89	0	128	57	3	0	0	175	65	0	87	126	16		
16:00	16:15	0	0	152	99	0	87	115	5	0	0	141	70	0	29	89	6	3326	
16:15	16:30	0	0	131	109	0	105	114	3	0	0	160	95	0	34	86	6	3442	
16:30	16:45	0	0	140	98	0	79	85	4	0	0	158	105	0	33	76	7	3566	
16:45	17:00	0	0	194	101	0	91	127	2	0	0	161	101	0	33	88	7	3698	
17:00	17:15	0	0	170	104	0	89	131	3	0	0	171	99	0	29	99	14	3716	Peak
17:15	17:30	0	0	168	105	0	93	146	1	0	0	166	135	0	40	103	10		
17:30	17:45	0	0	176	125	0	76	124	4	0	0	135	108	0	47	113	9		
17:45	18:00	0	0	201	102	0	98	119	5	0	0	144	99	0	50	94	11		

Peak Time		North Approach Pacific Hwy				East Approach Falcon St				South Approach Pacific Hwy				West Approach ShirleyRd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:00	9:00	0	0	1025	342	0	454	259	10	0	0	701	240	0	335	475	36	3877
17:00	18:00	0	0	715	436	0	356	520	13	0	0	616	441	0	166	409	44	3716

Pedestrians Crossing

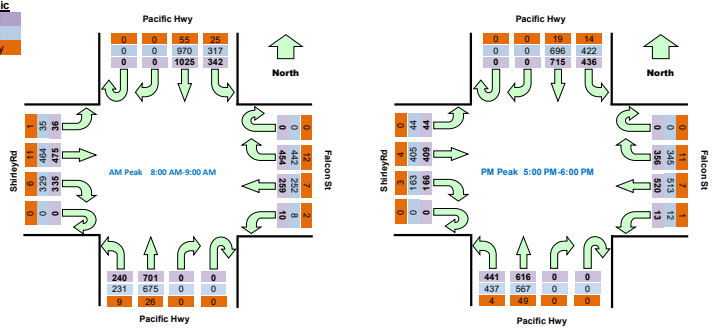
Time		North Approach Pacific Hwy		East Approach Falcon St		South Approach Pacific Hwy		West Approach ShirleyRd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:00	7:15	8	12	16	24	7	8	6	10	476
7:15	7:30	20	17	7	12	3	16	20	14	544
7:30	7:45	18	24	18	19	8	9	18	19	578
7:45	8:00	16	28	21	21	9	18	12	18	640
8:00	8:15	18	34	20	23	5	23	18	18	653
8:15	8:30	14	35	20	28	6	12	14	14	
8:30	8:45	24	38	30	12	7	14	48	22	
8:45	9:00	12	38	19	24	3	23	29	8	
16:00	16:15	26	23	10	17	2	16	14	8	522
16:15	16:30	35	24	13	25	7	17	10	19	616
16:30	16:45	34	28	9	6	8	15	8	11	669
16:45	17:00	40	26	16	18	6	8	12	11	720
17:00	17:15	38	28	18	34	9	30	24	29	777
17:15	17:30	42	36	24	28	16	22	14	21	
17:30	17:45	52	30	20	14	6	9	14	25	
17:45	18:00	42	20	21	35	10	22	15	29	

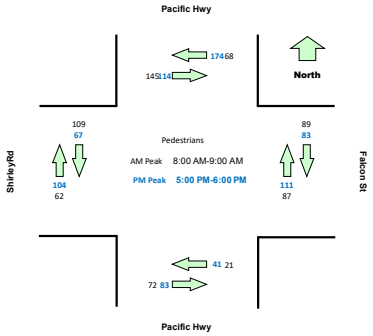
Peak Time		North Approach Pacific Hwy		East Approach Falcon St		South Approach Pacific Hwy		West Approach ShirleyRd		Peak hour total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
8:00	9:00	68	145	89	87	21	72	109	62	653
17:00	18:00	174	114	83	111	41	83	67	104	777

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Appendix B: Traffic and Parking Impact Assessment Report (December 2021)

BARKER RYAN STEWART

Deicorp Projects (Crows Nest) Pty Ltd

Traffic and Parking Impact Assessment Report

Fiveways, Crows Nest

16 December 2021

ENGINEERING
PLANNING
SURVEYING
CERTIFICATION

brs.com.au

Project No.	CC200015
Author	RD
Checked	GB
Approved	GB

Rev No.	Status	Date	Comments
7	Final	16/12/2021	

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Table of Contents

1 Introduction

Barker Ryan Stewart have been engaged by Deicorp Projects (Crows Nest) Pty Ltd to prepare a Traffic and Parking Impact Assessment Report in accordance with the requirements of the NSW Government's "Guide to Traffic Generating Developments" and the North Sydney DCP 2013 to support a Planning Proposal to North Sydney Council for a mixed-use development consisting of residential apartments, commercial and retail space at the site known as the Five Ways Triangle on the Pacific Highway at Crows Nest.

The purpose of this report is to assess and address traffic, access, car parking and pedestrian issues generated by the proposed development. This can be briefly outlined as follows:

- The expected traffic generation to/from the proposed development.
- The impact of the proposed development on the road network.
- An analysis based on RMS traffic counts
- Vehicle parking provisions.
- Access design requirements.
- Provision for pedestrians
- Availability of public transport.

This Traffic and Parking Impact Assessment Report concludes that the subject site is suitable for the proposed development in relation to traffic impact, access and safety considerations.

1.1 References

- North Sydney Local Environmental Plan 2013
- North Sydney Development Control Plan 2013
- Existing Road Network – *St Leonards and Crows Nest Station Precinct Transport Study* prepared by Cardno for the NSW Department of Planning and Environment, 2017.
- NSW Roads and Maritime Services, *Guide to Traffic Generating Developments,* Version 2.2 dated October 2002.
- Australian Standards AS/NZS 2890.1: 2004 Parking - Off-street car parking, AS/NZS 2890.6: 2009 – Off-street parking for people with disabilities and AS 2890.2: 2018 Off-street commercial vehicle facilities

2 Existing Conditions

2.1 The Site

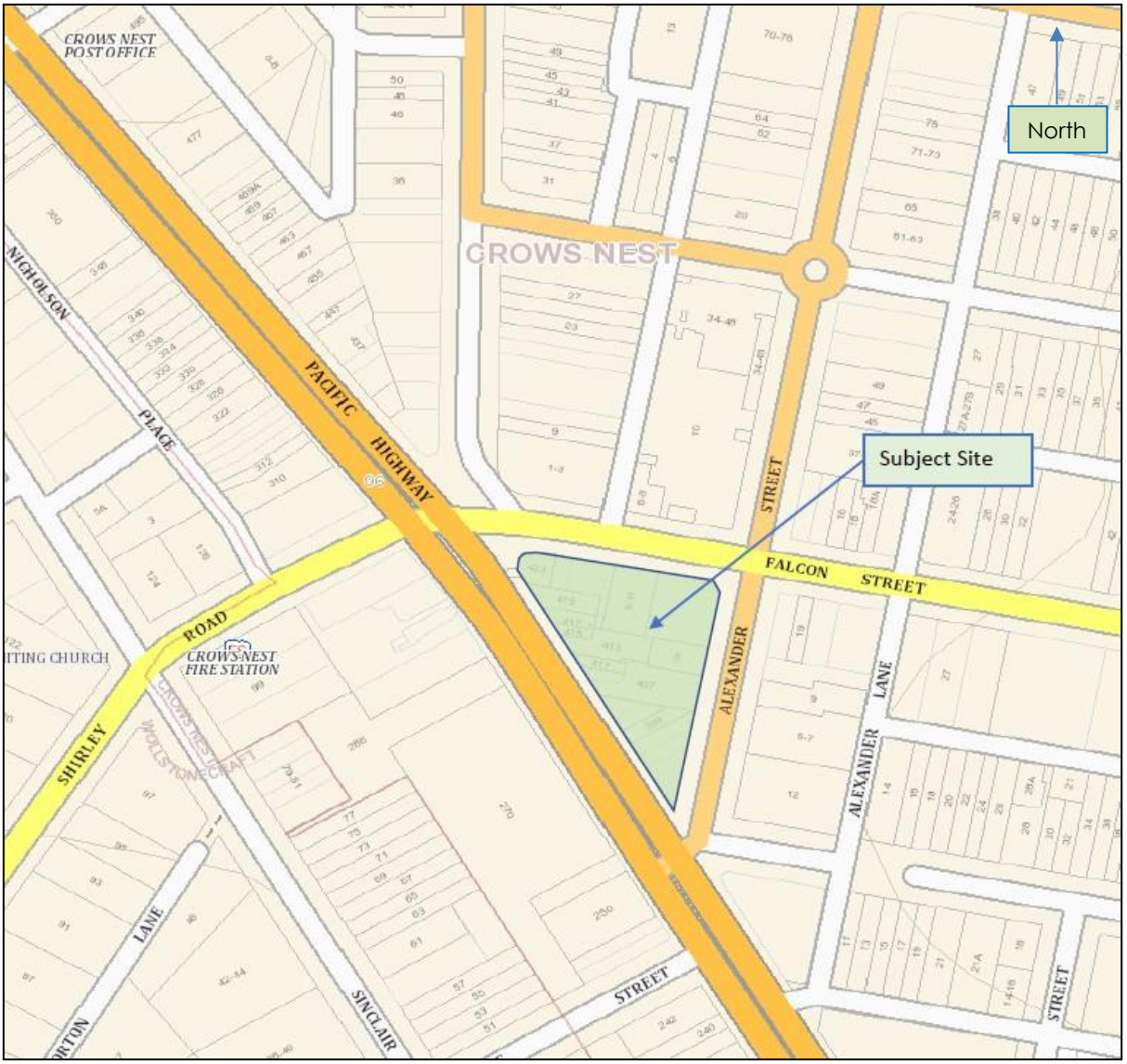


Figure 1: *Site Location*

The Five Ways Triangle comprises multiple sites on a triangular parcel of land bounded by the Pacific Highway in the west, Falcon Street in the north and Alexander Street in the east as shown above in Figure 1.

The street addresses are 401 to 423 Pacific Highway, 3 to 15 Falcon Street and 8 Alexander Street, Crows Nest. The property descriptions are Lots 1 to 6 DP 16402, Lots 1 to 11 DP 29672, Lot 1 DP 127595 and Lot 1 DP 562966.

According to the North Sydney LEP 2013, the site is zoned as B4 Mixed Use which permits the development of a variety of land uses including residential flat buildings and commercial premises(business, office and retail).

2.2 Surrounding Land Uses

The area north of the site is zoned as B3 Commercial Core and Mixed Use comprising the area around Willoughby Road with a variety of small businesses and retail shops and cafes.

East of the site is predominately R2 Low Density Residential and some R3 Medium Density Residential. The areas west and south.

2.3 Existing Road Network

The roads immediately surrounding the site that will be directly impacted by the development are the Pacific Highway, Falcon Street and Alexander Street.

Pacific Highway

The Pacific Highway is part of the state road network that provides the major north / south route through the locality from the Warringah Freeway at North Sydney to the M1 Motorway. It functions as an arterial road with 3 lanes in each direction, including a part-time bus lane (southbound) and a T3 Lane (northbound). It runs along the western boundary of the site where there are bus zones on either side of the road.

Falcon Street

Falcon Street is part of the state road network providing an east-west link between the Pacific Highway and the Warringah Freeway and runs along the northern boundary of the site. In the immediate vicinity of the site Falcon Street is a clearway in both directions. Further east of Alexander Street there is time-limited parking permitted on both sides of the road. There is a bus zone located on the northern side of the road opposite the site.

Alexander Street

Alexander Street is a local street aligned generally in a north / south direction along the eastern boundary of the site. It is line marked as a four-lane, two-way road with a BB centreline. There is a bus zone on the eastern side of the road, time-limited parking on both sides outside of peak periods and NoStopping during peak periods.

Street-level shops are located along both sides of Alexander Street immediately surrounding the site and there is a Woolworths supermarket and 4-storey carpark on the corner of Alexander Street and Falcon Street.

Shirley Road

Shirley Road is a local street that provides a connection between the Pacific Highway and the residential area of Wollstonecraft east of the north shore rail line. It also connects with River Road, a local collector road providing an east/west connection between Lane Cove and Crows Nest.

The section of Shirley Road between the Pacific Highway and River Road is line marked as a four-lane,two-way road with a BB centreline and full-time No Stopping restrictions on both sides.

Intersections

The 3 intersections surrounding the site, Pacific Highway / Alexander Street, Pacific Highway / Falcon Street / Shirley Road and Falcon street / Alexander Street are all controlled by traffic signals. At the Pacific Highway / Falcon Street intersection the right turn movement from the Pacific Highway south leg to Falcon

Street is not permitted. Access from the Pacific Highway to Falcon Street is facilitated by right turns at the Pacific Highway / Alexander Street intersection and at the Alexander Street / Falcon Street intersection.

2.4 Existing Traffic Volumes

To assess the existing traffic volumes on the road network relevant to this report, AM and PM peak period traffic counts were conducted at the three signalised intersections surrounding the site on Wednesday 22 April 2020 from 7.00am to 9.00am and from 4.00pm to 6.00pm.

Note: It is acknowledged that the traffic counts were conducted at a time of reduced traffic volumes generally across Sydney due to the Coronavirus pandemic. Consequently, SCATS traffic count data was obtained from Transport for NSW for a typical mid-week day in February 2020 for the Pacific Highway / Alexander Street and the Pacific Highway / Falcon Street / Shirley Road intersections and used to calibrate the observed traffic data.

The April 2020 traffic counts at these intersections were compared to the SCATS detector counts recorded on Wednesday 5 February 2020. This comparison indicated that the February 2020 SCATS volumes were significantly higher than the April 2020 counts in both peak periods as follows:

	SCATS Volumes		Counts		% Increase	
	AM	PM	AM	PM	AM	PM
Pacific Hwy / Alexander St	2875	2681	1364	1338	210%	200%
Pacific Hwy / Falcon St	3516	3716	2136	2293	165%	162%

Consequently, the April 2020 volumes at all intersections were increased by these factors for input to the SIDRA modelling.

The results of these calibrated traffic counts are illustrated below.

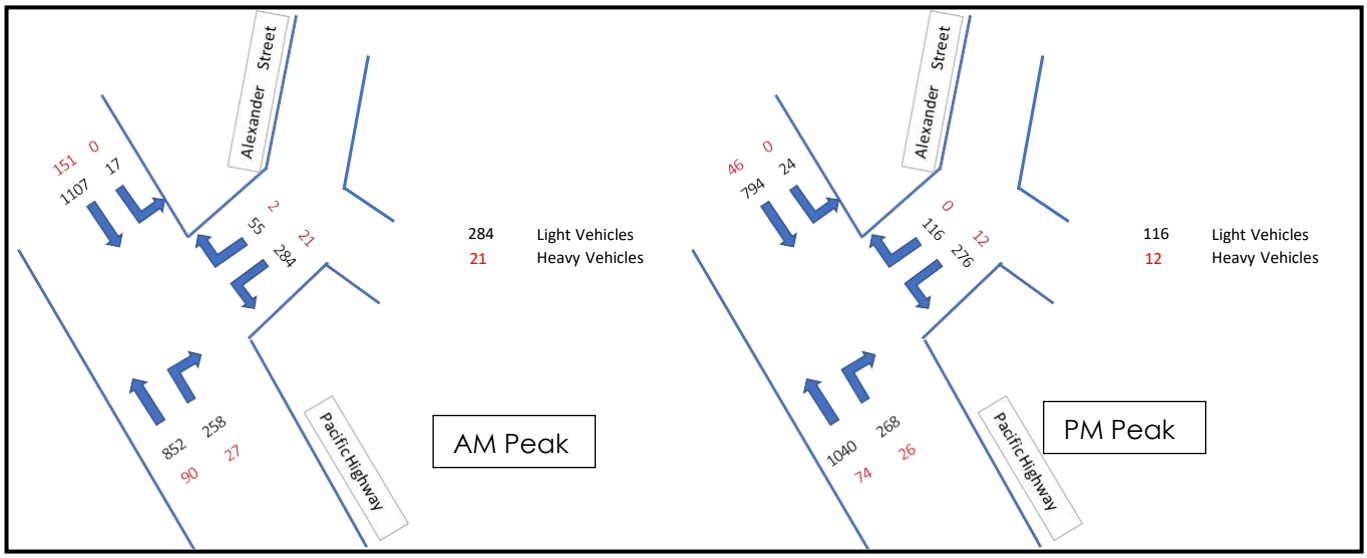


Figure 2: *Pacific Highway / Alexander Street*

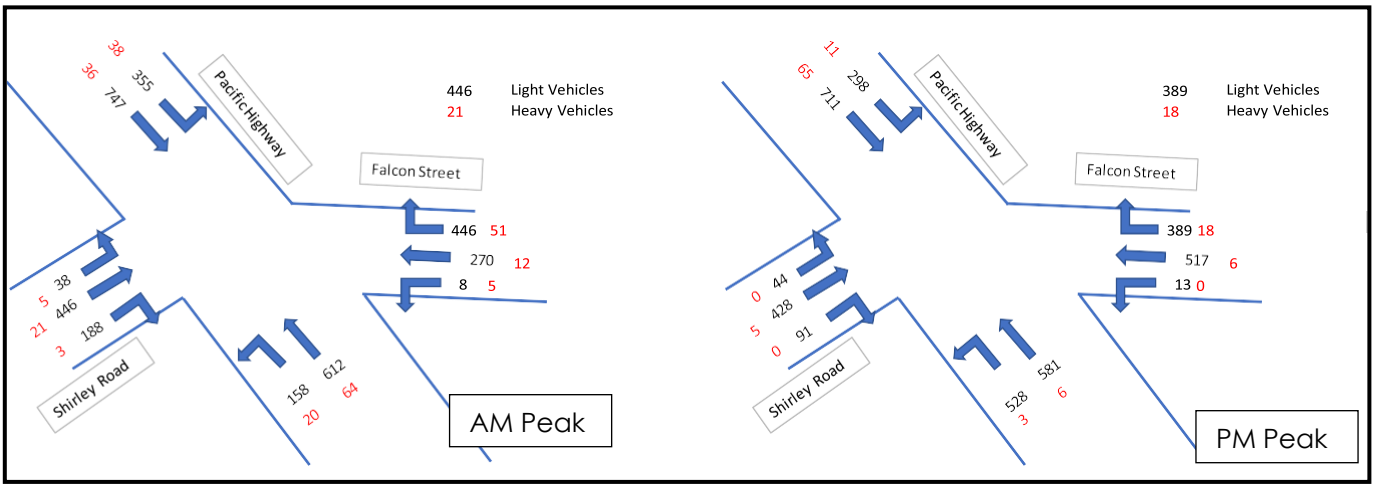


Figure 2: *Pacific Highway / Falcon Street / Shirley Road*

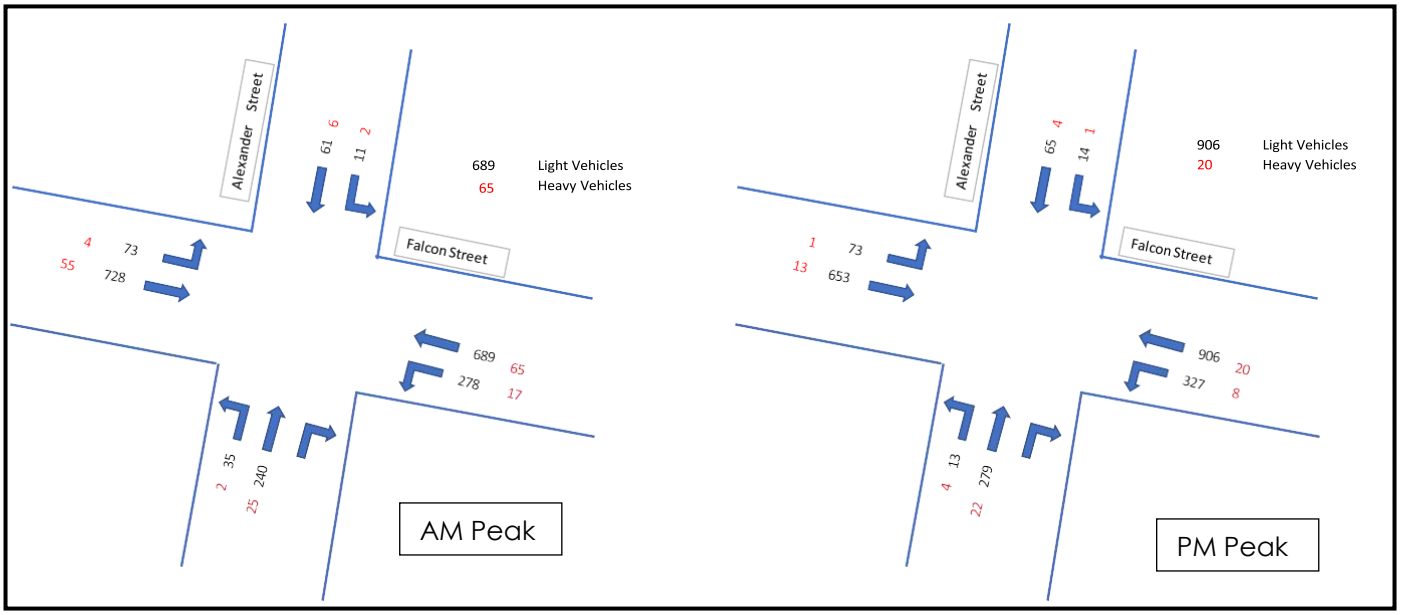


Figure 3: *Falcon Street / Alexander Street*

The calibrated traffic counts and SCATS data for the 3 intersections for this assessment provide data on the current hourly volumes and an indication of the existing peak hour operational performance of eachof the roads in the area surrounding the site.

Below is an overview of the hourly traffic volumes and the current operational performance of the surrounding network, based on the *'Guide to Traffic Generating Developments'* that states:

'typical one-way mid-block lane capacities on urban arterial roads under interrupted flow conditions are 900-1000 veh/hr/lane. This calculation assumes Clearway conditions. The capacity falls to 600 veh/hr/lane for a kerbside lane with occasional parked vehicles. These capacities at times may increase under ideal conditions to 1200-1400 veh/hr.'

Pacific Highway (North of Falcon Street)

AM – 2,392 vehicles per hour two-way (1,216 northbound and 1,176 southbound). The northbound carriageway (3 lanes) averaged 405 vehicles per lane (LoS B). The southbound carriageway (3 lanes) averaged 392 vehicles per lane (LoS B).

PM – 2,123 vehicles per hour, two-way (1,038 northbound and 1,085 southbound). The northbound carriageway (3 lanes) averaged 346 vehicles per lane LoS B). The southbound carriageway (3 lanes) averaged 362 vehicles per lane (LoS B).

These volumes indicate that the Pacific Highway is operating at less than 50% capacity during peakperiods.

Falcon Street

AM – 1,652 vehicles per hour, two-way (860 eastbound and 792 westbound). Eastbound carriageway (2 lanes) averaged 430 vehicles per lane (LoS C). Westbound carriageway (2 lanes) averaged 396 vehicles per hour (LoS B).

PM – 1,685 vehicles per hour, two-way (742 eastbound and 943 westbound). Eastbound carriageway (2 lanes) averaged 371vehicles per lane (LoS B). Westbound carriageway (2 lanes) averaged 472 vehicles per hour (LoS B).

These volumes indicate that Falcon Street is operating at around 50% capacity during peak periods.

Shirley Road

AM – 1,161 vehicles per hour, two-way (701 eastbound and 460 westbound). Eastbound carriageway (2 lanes) averaged 350 vehicles per lane (LoS B). Westbound carriageway (2 lanes) averaged 230 vehicles per hour (LoS A).

PM – 1,622 vehicles per hour, two-way (568 eastbound and 1,054 westbound). Eastbound carriageway (2 lanes) averaged 284 vehicles per lane (LoS B). Westbound carriageway (2 lanes) averaged 527 vehicles per hour (LoS C).

These volumes indicate that Shirley Road is operating at around 50% capacity during peak periods.

Alexander Street

AM - 664 vehicles per hour, two-way (302 northbound and 362 southbound) The northbound carriageway (2 lanes) averaged 151 vehicles per lane (LoS A). The southbound carriageway (2 lanes) averaged 181 vehicles per lane (LoS A).

These volumes indicate that Alexander Street is operating at 20 to 30% capacity during peak periods.

These hourly volumes indicate that the road network surrounding the site is operating at a high level of service, which shows that the network has ample capacity to cater for additional traffic that will be generated by developments in the area.

2.5 Public Transport, Pedestrians

The site is located close to several bus routes providing the services along the Pacific Highway, Falcon Street, Shirley Road and Alexander Street to a wide range of destinations including King Street Wharf, North Sydney, Chatswood, Lane Cove, McMahons Point, Bondi, Epping, Mascot, Gore Hill, Ryde, Riverview, Denistone East, Manly, Balmoral Beach, Spit Junction and Kingsford.

Bus stops are located within 100 metres of the site in the Pacific Highway, Falcon Street, Shirley Road and

Alexander Street.

St Leonards Station is located 1km to the north-west along the Pacific Highway and the new Crows Nest Metro Station will be located on the eastern side of the Pacific Highway generally bounded by Oxley Street, Clark Lane and Hume Street. Station access will be via the corner of Clark Street and Hume Streetand at the corner of Pacific Highway and Oxley Street. The closest station entrance will be 240 metres from the site.

Sydney Metro will create connections between Sydney's north-west, west and south-west regions to Sydney's CBD and is scheduled for completion by 2024.

The site is therefore well-serviced by public transport offering a convenient alternative to the use ofprivate vehicles for access to and from the site.

Pedestrian access to and from the site is facilitated by the existing network of pedestrian footways connecting the site to the nearby supermarket and a variety of cafes, restaurants and speciality shops located along both sides of Willoughby Road. Details of bicycle paths are also available and shown attached in Appendix C.

The locations of public transport infrastructure in the vicinity of the site are shown below in Figure 5. Additional details are attached at Appendix A (Bus Route Map) and Appendix B (Sydney Train Map).

Figure 4: *Bus stops close to the site. (Source: Google Maps 2020)*

3 Proposed Development

3.1 The Development

The proposal is for a mixed-use development consisting of 129 residential apartments and 8,002m² of non-residential space (1,849m² retail and 6,153m² commercial). It is proposed to provide 385 parking spaces in 7 separate basement levels as well as storage for 404 bicycles and parking spaces for 22 motorcycles.

The proposed unit mix is provided below:

1-bedroom	32 Apartments
2-bedroom	79 Apartments
3-bedroom	18 Apartments
Total =	129 Apartments

3.2 Access and Car Park

Vehicular access to and from the site will be via a single 9 metre wide driveway off Alexander Street that will be utilised by residents, visitors and service vehicles (deliveries and waste collection).

The entry/exit driveway, car parking areas and waste loading bay will be designed to comply with AS/NZS 2890.1-2004 Parking Facilities – Off Street Car Parking, AS 2890.2-2002 Parking Facilities – Off Street Commercial Vehicle Facilities, AS/NZS 2890.6-2009 off-street parking for people with disabilities and Council's DCP requirements.

The proposed driveway location complies with Figure 3.3 – Minimum Sight Distance for Pedestrian Safety AS/NZS 2890.1 and the proposed driveway gradients comply with AS/NZS 2890.1.

Pedestrian access to the residential lobby will be via Alexander Street and access to the commercial lobby will be via Falcon Street. The retail and community spaces will be on the ground floor with accessfrom Pacific Highway, Falcon Street and Alexander Street via through site links.

Swept path plans will be provided at DA stage demonstrating the circulation of vehicles within the basement carpark levels.

3.3 Service Vehicles and loading

Waste collection is proposed to be conducted by Council waste vehicles utilizing the collection area which is located at the north-western corner of Basement 01. Waste and recycling bins will be stored in separate designated residential, retail and commercial refuse areas. Vehicle manoeuvring into and outof this area will facilitated by a turntable that will allow vehicles to enter and exit the site in a forward direction.

Swept path plans will be provided at DA stage demonstrating forward ingress and egress of the Council waste vehicle.

3.4 Parking Provision and Requirements

The parking provision for the residential apartments and the non-residential developments will beprovided in accordance with the requirements of North Sydney Council's Development Control Plan 2013.

Car Parking

For residential flat buildings (B4 Mixed-Use) the parking requirements are:

- Studio/1 bedroom – 0.5 spaces per dwelling;
- or more bedrooms – 1 space per dwelling;
- Food and drink premises – 1 space per 50m^2;
- All other commercial/retail uses - 1 space per 60m^2.

Table 1: *Car parking requirements and provision*

Land Use	North Sydney DCP 2013	Proposed Parking Provision
Residential: • 32 x 1-bedroom units; • 79 x 2-bedroom units; • 18 x 3-bedroom units	DCP Rates • 0.5 space per 1-br x 32 = 16 spaces • 1 space per 2-br x 79 = 79 spaces • 1 space per 3-br x 18 = 18 spaces	**247 spaces** • 113 residential • 134 non-residential including 12 car share spaces
Total = 129 Units	**Total = 113 Residential spaces**	
Non-Residential: 8,002m^2 GFA	1 space per 60m^2 = 8,002 / 60 = 134 spaces **Total = 134 Non- residential spaces**	

The proposed 247 car parking spaces are in accordance with the DCP requirements.

Proximity to public transport

As discussed in Section 2.5 of this report, the site is well-serviced by public transport offering a convenient alternative to the use of private vehicles for access to and from the site.

The site is located close to several bus routes providing services along the Pacific Highway, Falcon Street, Shirley Road and Alexander Street to a wide range of destinations across the Sydney metropolitan area, bus stops are located within 100 metres of the site in the Pacific Highway, Falcon Street, Shirley Road and Alexander Street and St Leonards Station is located 1km to the north-west along the Pacific Highway. In addition, the new Crows Nest Metro Station will be located on the eastern side of the Pacific Highway with the closest station entrance 400 metres from the site.

Sydney Metro will create connections between Sydney's north-west, west and south-west regions to Sydney's CBD and is scheduled for completion by 2024.

The site will therefore meet the requirements of transit-oriented developments which usually have the following characteristics;

- A rapid and frequent transit service;
- High accessibility to the transit station;
- A mix of residential, retail, commercial and community uses;
- High quality public spaces and streets, which are pedestrian and cyclist friendly
- Medium to high density development within 800 metres of the transit station; and
- Reduced rates of private car parking

Car Share

The provision of 12 car share spaces as part of the non-residential retail and commercial areas will also assist in meeting the travel needs of the residents and the staff and the customers of the retail and commercial areas and contribute to reducing the demand for individually held parking spaces. The availability of the car sharefacility will provide a viable alternative to the purchase of a vehicle or an additional vehicle, particularly in situations where a vehicle is only required on an intermittent basis.

Accessible Parking

The North Sydney DCP requires accessible parking at the rate of 1 space per 10 residential parking spaces provided. The proposed development will therefore require 12 of the residential spaces to be accessible parking spaces.

Bicycle Parking

Secure bicycle parking for residents will be provided within the each of the basement carparks from Basements 02 to 07 in separate bicycle storage areas. Bicycle racks will be provided in Basements 01 and 02 for the use of visitors to the various land uses within the site (residential, commercial, retail and community). These will service the bicycle parking needs of both residents and visitors.

Table 2: *Bicycle parking requirements and provision*

Land Use	North Sydney DCP 2013	Proposed Parking Provision
Residential (129 units) Residential visitors Commercial (6,153m²) Retail (1,849m²)	1 resident space per unit = 129 spaces 1 visitor space per 10 units x 129 = 13 spaces 1 space per 150m² for staff = 6,153 / 150 = 41 spaces 1 space per 400m² for visitors = 6,153 / 400 = 16 spaces1 space per 25m² for staff = 1,849/ 25 = 74 spaces 1 space per 100m² for visitors = 1,849/ 100 = 19 spaces	**Total = 292 spaces**

The proposed 292 bicycle spaces are in accordance with the DCP requirements.

Motorcycle Parking

Table 3: *Motorcycle parking requirements and provision*

Land use	North Sydney DCP 2013	Proposed Parking Provision
Residential: 129 residential car spaces	1 space per 10 residential carspaces = 13 spaces	13 spaces

The proposed 13 motorcycle parking spaces are in accordance with the DCP requirements.

4 Traffic Assessment

4.1 Trip Generation

In accordance with the *RMS "Guide to Traffic Generating Developments"* and Technical Direction TDT 2013/04a *"Guide to Traffic Generating Developments, Updated Traffic Surveys"* the following trip generation rates have been adopted for this assessment:

Table 4: *Trip generation rates*

Use	AM Trip Rates	PM Trip Rates
Residential	0.19 trips per units	0.15 trips per units
Retail	1.94 per 100m^2	2.7 trips per 100m^2
Commercial	1.6 trips per 100m^2	1.2 trips per 100m^2

4.1.1 Existing Development

The existing developments on the site consist of a mix of retail and commercial sites covering an area of approximately 3,200m^2.

Retail developments (assume 1,200m^2)
AM peak (1 hour) vehicle trips = 1,200 / 100 x 1.94 = 23 trips
PM peak (1 hour) vehicle trips = 1,200 / 100 x 2.7 = 32 trips

Commercial developments (1,600m^2)
AM peak (1 hour) vehicle trips = 2,000 / 100 x 1.6 = 32 trips
PM peak (1 hour) vehicle trips = 2,000 / 100 x 1.2 = 24 trips

Total trip generation of the existing developments
AM peak (1 hour) vehicle trips = 55 trips
PM peak (1 hour) vehicle trips = 56 trips

4.1.2 Proposed Development:

Adopting the same trip generation rates as for the existing development, the proposed developmentwould generate the following peak hour trips:

Table 5: *AM and PM Trips*

Land Use	Yield	AM Peak Hour Trip Rate	AM Peak Hour Trips	PM Peak Hour Trip Rate	PM Peak Hour Trips
Residential	129 units	0.19 trips / unit	25	0.15 trips / unit	20
Retail	1,849 m^2	1.94 trips / 100m^2	36	2.7 trips / 100m^2	50
Commercial	6,153 m^2	1.6 trips / 100m^2	99	1.2 trips / 100m^2	74
Total	**-**		**160**		**144**

The additional trips that would be generated by the development compared to the existing situation are calculated as:

AM peak hour trips = 160 - 55 = 105 trips
PM peak hour trips = 144 - 56 = 88 trips

Table 6: *Calculation of additional trips*

Land Use	Existing AM Peak Hour Trips	Proposed AM Peak Hour Trips	Difference	Existing PM Peak Hour Trips	Proposed PM Peak Hour Trips	Difference
Residential	-	25	25	-	20	20
Retail	23	36	13	32	50	18
Commercial	32	99	67	24	74	50
Total	**55**	**160**	**105**	**56**	**144**	**88**

4.2 Trip Distribution and Assignment

The additional trips that are expected to be generated by the proposed development consist of both inbound and outbound trips.

For residential developments it is generally assumed that in the AM peak 80% of trips will be outboundand 20% inbound with the reverse situation during the PM peak.

For commercial developments the distribution of trips is assumed to be 80% inbound and 20% outboundin the AM peak with the reverse situation during the PM peak.

For the retail developments and the community facility the distribution of trips is assumed to be 50% inbound and 50% outbound in the AM and PM peaks.

On this basis, the proposed development would generate the following additional trips to the roadnetwork:

AM Peak (105 trips):

- Outbound – 39 trips
  - Residential – 20
  - Retail – 6
  - Commercial – 13
- Inbound – 66 trips
  - Residential – 5
  - Retail – 7
  - Commercial – 54

PM Peak (88 trips):

- Outbound – 53 trips
  - Residential – 4
  - Retail – 9
  - Commercial – 40
- Inbound – 35 trips
  - Residential – 16
  - Retail – 9
  - Commercial – 10

These trips will be assigned to the network based on journey to work data for the North Sydney LGAprovided in the 2016 census which indicated that trips should be assigned as 15% north, 65% south, 5% east and 15% west as derived from Figure 6 below.

Employment location of resident workers by LGA

export reset

North Sydney Council area

LGA	2016 Number	2016 %
Sydney (C)	16,098	39.9
North Sydney (A)	10,112	25.0
Willoughby (C)	2,907	7.2
Ryde (C)	1,808	4.5
Northern Beaches (A)	1,355	3.4
Mosman (A)	785	1.9
No Fixed Address (NSW)	740	1.8
Parramatta (C)	724	1.8
Lane Cove (A)	699	1.7
Ku-ring-gai (A)	548	1.4
Inner West (A)	501	1.2
Botany Bay (C)	438	1.1
Randwick (C)	388	1.0
The Hills Shire (A)	370	0.9
Canada Bay (A)	282	0.7
Woollahra (A)	282	0.7
Hornsby (A)	277	0.7
Waverley (A)	264	0.7
Blacktown (C)	185	0.5
Canterbury-Bankstown (A)	159	0.4

Show me more!

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented in profile.id by .id , the population experts.
Excludes employment locations with fewer than 10 people.

Figure 6: *Employment Location of resident Workers for North Sydney LGA*

4.3 Impact of Generated Traffic

Intersection performance has been assessed using the SIDRA modelling software which uses the level of service (delay) model adopted by Transport for NSW to assess intersection performance. Average delay is used to determine the level of service (LOS), which ranges from 'A' which is excellent service to 'F', with a LOS of 'D' being the minimum ideal performance.

The intersections outlined above have been assessed as a network for the existing and 10-year growth scenarios for AM and PM peak periods. A growth rate of 0.5 % per annum has been applied to the surveyed intersections to obtain the 10-year growth volumes, based on average historical growth ratesrecorded at Transport for NSW counting stations at Willoughby Road (Station ID: 33098) and River Road(Station ID: 32039) and an assumed reduction in the growth of traffic volumes in the area as a result of the Sydney Metro.

The differences in intersection performance between the existing and 10 year growth scenarios are summarised in the tables below. Note that the SIDRA analysis undertaken was based on the previous

proposal which consisted of 233 residential units whereas the current proposal is for only 129 units. The retail and commercial GFAs remain generally the same in both proposals. Therefore, the previous SIDRA analysis undertaken is considered to be conservative. SIDRA output reports are available in **Appendix E.**

Table 7: *Pacific Highway / Falcon Street / Shirley Road SIDRA Modelling Summary*

Pacific Highway / Falcon Street /Shirley Road		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	35.4	35.0	89.2	99.7
	LOS	C	C	F	F
PM	Delay (s)	41.9	43.7	57.8	67.3
	LOS	C	D	E	E

Table 8: Pacific Highway / Alexander Street SIDRA Modelling Summary

Pacific Highway / Alexander Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	12.5	12.2	19.6	20.7
	LOS	A	A	B	B
PM	Delay (s)	16.6	17.4	22.6	30.4
	LOS	B	B	B	C

Table 9: *Falcon Street / Alexander Street SIDRA Modelling Summary*

Falcon Street / Alexander Street		Existing Scenario		10-year growth scenario	
		Existing Conditions	Post Development Condition	Existing Conditions	Post Development Condition
AM	Delay (s)	16.3	16.0	48.6	48.3
	LOS	B	B	D	D
PM	Delay (s)	18.1	22.0	22.7	34.1
	LOS	B	B	B	C

As shown in the tables above, the existing intersections generally operate at high levels of service with acceptable average delays and will continue to do so with the additional traffic that will be generated by the proposed development.

In the future scenarios, the additional development traffic is expected to have only a minor impact on the delays experienced by motorists at the Pacific Highway / Alexander Street and the Falcon Street / Alexander street intersections that will continue to operate at high levels of service.

The Pacific Highway / Falcon Street / Shirley Road intersection, however, is expected to operate at low levels of service (E and F) in the future scenarios due primarily to the background growth in traffic through this intersection. The development traffic will only marginally impact on the intersection performance, increasing average delays by only 10 seconds.

In summary, the traffic from the subject development will not have any significant impact on the efficiency of the surrounding road network and should not be responsible for any network improvements.

Any future background growth should be addressed through changes in travel patterns and transport modes and/or intervention by the road authorities by upgrading infrastructure and /or introducing travel demand measures. Consequently, the development can be supported based on traffic grounds.

5 Conclusion

This Traffic Impact and Parking Impact Assessment Report has been prepared in accordance with the requirements of the North Sydney DCP 2013 and the NSW Government's "Guide to Traffic Generating Developments" to support a Planning Proposal for a mixed-use development consisting of residential apartments, retail space and community space at the site knownas the Five Ways Triangle on the Pacific Highway at Crows Nest.

The proposal is for a mixed-use development consisting of 129 residential apartments, commercial space (6,153m²) and retail space (1,849m²). It is proposed to provide 247 parking spaces in 5 separate basement levels as well as storage for 292 bicycles and parking spaces for 13 motorcycles.

The proposed number of car, bicycle and motorcycle parking spaces are in accordance with the North Sydney DCP 2013.

The site is well serviced by public transport offering a convenient alternative to the use of private vehicles for access to and from the site, providing opportunities for reducing the parking requirements for the proposal.

Vehicular access to and from the site will be via a single 9 metre wide driveway off Alexander Street that will be utilised by residents, visitors and service vehicles (deliveries and waste collection). Pedestrian access to the residential lobby will be via Alexander Street and access to the commercial lobby will be via Falcon Street. The retail and community spaces will be on the ground floor with access from Pacific Highway, Falcon Street and Alexander Street via through site links.

The proposed entry/exit driveway , car parking areas and waste loading facilities meet the requirements of the North Sydney DCP 2013 and will be designedin accordance with the requirements AS2890.1 – Off Street Car Parking, AS2890.2-2002 Parking Facilities – off Street Commercial Vehicle Facilities and AS2896.6 – Off Street Car Parking for People with Disabilities.

According to the SIDRA analysis undertaken, the additional traffic that will be generated by the development is not expected to have any significantimpact on the performance of the surrounding intersections, or the local road network.

From the above assessment, the subject site is considered suitable for the proposed development in relation to traffic impact, access, parking and safety considerations.

Appendix A

Bus Route Maps

Appendix B

Sydney Train Map

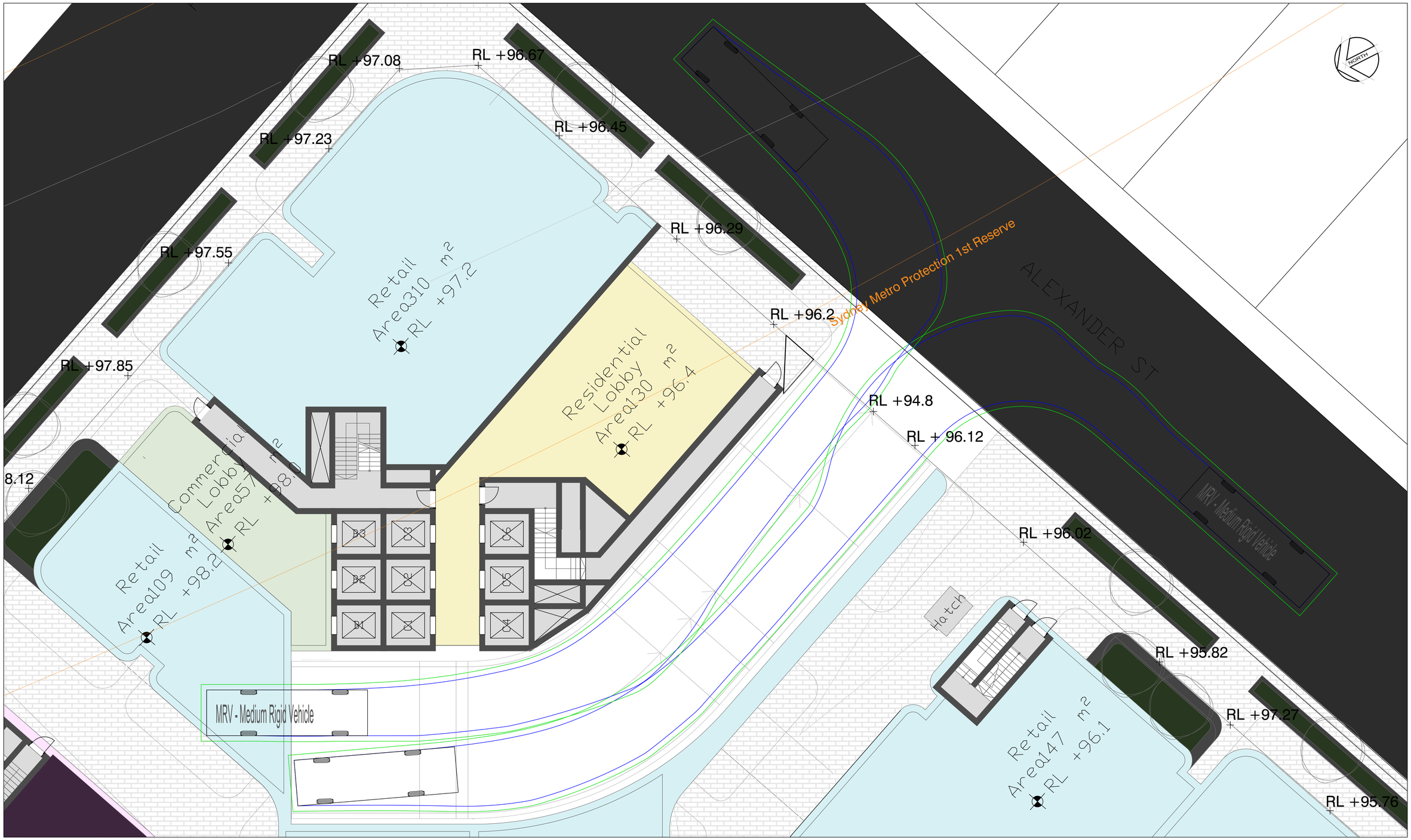
Appendix C

Cycleway Network Map

Appendix D

Swept Path Analysis

A1



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No	DATE	AMENDMENT
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C	30/04/2020	THIRD ISSUE
D	30/04/2020	FOURTH ISSUE
E	15/05/2020	FIFTH ISSUE

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CENTRAL COAST P: 02 4325 5255
HUNTER P: 02 4966 8388
ABN: 26 134 067 842
www.brs.com.au
mail@brs.com.au

Client: DEICORP

FIVE WAYS TRIANGLE, CROWS NEST

GRONUD FLOOR LEVEL LOADING DOCK ACCESS - 8.8M MRV

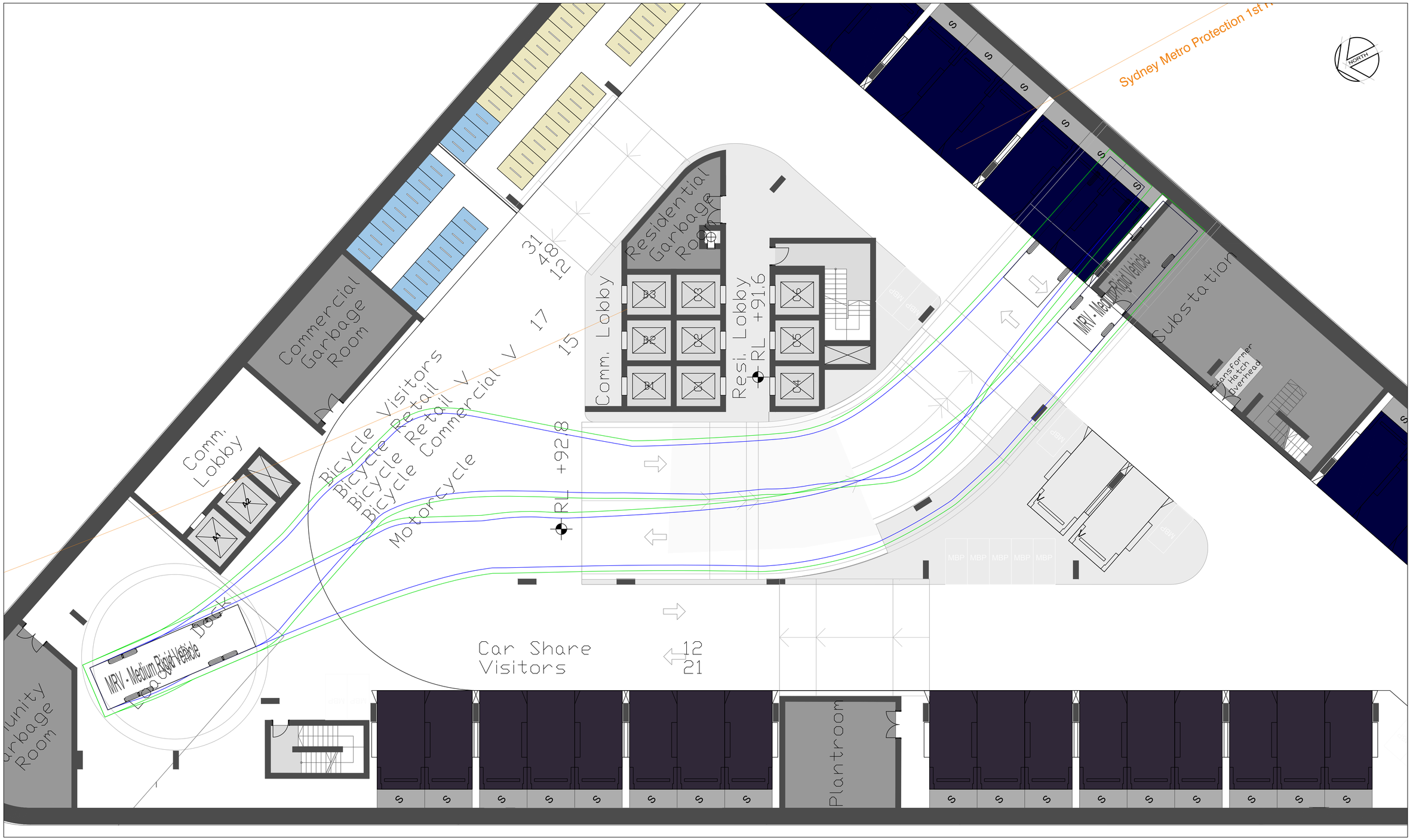
Designed: AAJ
Drawn: AAJ
Checked: AAJ

Scales: Plan
Horiz.
Vert.
X-Sect.

Datum: A.H.D.

Plan No. CC200015TR01
File Ref. CC200015D01E
REV. E
SHEET 1 OF 4 SHEETS

A1



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No	DATE	AMENDMENT
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HUNTER P: 02 4966 8388
ABN: 26 134 067 842
www.brs.com.au
mail@brs.com.au

Client: DEICORP

FIVE WAYS TRIANGLE, CROWS NEST

BASEMENT 1 LOADING BAY CIRCULATION - 8.8M MRV

Designed: AAJ
Drawn: AAJ
Checked: AAJ

Scales: Plan
Horiz.
Vert.
X-Sect.

Datum: A.H.D.

Plan No. CC200015TR02
File Ref. CC200015D01E
REV. E
SHEET 2 OF 4 SHEETS

A1

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No	DATE	AMENDMENT
A	12/03/2020	FIRST ISSUE
B	29/04/2020	SECOND ISSUE
C	30/04/2020	THIRD ISSUE
D	30/04/2020	FOURTH ISSUE
E	15/05/2020	FIFTH ISSUE

BARKER RYAN STEWART
TOTAL PROJECT SOLUTIONS
ENGINEERING | PLANNING | PROJECT MANAGEMENT | SURVEYING | CERTIFICATION

SYDNEY
P: 02 9659 0005
CENTRAL COAST
P: 02 4325 5255
HUNTER
P: 02 4966 8388
ABN: 26 134 067 842
www.brs.com.au
mail@brs.com.au

Client:

DEICORP

FIVE WAYS TRIANGLE, CROWS NEST

BASEMENT 1 PASSENGER VEHICLE CIRCULATION - B99 / B85

Designed: AAJ
Drawn: AAJ
Checked: AAJ

Scales: Plan
Horiz.
Vert.
X-Sect.

Datum: A.H.D.

Plan No.
CC200015TR03

File Ref.
CC200015D01E

REV.
E

SHEET 3 OF 4 SHEETS

A1

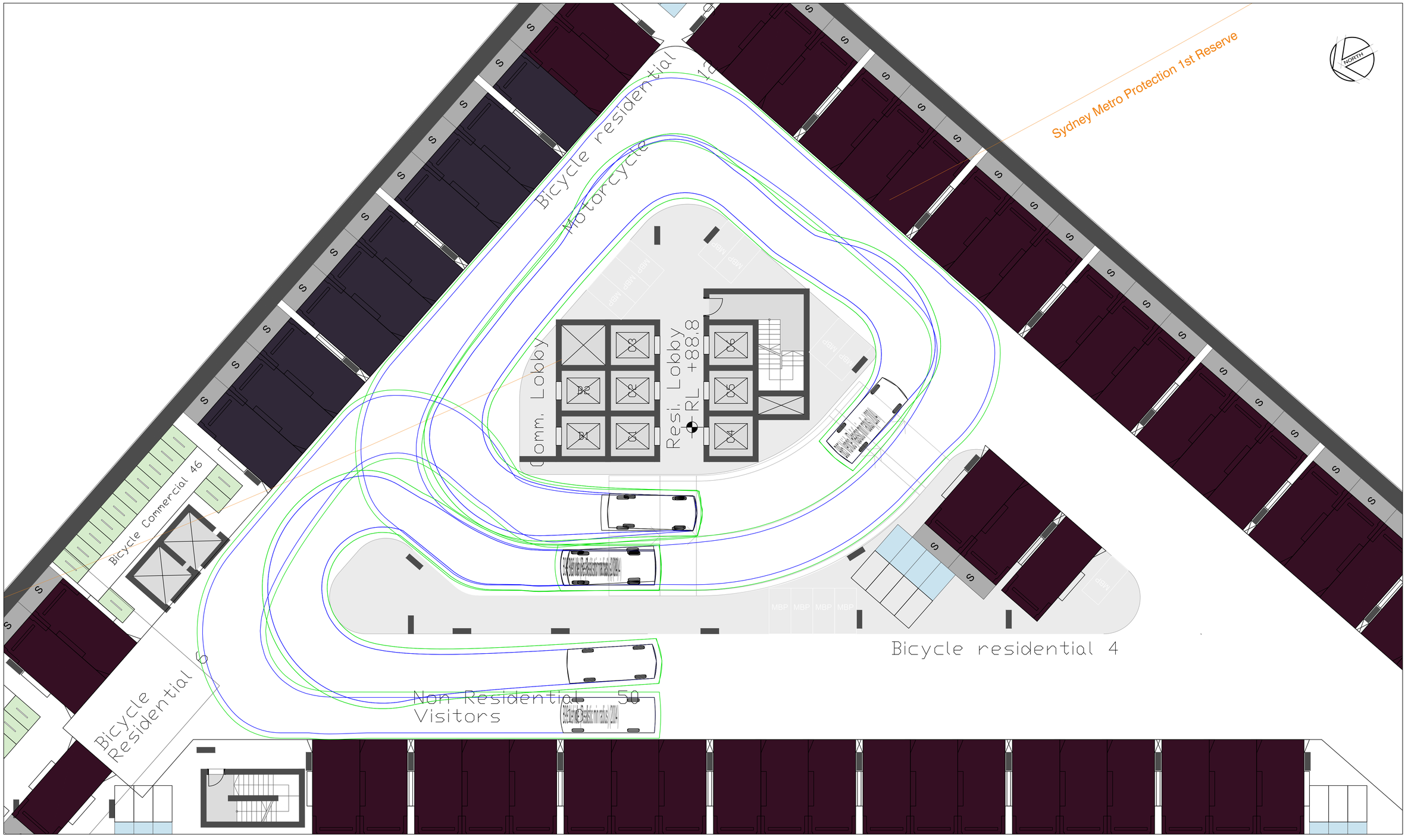

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IMAGE SOURCED FROM NEARMAP AUSTRALIA PTY LTD

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No	DATE	AMENDMENT
A	12/03/2020	FIRST ISSUE
B	29/04/2020	SECOND ISSUE
C	30/04/2020	THIRD ISSUE
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BARKER RYAN STEWART
TOTAL PROJECT SOLUTIONS
ENGINEERING | PLANNING | PROJECT MANAGEMENT | SURVEYING | CERTIFICATION
SYDNEY P: 02 9659 0005
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HUNTER P: 02 4966 8388
ABN: 26 134 067 842
www.brs.com.au
mail@brs.com.au

Client: DEICORP

FIVE WAYS TRIANGLE, CROWS NEST

BASEMENT 2 PASSENGER VEHICLE CIRCULATION - B99 / B85

Designed: AAJ
Drawn: AAJ
Checked: AAJ
Scales: Plan / Horiz. / Vert. / X-Sect.
Datum: A.H.D.

Plan No. CC200015TR04
File Ref. CC200015D01E
REV. E
SHEET 4 OF 4 SHEETS

Appendix E

SIDRA Results

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING AM]

Network: N101 [FIVE WAYS Existing AM]

FALCON / ALEXANDER - EXISTING AM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: ALEXANDER STREET														
1	L2	39	5.4	39	5.4	0.487	41.2	LOS C	3.5	26.3	0.94	0.78	0.94	8.8
2	T1	279	9.4	279	9.4	0.487	35.4	LOS C	4.3	32.8	0.93	0.76	0.93	20.3
3	R2	2	0.0	2	0.0	0.487	40.8	LOS C	4.3	32.8	0.92	0.76	0.92	20.0
Approach		320	8.9	320	8.9	0.487	36.1	LOS C	4.3	32.8	0.93	0.77	0.93	19.1
East: FALCON STREET														
4	L2	311	5.8	311	5.8	0.761	16.1	LOS B	11.1	82.7	0.71	0.76	0.78	29.7
5	T1	794	8.6	794	8.6	0.761	13.0	LOS A	11.1	82.7	0.72	0.73	0.79	28.8
Approach		1104	7.8	1104	7.8	0.761	13.9	LOS A	11.1	82.7	0.72	0.74	0.79	29.0
North: ALEXANDER STREET														
7	L2	14	15.4	14	15.4	0.116	37.9	LOS C	0.9	7.0	0.85	0.67	0.85	24.0
8	T1	71	9.0	71	9.0	0.116	32.2	LOS C	1.0	7.3	0.85	0.65	0.85	17.0
Approach		84	10.0	84	10.0	0.116	33.1	LOS C	1.0	7.3	0.85	0.65	0.85	18.5
West: FALCON STREET														
10	L2	81	5.2	81	5.2	0.369	13.4	LOS A	6.4	47.6	0.57	0.55	0.57	36.5
11	T1	824	7.0	824	7.0	0.369	10.4	LOS A	8.6	64.1	0.68	0.63	0.68	37.3
Approach		905	6.9	905	6.9	0.369	10.7	LOS A	8.6	64.1	0.67	0.62	0.67	37.3
All Vehicles		2414	7.7	2414	7.7	0.761	16.3	LOS B	11.1	82.7	0.73	0.69	0.77	29.1

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	40	39.3	LOS D	0.1	0.1	0.93	0.93
P2	East Full Crossing	57	39.3	LOS D	0.1	0.1	0.94	0.94
P3	North Full Crossing	53	39.3	LOS D	0.1	0.1	0.94	0.94
P4	West Full Crossing	52	39.3	LOS D	0.1	0.1	0.94	0.94
All Pedestrians		201	39.3	LOS D			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: FA [FALCON / ALEXANDER - EXISTING PM]

Network: N101 [FIVE WAYS Existing PM]

FALCON / ALEXANDER - EXISTING PM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: ALEXANDER STREET														
1	L2	18	23.5	18	23.5	0.796	61.5	LOS E	5.1	38.6	1.00	0.87	1.13	6.1
2	T1	317	7.3	317	7.3	0.796	55.7	LOS D	5.7	42.4	1.00	0.87	1.12	14.8
3	R2	2	0.0	2	0.0	0.796	61.0	LOS E	5.7	42.4	1.00	0.87	1.12	14.6
Approach		337	8.1	337	8.1	0.796	56.1	LOS D	5.7	42.4	1.00	0.87	1.12	14.4
East: FALCON STREET														
4	L2	353	2.4	353	2.4	0.789	14.6	LOS B	14.0	100.1	0.65	0.71	0.67	31.7
5	T1	975	2.2	975	2.2	0.789	10.8	LOS A	14.0	100.1	0.65	0.68	0.69	31.4
Approach		1327	2.2	1327	2.2	0.789	11.8	LOS A	14.0	100.1	0.65	0.69	0.69	31.4
North: ALEXANDER STREET														
7	L2	16	6.7	16	6.7	0.196	49.7	LOS D	1.2	9.0	0.94	0.71	0.94	20.4
8	T1	73	5.8	73	5.8	0.196	44.0	LOS D	1.2	9.1	0.94	0.70	0.94	13.5
Approach		88	6.0	88	6.0	0.196	45.0	LOS D	1.2	9.1	0.94	0.71	0.94	15.0
West: FALCON STREET														
10	L2	78	1.4	78	1.4	0.270	11.8	LOS A	6.0	42.6	0.56	0.55	0.56	39.1
11	T1	701	2.0	701	2.0	0.270	9.2	LOS A	8.7	62.0	0.71	0.65	0.71	39.0
Approach		779	1.9	779	1.9	0.270	9.4	LOS A	8.7	62.0	0.69	0.64	0.69	39.0
All Vehicles		2532	3.0	2532	3.0	0.796	18.1	LOS B	14.0	100.1	0.72	0.70	0.75	27.3

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	11	44.2	LOS E	0.0	0.0	0.94	0.94
P2	East Full Crossing	13	44.2	LOS E	0.0	0.0	0.94	0.94
P3	North Full Crossing	14	44.2	LOS E	0.0	0.0	0.94	0.94
P4	West Full Crossing	16	44.2	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		53	44.2	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: PA [PACIFIC / ALEXANDER - EXISTING AM]

Network: N101 [FIVE WAYS Existing AM]

PACIFIC / ALEXANDER - EXISTING AM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
2	T1	992	9.6	992	9.6	0.332	2.6	LOS A	3.6	27.2	0.29	0.26	0.29	45.2
3a	R1	300	9.5	300	9.5	0.552	33.2	LOS C	6.9	51.9	0.89	0.81	0.89	12.2
Approach		1292	9.5	1292	9.5	0.552	9.7	LOS A	6.9	51.9	0.43	0.39	0.43	27.2
NorthEast: ALEXANDER STREET														
24a	L1	321	6.9	321	6.9	0.406	27.6	LOS B	7.2	53.5	0.89	0.82	0.89	19.0
26b	R3	60	3.5	60	3.5	0.566	54.6	LOS D	1.7	12.5	1.00	0.77	1.05	6.6
Approach		381	6.4	381	6.4	0.566	31.8	LOS C	7.2	53.5	0.91	0.81	0.92	16.4
North: PACIFIC HIGHWAY														
7b	L3	18	0.0	18	0.0	0.566	11.3	LOS A	3.1	23.9	0.28	0.26	0.28	36.6
8	T1	1324	12.0	1324	12.0	0.566	9.8	LOS A	8.9	68.7	0.44	0.39	0.44	36.3
Approach		1342	11.8	1342	11.8	0.566	9.8	LOS A	8.9	68.7	0.44	0.39	0.44	36.3
All Vehicles		3015	10.2	3015	10.2	0.566	12.5	LOS A	8.9	68.7	0.50	0.44	0.50	28.8

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 ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	39	39.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	18	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		57	39.3	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: PA [PACIFIC / ALEXANDER - EXISTING PM]

Network: N101 [FIVE WAYS Existing PM]

PACIFIC / ALEXANDER - EXISTING PM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
2	T1	1173	6.6	1173	6.6	0.693	7.8	LOS A	9.5	70.3	0.55	0.50	0.55	30.1
3a	R1	309	8.8	309	8.8	0.515	33.6	LOS C	7.5	56.6	0.86	0.80	0.86	12.0
Approach		1482	7.1	1482	7.1	0.693	13.2	LOS A	9.5	70.3	0.61	0.56	0.61	22.6
NorthEast: ALEXANDER STREET														
24a	L1	303	4.2	303	4.2	0.701	47.0	LOS D	6.7	48.5	0.98	0.85	1.05	13.1
26b	R3	122	0.0	122	0.0	0.701	44.5	LOS D	5.7	40.6	0.94	0.83	0.99	7.8
Approach		425	3.0	425	3.0	0.701	46.3	LOS D	6.7	48.5	0.97	0.85	1.03	11.8
North: PACIFIC HIGHWAY														
7b	L3	25	0.0	25	0.0	0.500	11.4	LOS A	1.8	13.3	0.21	0.23	0.21	35.5
8	T1	884	5.5	884	5.5	0.500	8.1	LOS A	4.7	34.2	0.32	0.28	0.32	38.8
Approach		909	5.3	909	5.3	0.500	8.2	LOS A	4.7	34.2	0.31	0.28	0.31	38.7
All Vehicles		2817	5.9	2817	5.9	0.701	16.6	LOS B	9.5	70.3	0.57	0.51	0.58	23.5

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
P6	NorthEast Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	14	44.2	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		66	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: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING AM]

Network: N101 [FIVE WAYS Existing AM]

PACIFIC / FALCON / SHIRLEY - EXISTING AM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
1	L2	187	11.2	187	11.2	0.177	14.2	LOS A	2.2	17.1	0.48	0.70	0.48	32.4
2	T1	712	9.5	712	9.5	0.784	32.7	LOS C	9.1	68.7	0.94	0.85	1.00	22.9
Approach		899	9.8	899	9.8	0.784	28.8	LOS C	9.1	68.7	0.84	0.82	0.89	24.4
East: FALCON STREET														
4	L2	14	38.5	14	38.5	0.869	36.2	LOS C	10.8	80.0	0.97	0.94	1.10	9.6
5	T1	297	4.3	297	4.3	0.869	31.0	LOS C	10.8	80.0	0.97	0.94	1.10	21.5
6	R2	523	10.3	523	10.3	0.869	34.2	LOS C	10.8	80.0	0.95	0.92	1.09	20.0
Approach		834	8.6	834	8.6	0.869	33.1	LOS C	10.8	80.0	0.95	0.92	1.10	20.4
North: PACIFIC HIGHWAY														
7	L2	414	9.7	414	9.7	0.501	17.8	LOS B	6.6	50.2	0.64	0.77	0.64	25.3
8	T1	824	4.6	824	4.6	0.881	46.1	LOS D	12.7	92.7	1.00	1.06	1.29	13.2
Approach		1238	6.3	1238	6.3	0.881	36.7	LOS C	12.7	92.7	0.88	0.96	1.07	15.7
West: SHIRLEY ROAD														
10	L2	46	13.6	46	13.6	0.853	47.4	LOS D	11.6	85.0	1.00	1.03	1.25	21.5
11	T1	492	4.5	492	4.5	0.853	42.1	LOS C	11.6	85.0	1.00	1.03	1.25	14.1
12	R2	201	1.6	201	1.6	0.853	48.4	LOS D	10.7	76.9	1.00	1.03	1.27	13.4
Approach		739	4.3	739	4.3	0.853	44.1	LOS D	11.6	85.0	1.00	1.03	1.26	14.5
All Vehicles		3709	7.3	3709	7.3	0.881	35.4	LOS C	12.7	92.7	0.91	0.93	1.07	18.5

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	124	39.4	LOS D	0.3	0.3	0.94	0.94
P2	East Full Crossing	39	39.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	64	39.3	LOS D	0.2	0.2	0.94	0.94
P4	West Full Crossing	95	39.4	LOS D	0.2	0.2	0.94	0.94
All Pedestrians		322	39.4	LOS D			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.

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING PM]

Network: N101 [FIVE WAYS Existing PM]

PACIFIC / FALCON / SHIRLEY - EXISTING PM
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
1	L2	559	0.6	559	0.6	0.950	46.0	LOS D	17.1	120.0	1.00	0.99	1.26	17.8
2	T1	618	1.0	618	1.0	0.509	25.8	LOS B	7.4	52.3	0.77	0.66	0.77	26.3
Approach		1177	0.8	1177	0.8	0.950	35.4	LOS C	17.1	120.0	0.88	0.82	1.00	21.5
East: FALCON STREET														
4	L2	14	0.0	14	0.0	0.948	66.6	LOS E	11.3	80.0	1.00	1.19	1.41	5.5
5	T1	551	1.1	551	1.1	0.948	61.5	LOS E	11.3	80.0	1.00	1.19	1.41	13.7
6	R2	428	4.4	428	4.4	0.797	43.8	LOS D	11.0	80.0	0.98	0.91	1.08	16.9
Approach		993	2.5	993	2.5	0.948	53.9	LOS D	11.3	80.0	0.99	1.07	1.27	14.8
North: PACIFIC HIGHWAY														
7	L2	325	3.6	325	3.6	0.573	37.0	LOS C	8.2	59.3	0.89	0.83	0.89	15.6
8	T1	817	8.4	817	8.4	0.705	33.2	LOS C	10.9	81.9	0.94	0.82	0.95	16.9
Approach		1142	7.0	1142	7.0	0.705	34.3	LOS C	10.9	81.9	0.93	0.82	0.93	16.5
West: SHIRLEY ROAD														
10	L2	47	2.2	47	2.2	0.832	52.7	LOS D	10.6	75.2	1.00	0.97	1.19	20.2
11	T1	456	1.2	456	1.2	0.832	47.8	LOS D	10.6	75.2	1.00	0.98	1.21	12.9
12	R2	96	0.0	96	0.0	0.832	54.4	LOS D	8.7	61.1	1.00	0.98	1.24	12.5
Approach		599	1.1	599	1.1	0.832	49.2	LOS D	10.6	75.2	1.00	0.98	1.21	13.5
All Vehicles		3911	3.1	3911	3.1	0.950	41.9	LOS C	17.1	120.0	0.94	0.91	1.08	16.9

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 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	166	44.5	LOS E	0.4	0.4	0.95	0.95
P2	East Full Crossing	48	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	78	44.3	LOS E	0.2	0.2	0.94	0.94
P4	West Full Crossing	143	44.4	LOS E	0.4	0.4	0.95	0.95
All Pedestrians		436	44.4	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.

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING AM + DEVT]

Network: N101 [FIVE WAYS Existing AM + DEVELOPMENT]

FALCON / ALEXANDER - EXISTING AM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: ALEXANDER STREET														
1	L2	62	3.4	62	3.4	0.530	30.7	LOS C	3.4	25.1	0.84	0.73	0.84	11.4
2	T1	279	9.4	279	9.4	0.530	21.8	LOS B	3.6	26.9	0.77	0.67	0.77	26.5
3	R2	43	0.0	43	0.0	0.530	25.1	LOS B	3.6	26.9	0.73	0.64	0.73	27.0
Approach		384	7.4	384	7.4	0.530	23.6	LOS B	3.6	26.9	0.78	0.68	0.78	24.5
East: FALCON STREET														
4	L2	357	5.0	357	5.0	0.779	18.4	LOS B	11.3	83.4	0.77	0.82	0.88	26.9
5	T1	794	8.6	794	8.6	0.779	15.6	LOS B	11.3	83.4	0.79	0.81	0.89	26.3
Approach		1151	7.5	1151	7.5	0.779	16.5	LOS B	11.3	83.4	0.78	0.81	0.89	26.5
North: ALEXANDER STREET														
7	L2	14	15.4	14	15.4	0.097	31.6	LOS C	0.8	6.0	0.81	0.65	0.81	26.7
8	T1	71	9.0	71	9.0	0.097	25.9	LOS B	0.8	6.1	0.81	0.62	0.81	19.7
Approach		84	10.0	84	10.0	0.097	26.8	LOS B	0.8	6.1	0.81	0.63	0.81	21.2
West: FALCON STREET														
10	L2	81	5.2	81	5.2	0.402	14.2	LOS A	6.1	45.5	0.61	0.58	0.61	35.5
11	T1	824	7.0	824	7.0	0.402	11.0	LOS A	7.8	58.1	0.71	0.64	0.71	36.6
Approach		905	6.9	905	6.9	0.402	11.3	LOS A	7.8	58.1	0.70	0.64	0.70	36.5
All Vehicles		2524	7.3	2524	7.3	0.779	16.0	LOS B	11.3	83.4	0.75	0.72	0.80	29.2

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 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	40	34.3	LOS D	0.1	0.1	0.93	0.93
P2	East Full Crossing	57	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	52	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		201	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: FA [FALCON / ALEXANDER - EXISTING PM + DEVT]

Network: N101 [FIVE WAYS Existing PM + DEVELOPMENT]

FALCON / ALEXANDER - EXISTING PM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: ALEXANDER STREET														
1	L2	33	12.9	33	12.9	0.816	61.9	LOS E	5.8	43.4	1.00	0.89	1.14	6.0
2	T1	317	7.3	317	7.3	0.816	56.1	LOS D	6.4	47.3	1.00	0.89	1.14	14.6
3	R2	28	0.0	28	0.0	0.816	61.4	LOS E	6.4	47.3	1.00	0.89	1.13	14.4
Approach		378	7.2	378	7.2	0.816	57.0	LOS E	6.4	47.3	1.00	0.89	1.14	14.0
East: FALCON STREET														
4	L2	404	2.1	404	2.1	0.829	19.9	LOS B	18.0	128.3	0.73	0.80	0.79	25.9
5	T1	975	2.2	975	2.2	0.829	16.9	LOS B	18.0	128.3	0.73	0.78	0.82	25.1
Approach		1379	2.1	1379	2.1	0.829	17.8	LOS B	18.0	128.3	0.73	0.79	0.81	25.3
North: ALEXANDER STREET														
7	L2	16	6.7	16	6.7	0.168	47.4	LOS D	1.2	8.7	0.92	0.70	0.92	21.0
8	T1	73	5.8	73	5.8	0.168	41.7	LOS C	1.2	8.8	0.92	0.69	0.92	14.1
Approach		88	6.0	88	6.0	0.168	42.7	LOS D	1.2	8.8	0.92	0.69	0.92	15.6
West: FALCON STREET														
10	L2	78	1.4	78	1.4	0.277	12.5	LOS A	6.2	43.8	0.58	0.56	0.58	38.1
11	T1	701	2.0	701	2.0	0.277	9.9	LOS A	8.6	61.4	0.71	0.65	0.71	38.0
Approach		779	1.9	779	1.9	0.277	10.2	LOS A	8.6	61.4	0.70	0.64	0.70	38.0
All Vehicles		2624	2.9	2624	2.9	0.829	22.0	LOS B	18.0	128.3	0.77	0.75	0.83	24.4

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	11	44.2	LOS E	0.0	0.0	0.94	0.94
P2	East Full Crossing	13	44.2	LOS E	0.0	0.0	0.94	0.94
P3	North Full Crossing	14	44.2	LOS E	0.0	0.0	0.94	0.94
P4	West Full Crossing	16	44.2	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		53	44.2	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: PA [PACIFIC / ALEXANDER - EXISTING AM + DEVT]

Network: N101 [FIVE WAYS Existing AM + DEVELOPMENT]

PACIFIC / ALEXANDER - EXISTING AM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
2	T1	992	9.6	992	9.6	0.342	2.9	LOS A	3.6	27.3	0.33	0.29	0.33	43.8
3a	R1	325	8.7	325	8.7	0.621	31.5	LOS C	6.9	51.8	0.92	0.82	0.92	12.7
Approach		1317	9.4	1317	9.4	0.621	10.0	LOS A	6.9	51.8	0.48	0.42	0.48	26.8
NorthEast: ALEXANDER STREET														
24a	L1	343	6.4	343	6.4	0.429	24.4	LOS B	6.8	49.9	0.88	0.82	0.88	20.5
26b	R3	60	3.5	60	3.5	0.504	48.3	LOS D	1.5	11.0	1.00	0.76	1.01	7.3
Approach		403	6.0	403	6.0	0.504	28.0	LOS B	6.8	49.9	0.89	0.81	0.90	17.9
North: PACIFIC HIGHWAY														
7b	L3	43	0.0	43	0.0	0.607	11.0	LOS A	3.1	23.6	0.30	0.31	0.30	36.2
8	T1	1324	12.0	1324	12.0	0.607	9.7	LOS A	8.1	62.6	0.46	0.42	0.46	36.2
Approach		1367	11.6	1367	11.6	0.607	9.8	LOS A	8.1	62.6	0.46	0.42	0.46	36.2
All Vehicles		3087	9.9	3087	9.9	0.621	12.2	LOS A	8.1	62.6	0.52	0.47	0.52	29.1

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
P6	NorthEast Full Crossing	39	34.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	18	34.3	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		57	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: PA [PACIFIC / ALEXANDER - EXISTING PM + DEVT]

Network: N101 [FIVE WAYS Existing PM + DEVELOPMENT]

PACIFIC / ALEXANDER - EXISTING PM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
2	T1	1173	6.6	1173	6.6	0.711	8.4	LOS A	9.7	71.9	0.57	0.52	0.57	29.0
3a	R1	339	8.1	339	8.1	0.562	34.2	LOS C	8.4	62.7	0.88	0.81	0.88	11.9
Approach		1512	7.0	1512	7.0	0.711	14.2	LOS A	9.7	71.9	0.64	0.58	0.64	21.7
NorthEast: ALEXANDER STREET														
24a	L1	318	4.0	318	4.0	0.683	46.2	LOS D	6.8	49.5	0.98	0.85	1.03	13.2
26b	R3	122	0.0	122	0.0	0.683	44.8	LOS D	5.9	41.8	0.94	0.83	0.98	7.8
Approach		440	2.9	440	2.9	0.683	45.8	LOS D	6.8	49.5	0.97	0.84	1.01	11.9
North: PACIFIC HIGHWAY														
7b	L3	55	0.0	55	0.0	0.536	11.9	LOS A	2.1	15.4	0.24	0.30	0.24	32.8
8	T1	884	5.5	884	5.5	0.536	8.9	LOS A	5.2	38.1	0.35	0.33	0.35	37.2
Approach		939	5.2	939	5.2	0.536	9.1	LOS A	5.2	38.1	0.35	0.33	0.35	37.0
All Vehicles		2891	5.8	2891	5.8	0.711	17.4	LOS B	9.7	71.9	0.59	0.54	0.60	22.8

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 ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	14	44.2	LOS E	0.0	0.0	0.94	0.94
All Pedestrians		66	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: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING AM + DEVT]

Network: N101 [FIVE WAYS Existing AM + DEVELOPMENT]

PACIFIC / FALCON / SHIRLEY - EXISTING AM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 80 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
1	L2	187	11.2	187	11.2	0.185	14.3	LOS A	2.1	16.2	0.50	0.71	0.50	32.3
2	T1	712	9.5	712	9.5	0.807	30.1	LOS C	8.3	62.9	0.95	0.87	1.05	24.1
Approach		899	9.8	899	9.8	0.807	26.8	LOS B	8.3	62.9	0.86	0.84	0.93	25.4
East: FALCON STREET														
4	L2	14	38.5	14	38.5	0.864	34.0	LOS C	10.8	80.0	0.97	0.94	1.12	10.2
5	T1	307	4.1	307	4.1	0.864	28.8	LOS C	10.8	80.0	0.97	0.94	1.12	22.5
6	R2	536	10.0	536	10.0	0.864	31.2	LOS C	10.8	80.0	0.94	0.92	1.09	21.2
Approach		857	8.4	857	8.4	0.864	30.4	LOS C	10.8	80.0	0.95	0.93	1.10	21.5
North: PACIFIC HIGHWAY														
7	L2	414	9.7	414	9.7	0.458	15.7	LOS B	5.6	42.4	0.61	0.76	0.61	27.2
8	T1	839	4.5	839	4.5	0.923	49.3	LOS D	12.8	93.3	1.00	1.15	1.47	12.5
Approach		1253	6.2	1253	6.2	0.923	38.2	LOS C	12.8	93.3	0.87	1.02	1.19	15.2
West: SHIRLEY ROAD														
10	L2	46	13.6	46	13.6	0.881	48.0	LOS D	11.0	80.9	1.00	1.08	1.35	21.3
11	T1	492	4.5	492	4.5	0.881	42.5	LOS C	11.0	80.9	1.00	1.08	1.36	14.0
12	R2	212	1.5	212	1.5	0.881	48.6	LOS D	10.4	74.4	1.00	1.08	1.37	13.4
Approach		749	4.2	749	4.2	0.881	44.5	LOS D	11.0	80.9	1.00	1.08	1.36	14.4
All Vehicles		3758	7.2	3758	7.2	0.923	35.0	LOS C	12.8	93.3	0.91	0.97	1.14	18.7

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 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	124	34.4	LOS D	0.3	0.3	0.93	0.93
P2	East Full Crossing	39	34.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	64	34.3	LOS D	0.1	0.1	0.93	0.93
P4	West Full Crossing	95	34.4	LOS D	0.2	0.2	0.93	0.93
All Pedestrians		322	34.4	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.

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING PM + DEVT]

Network: N101 [FIVE WAYS Existing PM + DEVELOPMENT]

PACIFIC / FALCON / SHIRLEY - EXISTING PM + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
1	L2	559	0.6	559	0.6	0.950	48.5	LOS D	17.1	120.0	1.00	0.99	1.26	17.2
2	T1	618	1.0	618	1.0	0.509	26.9	LOS B	7.6	53.7	0.80	0.69	0.80	25.7
Approach		1177	0.8	1177	0.8	0.950	37.2	LOS C	17.1	120.0	0.90	0.83	1.02	20.8
East: FALCON STREET														
4	L2	14	0.0	14	0.0	0.966	72.8	LOS F	11.3	80.0	1.00	1.25	1.48	5.1
5	T1	561	1.1	561	1.1	0.966	67.7	LOS E	11.3	80.0	1.00	1.25	1.48	12.7
6	R2	437	4.3	437	4.3	0.813	44.9	LOS D	11.0	80.0	0.98	0.92	1.10	16.6
Approach		1012	2.5	1012	2.5	0.966	57.9	LOS E	11.3	80.0	0.99	1.10	1.32	14.1
North: PACIFIC HIGHWAY														
7	L2	325	3.6	325	3.6	0.573	37.0	LOS C	8.2	59.3	0.89	0.83	0.89	15.6
8	T1	834	8.2	834	8.2	0.719	33.7	LOS C	11.3	84.5	0.95	0.84	0.96	16.7
Approach		1159	6.9	1159	6.9	0.719	34.6	LOS C	11.3	84.5	0.93	0.83	0.94	16.4
West: SHIRLEY ROAD														
10	L2	47	2.2	47	2.2	0.841	53.5	LOS D	10.9	77.0	1.00	0.98	1.21	20.0
11	T1	456	1.2	456	1.2	0.841	48.5	LOS D	10.9	77.0	1.00	0.99	1.22	12.7
12	R2	108	0.0	108	0.0	0.841	55.1	LOS D	9.0	63.6	1.00	1.00	1.25	12.3
Approach		612	1.0	612	1.0	0.841	50.1	LOS D	10.9	77.0	1.00	0.99	1.23	13.3
All Vehicles		3959	3.1	3959	3.1	0.966	43.7	LOS D	17.1	120.0	0.95	0.93	1.11	16.4

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	166	44.5	LOS E	0.4	0.4	0.95	0.95
P2	East Full Crossing	48	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	78	44.3	LOS E	0.2	0.2	0.94	0.94
P4	West Full Crossing	143	44.4	LOS E	0.4	0.4	0.95	0.95
All Pedestrians		436	44.4	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.

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING AM + GROWTH]

Network: N101 [FIVE WAYS Existing AM + GROWTH]

FALCON / ALEXANDER - EXISTING AM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: ALEXANDER STREET														
1	L2	41	5.4	41	5.4	0.313	46.1	LOS D[11]	4.5	34.0	0.73	0.65	0.73	7.9
2	T1	293	9.4	293	9.4	0.313	38.6	LOS C	5.3	40.1	0.69	0.60	0.69	19.2
3	R2	2	0.0	2	0.0	0.313	42.9	LOS D[11]	5.3	40.1	0.67	0.57	0.67	19.2
Approach		336	8.9	336	8.9	0.313	39.5	LOS C	5.3	40.1	0.70	0.60	0.70	18.0
East: FALCON STREET														
4	L2	326	5.8	326	5.8	0.954	74.5	LOS F[11]	36.5	271.0	1.00	1.11	1.32	9.2
5	T1	833	8.6	833	8.6	0.954	73.7	LOS F[11]	36.5	271.0	1.00	1.16	1.33	8.9
Approach		1159	7.8	1159	7.8	0.954	73.9	LOS F[11]	36.5	271.0	1.00	1.15	1.33	9.0
North: ALEXANDER STREET														
7	L2	14	15.4	14	15.4	0.082	42.8	LOS D[11]	1.2	9.1	0.72	0.62	0.72	22.2
8	T1	74	9.0	74	9.0	0.082	37.0	LOS C	1.5	11.4	0.72	0.58	0.72	15.4
Approach		88	10.0	88	10.0	0.082	37.9	LOS C	1.5	11.4	0.72	0.58	0.72	16.8
West: FALCON STREET														
10	L2	85	5.2	85	5.2	0.436	22.7	LOS B	10.8	80.0	0.59	0.57	0.59	27.6
11	T1	865	7.0	865	7.0	0.436	21.8	LOS B	10.8	80.0	0.71	0.65	0.71	26.7
Approach		951	6.9	951	6.9	0.436	21.8	LOS B	10.8	80.0	0.70	0.65	0.70	26.8
All Vehicles		2534	7.7	2534	7.7	0.954	48.6	LOS D[11]	36.5	271.0	0.84	0.87	0.99	14.4

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	48	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P2	East Full Crossing	68	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P3	North Full Crossing	63	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P4	West Full Crossing	62	69.3	LOS F[12]	0.3	0.3	0.96	0.96
All Pedestrians		241	69.3	LOS F[12]			0.96	0.96

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

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING PM + GROWTH]

Network: N101 [FIVE WAYS Existing PM + GROWTH]

FALCON / ALEXANDER - EXISTING PM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: ALEXANDER STREET														
1	L2	19	23.5	19	23.5	0.815	77.4	LOS F[11]	6.9	51.9	1.00	0.88	1.12	4.9
2	T1	333	7.3	333	7.3	0.815	71.5	LOS F[11]	7.7	57.1	1.00	0.88	1.11	12.2
3	R2	2	0.0	2	0.0	0.815	76.8	LOS F[11]	7.7	57.1	1.00	0.88	1.10	12.1
Approach		354	8.1	354	8.1	0.815	71.9	LOS F[11]	7.7	57.1	1.00	0.88	1.11	11.9
East: FALCON STREET														
4	L2	370	2.4	370	2.4	0.831	17.5	LOS B	19.5	139.2	0.68	0.74	0.70	28.3
5	T1	1023	2.2	1023	2.2	0.831	14.4	LOS A	19.5	139.2	0.67	0.70	0.72	27.5
Approach		1394	2.2	1394	2.2	0.831	15.2	LOS B	19.5	139.2	0.67	0.71	0.71	27.7
North: ALEXANDER STREET														
7	L2	17	6.7	17	6.7	0.215	62.3	LOS E[11]	1.5	11.4	0.94	0.72	0.94	17.4
8	T1	76	5.8	76	5.8	0.215	56.4	LOS D[11]	1.8	13.1	0.94	0.71	0.94	11.1
Approach		93	6.0	93	6.0	0.215	57.4	LOS E[11]	1.8	13.1	0.94	0.71	0.94	12.4
West: FALCON STREET														
10	L2	82	1.4	82	1.4	0.275	12.6	LOS A	7.8	55.8	0.55	0.54	0.55	38.0
11	T1	736	2.0	736	2.0	0.275	9.9	LOS A	10.9	77.9	0.67	0.62	0.67	37.9
Approach		818	1.9	818	1.9	0.275	10.2	LOS A	10.9	77.9	0.65	0.61	0.65	37.9
All Vehicles		2658	3.0	2658	3.0	0.831	22.7	LOS B	19.5	139.2	0.72	0.70	0.76	24.0

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	13	59.2	LOS E[12]	0.0	0.0	0.95	0.95
P2	East Full Crossing	15	59.2	LOS E[12]	0.1	0.1	0.95	0.95
P3	North Full Crossing	16	59.2	LOS E[12]	0.1	0.1	0.95	0.95
P4	West Full Crossing	19	59.2	LOS E[12]	0.1	0.1	0.95	0.95
All Pedestrians		63	59.2	LOS E[12]			0.95	0.95

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

MOVEMENT SUMMARY

Site: PA [PACIFIC / ALEXANDER - EXISTING AM + GROWTH]

Network: N101 [FIVE WAYS Existing AM + GROWTH]

PACIFIC / ALEXANDER - EXISTING AM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
2	T1	1041	9.6	1041	9.6	0.455	4.4	LOS A	9.0	68.2	0.32	0.30	0.32	38.7
3a	R1	315	9.5	315	9.5	0.693	33.8	LOS C	9.3	70.4	0.72	0.75	0.72	12.0
Approach		1356	9.5	1356	9.5	0.693	11.2	LOS A	9.3	70.4	0.41	0.40	0.41	25.1
NorthEast: ALEXANDER STREET														
24a	L1	337	6.9	337	6.9	0.311	23.3	LOS B	9.0	66.9	0.66	0.75	0.66	21.1
26b	R3	63	3.5	63	3.5	0.743	85.3	LOS F[11]	3.1	22.2	1.00	0.86	1.18	4.4
Approach		400	6.4	400	6.4	0.743	33.1	LOS C	9.0	66.9	0.71	0.77	0.74	15.9
North: PACIFIC HIGHWAY														
7b	L3	19	0.0	19	0.0	0.788	18.0	LOS B	9.7	74.9	0.50	0.46	0.50	24.1
8	T1	1390	12.0	1390	12.0	0.788	24.0	LOS B	15.5	120.0	0.64	0.57	0.64	23.2
Approach		1409	11.8	1409	11.8	0.788	23.9	LOS B	15.5	120.0	0.63	0.57	0.64	23.2
All Vehicles		3165	10.2	3165	10.2	0.788	19.6	LOS B	15.5	120.0	0.55	0.52	0.56	22.3

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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
P6	NorthEast Full Crossing	47	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	21	69.2	LOS F[12]	0.1	0.1	0.96	0.96
All Pedestrians		68	69.2	LOS F[12]			0.96	0.96

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.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: PA [PACIFIC / ALEXANDER - EXISTING PM + GROWTH]

Network: N101 [FIVE WAYS Existing PM + GROWTH]

PACIFIC / ALEXANDER - EXISTING PM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
2	T1	1231	6.6	1231	6.6	0.725	9.2	LOS A	12.0	88.6	0.53	0.49	0.53	27.8
3a	R1	325	8.8	325	8.8	0.859	49.5	LOS D[11]	11.4	86.0	0.78	0.89	1.00	8.7
Approach		1556	7.1	1556	7.1	0.859	17.6	LOS B	12.0	88.6	0.59	0.57	0.63	18.8
NorthEast: ALEXANDER STREET														
24a	L1	318	4.2	318	4.2	0.713	58.1	LOS E[11]	9.0	65.6	0.98	0.85	1.02	11.1
26b	R3	128	0.0	128	0.0	0.713	53.6	LOS D[11]	7.6	53.6	0.94	0.83	0.97	6.6
Approach		447	3.0	447	3.0	0.713	56.8	LOS E[11]	9.0	65.6	0.97	0.85	1.01	10.0
North: PACIFIC HIGHWAY														
7b	L3	27	0.0	27	0.0	0.607	18.0	LOS B	4.6	33.4	0.40	0.38	0.40	23.8
8	T1	928	5.5	928	5.5	0.607	14.7	LOS B	7.3	53.5	0.47	0.41	0.47	30.3
Approach		955	5.3	955	5.3	0.607	14.8	LOS B	7.3	53.5	0.46	0.41	0.46	30.1
All Vehicles		2958	5.9	2958	5.9	0.859	22.6	LOS B	12.0	88.6	0.60	0.56	0.63	19.3

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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
P6	NorthEast Full Crossing	63	59.3	LOS E[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	16	59.2	LOS E[12]	0.1	0.1	0.95	0.95
All Pedestrians		80	59.3	LOS E[12]			0.96	0.96

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.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING AM + GROWTH]

Network: N101 [FIVE WAYS Existing AM + GROWTH]

PACIFIC / FALCON / SHIRLEY - EXISTING AM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
1	L2	197	11.2	197	11.2	0.166	15.1	LOS B	3.2	24.2	0.39	0.68	0.39	31.7
2	T1	747	9.5	747	9.5	0.888	65.1	LOS E[11]	15.9	120.0	1.00	0.99	1.15	14.2
Approach		944	9.8	944	9.8	0.888	54.7	LOS D[11]	15.9	120.0	0.87	0.92	1.00	16.0
East: FALCON STREET														
4	L2	14	38.5	14	38.5	0.986	80.9	LOS F[11]	10.8	80.0	1.00	1.08	1.30	4.4
5	T1	312	4.3	312	4.3	0.986	75.8	LOS F[11]	10.8	80.0	1.00	1.08	1.30	11.4
6	R2	549	10.3	549	10.3	0.986	78.9	LOS F[11]	10.8	80.0	1.00	1.03	1.31	10.9
Approach		875	8.6	875	8.6	0.986	77.8	LOS F[11]	10.8	80.0	1.00	1.05	1.30	11.0
North: PACIFIC HIGHWAY														
7	L2	434	9.7	434	9.7	0.964	95.4	LOS F[11]	27.4	207.4	1.00	1.08	1.41	7.2
8	T1	865	4.6	865	4.6	0.998	109.8	LOS F[11]	26.6	193.3	1.00	1.25	1.48	6.4
Approach		1300	6.3	1300	6.3	0.998	105.0	LOS F[11]	27.4	207.4	1.00	1.19	1.46	6.6
West: SHIRLEY ROAD														
10	L2	49	13.6	49	13.6	0.999	120.3	LOS F[11]	27.6	202.2	1.00	1.31	1.54	10.6
11	T1	516	4.5	516	4.5	0.999	115.3	LOS F[11]	27.6	202.2	1.00	1.28	1.54	6.2
12	R2	211	1.6	211	1.6	0.999	122.3	LOS F[11]	25.6	183.6	1.00	1.23	1.55	6.0
Approach		776	4.3	776	4.3	0.999	117.5	LOS F[11]	27.6	202.2	1.00	1.27	1.54	6.4
All Vehicles		3895	7.3	3895	7.3	0.999	89.2	LOS F[11]	27.6	207.4	0.97	1.11	1.33	9.1

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	149	69.6	LOS F[12]	0.6	0.6	0.97	0.97
P2	East Full Crossing	47	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	77	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P4	West Full Crossing	114	69.4	LOS F[12]	0.5	0.5	0.96	0.96
All Pedestrians		387	69.4	LOS F[12]			0.96	0.96

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING PM + GROWTH]

Network: N101 [FIVE WAYS Existing PM + GROWTH]

PACIFIC / FALCON / SHIRLEY - EXISTING PM + GROWTH
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
1	L2	587	0.6	587	0.6	0.957	58.0	LOS E[11]	17.1	120.0	1.00	0.98	1.21	15.1
2	T1	649	1.0	649	1.0	0.513	33.5	LOS C	10.2	71.8	0.80	0.68	0.80	22.6
Approach		1236	0.8	1236	0.8	0.957	45.1	LOS D[11]	17.1	120.0	0.89	0.82	0.99	18.3
East: FALCON STREET														
4	L2	14	0.0	14	0.0	0.971	85.8	LOS F[11]	11.3	80.0	1.00	1.19	1.38	4.3
5	T1	578	1.1	578	1.1	0.971	80.6	LOS F[11]	11.3	80.0	1.00	1.19	1.38	11.1
6	R2	450	4.4	450	4.4	0.816	54.0	LOS D[11]	11.0	80.0	0.98	0.91	1.06	14.6
Approach		1042	2.5	1042	2.5	0.971	69.2	LOS E[11]	11.3	80.0	0.99	1.07	1.25	12.2
North: PACIFIC HIGHWAY														
7	L2	342	3.6	342	3.6	0.695	47.1	LOS D[11]	11.6	84.0	0.93	0.85	0.93	12.9
8	T1	858	8.4	858	8.4	0.710	41.5	LOS C	14.6	109.6	0.94	0.82	0.94	14.3
Approach		1199	7.0	1199	7.0	0.710	43.1	LOS D[11]	14.6	109.6	0.94	0.83	0.94	13.9
West: SHIRLEY ROAD														
10	L2	50	2.2	50	2.2	0.966	93.6	LOS F[11]	18.7	132.3	1.00	1.19	1.47	13.1
11	T1	479	1.2	479	1.2	0.966	89.9	LOS F[11]	18.7	132.3	1.00	1.19	1.50	7.7
12	R2	101	0.0	101	0.0	0.966	99.1	LOS F[11]	14.3	100.5	1.00	1.20	1.55	7.3
Approach		629	1.1	629	1.1	0.966	91.7	LOS F[11]	18.7	132.3	1.00	1.19	1.51	8.1
All Vehicles		4106	3.1	4106	3.1	0.971	57.8	LOS E[11]	18.7	132.3	0.95	0.95	1.12	13.3

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	200	59.6	LOS E[12]	0.7	0.7	0.96	0.96
P2	East Full Crossing	58	59.3	LOS E[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	93	59.4	LOS E[12]	0.3	0.3	0.96	0.96
P4	West Full Crossing	172	59.6	LOS E[12]	0.6	0.6	0.96	0.96
All Pedestrians		523	59.5	LOS E[12]			0.96	0.96

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING AM + GROWTH + DEVT]

Network: N101 [FIVE WAYS Existing AM + GROWTH + DEVT]

FALCON / ALEXANDER - EXISTING AM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: ALEXANDER STREET														
1	L2	65	3.4	65	3.4	0.433	50.4	LOS D[11]	6.5	48.0	0.85	0.75	0.85	7.2
2	T1	293	9.4	293	9.4	0.433	44.5	LOS D[11]	7.2	53.8	0.80	0.71	0.80	17.1
3	R2	45	0.0	45	0.0	0.433	49.8	LOS D[11]	7.2	53.8	0.77	0.68	0.77	16.9
Approach		403	7.4	403	7.4	0.433	46.0	LOS D[11]	7.2	53.8	0.81	0.71	0.81	15.7
East: FALCON STREET														
4	L2	375	5.0	375	5.0	0.954	71.8	LOS F[11]	37.8	279.6	1.00	1.10	1.31	9.5
5	T1	833	8.6	833	8.6	0.954	71.8	LOS F[11]	37.8	279.6	1.00	1.16	1.32	9.1
Approach		1208	7.5	1208	7.5	0.954	71.8	LOS F[11]	37.8	279.6	1.00	1.14	1.32	9.2
North: ALEXANDER STREET														
7	L2	14	15.4	14	15.4	0.088	45.2	LOS D[11]	1.2	9.3	0.74	0.63	0.74	21.4
8	T1	74	9.0	74	9.0	0.088	39.3	LOS C	1.6	11.8	0.75	0.59	0.75	14.7
Approach		88	10.0	88	10.0	0.088	40.2	LOS C	1.6	11.8	0.75	0.60	0.75	16.1
West: FALCON STREET														
10	L2	85	5.2	85	5.2	0.421	21.3	LOS B	10.8	80.0	0.60	0.58	0.60	28.7
11	T1	865	7.0	865	7.0	0.421	19.9	LOS B	10.8	80.0	0.70	0.65	0.70	28.0
Approach		951	6.9	951	6.9	0.421	20.0	LOS B	10.8	80.0	0.69	0.64	0.69	28.1
All Vehicles		2650	7.3	2650	7.3	0.954	48.3	LOS D[11]	37.8	279.6	0.85	0.88	1.00	14.4

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	48	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P2	East Full Crossing	68	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P3	North Full Crossing	63	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P4	West Full Crossing	62	69.3	LOS F[12]	0.3	0.3	0.96	0.96
All Pedestrians		241	69.3	LOS F[12]			0.96	0.96

MOVEMENT SUMMARY

Site: FA [FALCON / ALEXANDER - EXISTING PM + GROWTH + DEVT]

Network: N101 [FIVE WAYS Existing PM + GROWTH + DEVT]

FALCON / ALEXANDER - EXISTING PM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: ALEXANDER STREET														
1	L2	34	12.9	34	12.9	0.891	87.2	LOS F [11]	8.7	65.3	1.00	0.94	1.20	4.3
2	T1	333	7.3	333	7.3	0.891	81.3	LOS F [11]	9.5	69.8	1.00	0.94	1.19	11.0
3	R2	30	0.0	30	0.0	0.891	86.5	LOS F [11]	9.5	69.8	1.00	0.94	1.18	10.8
Approach		397	7.2	397	7.2	0.891	82.2	LOS F [11]	9.5	69.8	1.00	0.94	1.19	10.4
East: FALCON STREET														
4	L2	424	2.1	424	2.1	0.898	34.2	LOS C	30.0	213.7	0.80	0.89	0.92	17.4
5	T1	1023	2.2	1023	2.2	0.898	31.6	LOS C	30.0	213.7	0.80	0.88	0.94	17.1
Approach		1448	2.1	1448	2.1	0.898	32.4	LOS C	30.0	213.7	0.80	0.88	0.93	17.2
North: ALEXANDER STREET														
7	L2	17	6.7	17	6.7	0.226	65.1	LOS E [11]	1.7	12.3	0.93	0.72	0.93	16.8
8	T1	76	5.8	76	5.8	0.226	59.3	LOS E [11]	1.9	13.7	0.93	0.71	0.93	10.7
Approach		93	6.0	93	6.0	0.226	60.3	LOS E [11]	1.9	13.7	0.93	0.72	0.93	12.0
West: FALCON STREET														
10	L2	82	1.4	82	1.4	0.277	13.2	LOS A	8.4	59.4	0.54	0.54	0.54	37.1
11	T1	736	2.0	736	2.0	0.277	10.6	LOS A	11.2	80.0	0.65	0.60	0.65	37.0
Approach		818	1.9	818	1.9	0.277	10.9	LOS A	11.2	80.0	0.64	0.60	0.64	37.0
All Vehicles		2755	2.9	2755	2.9	0.898	34.1	LOS C	30.0	213.7	0.79	0.80	0.88	18.4

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	13	64.2	LOS F [12]	0.0	0.0	0.96	0.96
P2	East Full Crossing	15	64.2	LOS F [12]	0.1	0.1	0.96	0.96
P3	North Full Crossing	16	64.2	LOS F [12]	0.1	0.1	0.96	0.96
P4	West Full Crossing	19	64.2	LOS F [12]	0.1	0.1	0.96	0.96
All Pedestrians		63	64.2	LOS F [12]			0.96	0.96

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

MOVEMENT SUMMARY

Site: PA [PACIFIC / ALEXANDER - EXISTING AM + GROWTH + DEVT]

Network: N101 [FIVE WAYS Existing AM + GROWTH + DEVT]

PACIFIC / ALEXANDER - EXISTING AM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: PACIFIC HIGHWAY														
2	T1	1041	9.6	1041	9.6	0.452	4.1	LOS A	8.7	65.8	0.31	0.28	0.31	39.7
3a	R1	342	8.7	342	8.7	0.799	39.0	LOS C	11.1	83.6	0.71	0.79	0.79	10.7
Approach		1383	9.4	1383	9.4	0.799	12.7	LOS A	11.1	83.6	0.41	0.41	0.43	23.3
NorthEast: ALEXANDER STREET														
24a	L1	360	6.4	360	6.4	0.328	22.4	LOS B	9.3	69.1	0.64	0.74	0.64	21.7
26b	R3	63	3.5	63	3.5	0.793	88.5	LOS F[11]	3.2	22.7	1.00	0.89	1.25	4.2
Approach		423	6.0	423	6.0	0.793	32.2	LOS C	9.3	69.1	0.69	0.77	0.73	16.3
North: PACIFIC HIGHWAY														
7b	L3	45	0.0	45	0.0	0.821	18.6	LOS B	10.8	82.9	0.54	0.52	0.55	23.0
8	T1	1390	12.0	1390	12.0	0.821	25.3	LOS B	15.5	120.0	0.67	0.62	0.69	22.3
Approach		1436	11.6	1436	11.6	0.821	25.1	LOS B	15.5	120.0	0.67	0.61	0.68	22.3
All Vehicles		3242	9.9	3242	9.9	0.821	20.7	LOS B	15.5	120.0	0.56	0.55	0.58	21.5

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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
P6	NorthEast Full Crossing	47	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	21	69.2	LOS F[12]	0.1	0.1	0.96	0.96
All Pedestrians		68	69.2	LOS F[12]			0.96	0.96

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.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: PA [PACIFIC / ALEXANDER - EXISTING PM + GROWTH + DEVT]

Network: N101 [FIVE WAYS Existing PM + GROWTH + DEVT]

PACIFIC / ALEXANDER - EXISTING PM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
2	T1	1231	6.6	1231	6.6	0.708	8.0	LOS A	11.5	84.7	0.49	0.45	0.49	29.7
3a	R1	356	8.1	356	8.1	0.818	37.8	LOS C	11.4	84.9	0.70	0.82	0.82	10.9
Approach		1587	7.0	1587	7.0	0.818	14.7	LOS B	11.5	84.9	0.53	0.53	0.56	21.2
NorthEast: ALEXANDER STREET														
24a	L1	334	4.0	334	4.0	0.842	70.3	LOS E[11]	10.9	78.9	1.00	0.91	1.14	9.5
26b	R3	128	0.0	128	0.0	0.842	66.1	LOS E[11]	9.2	65.4	1.00	0.89	1.13	5.5
Approach		462	2.9	462	2.9	0.842	69.2	LOS E[11]	10.9	78.9	1.00	0.90	1.14	8.5
North: PACIFIC HIGHWAY														
7b	L3	40	0.0	40	0.0	0.831	41.9	LOS C	11.3	82.5	0.89	0.80	0.93	10.8
8	T1	928	5.5	928	5.5	0.831	37.5	LOS C	12.5	91.3	0.91	0.80	0.94	17.2
Approach		968	5.3	968	5.3	0.831	37.7	LOS C	12.5	91.3	0.91	0.80	0.94	17.0
All Vehicles		3017	5.8	3017	5.8	0.842	30.4	LOS C	12.5	91.3	0.72	0.67	0.77	15.6

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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
P6	NorthEast Full Crossing	63	64.3	LOS F[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	16	64.2	LOS F[12]	0.1	0.1	0.96	0.96
All Pedestrians		80	64.3	LOS F[12]			0.96	0.96

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.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING AM + GROWTH+ DEVT]

Network: N101 [FIVE WAYS Existing AM + GROWTH + DEVT]

PACIFIC / FALCON / SHIRLEY - EXISTING AM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
1	L2	197	11.2	197	11.2	0.166	15.1	LOS B	3.2	24.2	0.39	0.68	0.39	31.7
2	T1	747	9.5	747	9.5	0.863	65.3	LOS E[11]	15.9	120.0	1.00	0.96	1.11	14.2
Approach		944	9.8	944	9.8	0.863	54.8	LOS D[11]	15.9	120.0	0.87	0.90	0.96	16.0
East: FALCON STREET														
4	L2	14	38.5	14	38.5	1.013	97.4	LOS F[11]	10.8	80.0	1.00	1.14	1.38	3.7
5	T1	323	4.1	323	4.1	1.013	92.2	LOS F[11]	10.8	80.0	1.00	1.14	1.38	9.7
6	R2	563	10.0	563	10.0	1.013	94.1	LOS F[11]	10.8	80.0	1.00	1.07	1.39	9.4
Approach		900	8.4	900	8.4	1.013	93.5	LOS F[11]	10.8	80.0	1.00	1.10	1.39	9.4
North: PACIFIC HIGHWAY														
7	L2	434	9.7	434	9.7	0.952	88.4	LOS F[11]	26.4	199.8	1.00	1.06	1.37	7.7
8	T1	881	4.5	881	4.5	1.028	126.7	LOS F[11]	29.6	215.6	1.00	1.34	1.59	5.5
Approach		1315	6.2	1315	6.2	1.028	114.0	LOS F[11]	29.6	215.6	1.00	1.25	1.52	6.1
West: SHIRLEY ROAD														
10	L2	49	13.6	49	13.6	1.031	139.5	LOS F[11]	30.0	219.8	1.00	1.39	1.65	9.3
11	T1	516	4.5	516	4.5	1.031	134.4	LOS F[11]	30.0	219.8	1.00	1.36	1.66	5.3
12	R2	222	1.5	222	1.5	1.031	141.3	LOS F[11]	27.8	199.3	1.00	1.29	1.67	5.2
Approach		787	4.2	787	4.2	1.031	136.7	LOS F[11]	30.0	219.8	1.00	1.35	1.66	5.5
All Vehicles		3946	7.2	3946	7.2	1.031	99.7	LOS F[11]	30.0	219.8	0.97	1.15	1.38	8.2

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	149	69.6	LOS F[12]	0.6	0.6	0.97	0.97
P2	East Full Crossing	47	69.3	LOS F[12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	77	69.3	LOS F[12]	0.3	0.3	0.96	0.96
P4	West Full Crossing	114	69.4	LOS F[12]	0.5	0.5	0.96	0.96
All Pedestrians		387	69.4	LOS F[12]			0.96	0.96

MOVEMENT SUMMARY

Site: PFS [PACIFIC / FALCON / SHIRLEY - EXISTING PM + GROWTH + DEVT]

Network: N101 [FIVE WAYS Existing PM + GROWTH + DEVT]

PACIFIC / FALCON / SHIRLEY - EXISTING PM + GROWTH + DEVT
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: PACIFIC HIGHWAY														
1	L2	587	0.6	587	0.6	0.984	71.5	LOS F [11]	17.1	120.0	1.00	1.01	1.28	12.9
2	T1	649	1.0	649	1.0	0.527	37.0	LOS C	10.7	75.7	0.79	0.68	0.79	21.2
Approach		1236	0.8	1236	0.8	0.984	53.4	LOS D [11]	17.1	120.0	0.89	0.84	1.02	16.3
East: FALCON STREET														
4	L2	14	0.0	14	0.0	0.993	95.6	LOS F [11]	11.3	80.0	1.00	1.19	1.37	3.9
5	T1	589	1.1	589	1.1	0.993	90.4	LOS F [11]	11.3	80.0	1.00	1.19	1.37	10.1
6	R2	459	4.3	459	4.3	0.833	57.6	LOS E [11]	11.0	80.0	0.98	0.90	1.04	13.9
Approach		1062	2.5	1062	2.5	0.993	76.3	LOS F [11]	11.3	80.0	0.99	1.06	1.23	11.3
North: PACIFIC HIGHWAY														
7	L2	342	3.6	342	3.6	0.769	55.0	LOS D [11]	13.5	97.1	0.97	0.89	1.02	11.4
8	T1	874	8.2	874	8.2	0.848	55.6	LOS D [11]	19.0	142.4	1.00	0.98	1.12	11.4
Approach		1216	6.9	1216	6.9	0.848	55.4	LOS D [11]	19.0	142.4	0.99	0.95	1.09	11.4
West: SHIRLEY ROAD														
10	L2	50	2.2	50	2.2	0.977	103.4	LOS F [11]	21.2	149.7	1.00	1.22	1.48	12.1
11	T1	479	1.2	479	1.2	0.977	99.9	LOS F [11]	21.2	149.7	1.00	1.22	1.51	7.0
12	R2	114	0.0	114	0.0	0.977	109.8	LOS F [11]	15.9	112.3	1.00	1.22	1.56	6.7
Approach		642	1.0	642	1.0	0.977	102.0	LOS F [11]	21.2	149.7	1.00	1.22	1.51	7.4
All Vehicles		4156	3.1	4156	3.1	0.993	67.3	LOS E [11]	21.2	149.7	0.96	0.99	1.17	11.8

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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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	200	64.7	LOS F [12]	0.8	0.8	0.97	0.97
P2	East Full Crossing	58	64.3	LOS F [12]	0.2	0.2	0.96	0.96
P3	North Full Crossing	93	64.4	LOS F [12]	0.4	0.4	0.96	0.96
P4	West Full Crossing	172	64.6	LOS F [12]	0.7	0.7	0.96	0.96
All Pedestrians		523	64.5	LOS F [12]			0.96	0.96