25 July 2024

Brendan Metcalfe
Director, State Rezoning
Department of Planning, Housing and Infrastructure
4 Parramatta Square, 12 Darcy Street
Parramatta NSW 2150

Dear Mr Metcalfe,

Response to Submissions – 1-7 Rangers Road & 50 Yeo Street, Neutral Bay

This letter has been prepared by Ethos Urban on behalf of Fabcot, to address the matters raised in submissions prepared by the community, State Agencies and North Sydney Council in relation to the Planning Proposal (PP-2022-4350) at 1-7 Rangers Road & 50 Yeo Street, Neutral Bay.

Between 13 May and 11 June 2024, a Planning Proposal (PP-2022-4350) for 1-7 Rangers Road and 50 Yeo Street, Neutral Bay was placed on public exhibition. The Proponent (Fabcot Pty Ltd) has previously provided responses (28 June 2024) to the community submissions raised. For completeness, these responses are attached. This letter should be read in conjunction with the below documents:

- Community and Agency submission response spreadsheet prepared by Ethos Urban (**Attachment A**);
- JMT RtS letter & detailed amended traffic analysis report prepared by JMT (**Attachment B**);
- Request letter to remove the provision of public car parking dated 18 June 2024 and prepared by Woolworths Group (**Attachment C**); and
- Affordable housing response letter prepared by Woolworths Group (**Attachment D**).

Part A – Community Submissions

Detailed submissions have been made in the attached excel spreadsheet (refer to **Attachment A**).

Part B – Agency Submissions

Table 1 Response to Agency Submissions

Agency	Date of Submission	Summary of Submission	Proponent's Response
NSW Health	23/05/2024	NSW Health advised that a decision not required due to distance from Northern Sydney Local Health District's Properties.	Noted.
Sydney Water	24/05/2024	Sydney Water noted that water servicing should be available for the proposed development.	Noted. These matters will be further confirmed and resolved as part of the detailed DA.
NSW Department of Education	11/06/2024	NSW Department of Education noted that while this Proposal does not meet the referral criteria, DPHI and Council are requested to monitor and consider any cumulative impact on population growth and schools in the locality.	Noted.
AUSGRID	20/06/2024	Ausgrid advised that it has no comment to make regarding this planning proposal (Re zoning) at this point in time.	Noted.
TfNSW	26/06/24	TfNSW identified a number of matters that it required responses on, including Active Transport, Public Transport, Parking, Vehicle Access, and Transport and Traffic Modelling	A response to these matters has been prepared by JMT and is provided at **Attachment B**.

Part C Response to North Sydney Council

This part of the letter provides a response to the specific items raised by North Sydney Council. As the Department of Planning, Housing and Infrastructure (DPHI) will be aware, North Sydney Council have raised various concerns throughout the Planning Proposal process and multiple refinements have been made to the proposal to satisfy Council's previous issues.

The Proposal has been found to have both strategic and site-specific merit by the Sydney North Planning Panel (11 September 2023) and has been given Gateway Determination. North Sydney Council's most recent submission to the Planning Proposal is seeking to re-prosecute issues that have been previously resolved in the planning process, potentially undermining the feasibility of the project and the delivery of its benefits. **Table 2** provides detailed responses to the specific issues raised in Council's submission highlighting inconsistencies with the Council's recently endorsed Neutral Bay Village Planning Study (NBVPS) and associated proposed draft amendments to the NSDCP.

The proposal will deliver a high-quality mixed-use development with significant public benefits through the new public plaza and proposed pedestrian through Site link, making it primarily consistent with the intended outcomes identified for the Site under NBVPS. As DPHI will be aware, significant changes have been made to the proposal to date to accommodate requests by Council and the Sydney North Planning Panel. The proposal cannot support any further changes as it will undermine the project's feasibility and delivery.

Work completed on project feasibility

North Sydney Council engaged Hill PDA to complete a Financial Feasibility Assessment to help inform and support preparation of the NBVPS. Section 7.5 of Hill PDA's Economic analysis and Financial Feasibility Assessment report provides a feasibility summary of the development potential for the site when considering the opportunity for a future outcome comprising greater heights and floorspace, a mix of residential and non-residential uses and public offerings delivered on the site. The report concludes the following in relation to the site:

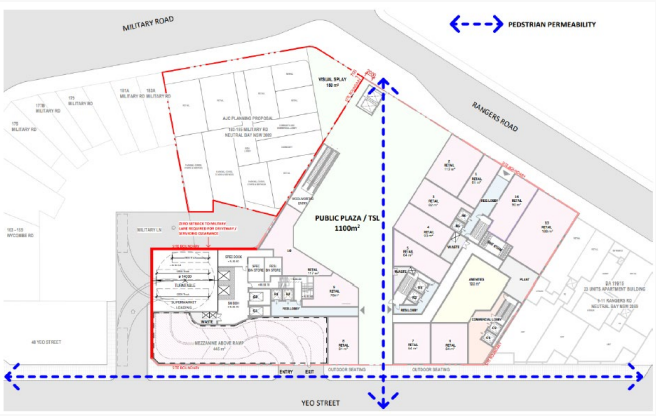
'At 6 storeys and 1.2:1 Non-residential FSR the redevelopment of the site would not be viable given the costs for acquisition with insufficient density. The modelling shows however that at 8 storeys and 1.5:1 FSR even with the benefits of a Plaza (majority) and Through site links the option would be viable.'

These findings demonstrate that the 6-storey development desired under the NBVPS is not feasible to be delivered on the site. Notwithstanding the understated land value, any future development for the site would only be considered feasible at a minimum of 8-storeys across the site.

This is a key matter to take into account when considering the Council's ongoing pursuit of further changes to the proposal, which will further erode the feasibility of any future development proposal. The responses to the Council's submission as set out in the table below should therefore be considered in this context.

Table 2 North Sydney Council submission points addressed

Matter Raised	Proponent Response
1. Building height map to reflect the updated reference design	The proposed reference design provides a proof of concept of the Planning Proposal amendments which have been modelled and rigorously tested to ensure appropriate amenity impacts. Specifically, the reference design (which is reflective of the maximum building heights of 31m and 26m) has demonstrated that appropriate levels of solar access and acceptable levels of overshadowing can be achieved for residential properties located along the southern side of Yeo Street. Further the Proponent is committed to delivering the public plaza and such requirement is enforced within the Site-specific DCP that was exhibited with the Planning Proposal. Accordingly, the Council's suggestion of a 0m maximum building height is considered both unnecessary and overly restrictive. Importantly, the Concept DA sets the maximum building envelope parameters which dedicates area for the purposes of a public plaza, thus reinforcing the outcome that has been pursued in through the Planning Proposal process and securing the future delivery of the plaza in the future detailed DA. It is therefore requested that Council's recommendation is not imposed as a gateway condition or future requirement on the Planning Proposal and does not form part of any final LEP amendment.
2. Escalators and lifts to be relocated to improve safety and amenity of the public space	Council's concern that the proposed lift will result in a lack of visual connection from Rangers Road through to Yeo Street has previously been raised and significantly assessed and reviewed through the Planning Proposal process. As previously outlined to the Panel, the proposed escalators and lifts will enable direct sightlines and clear visual connection across the Site as shown in **Figure 1** below. Therefore, the proposal will ensure safe and permeable pedestrian wayfinding. Further the proposed escalators and lifts are also essential in providing access and ensuring successful operations of the subterranean supermarket.

Matter Raised	Proponent Response
	   *Figure 1 Clear visual connection achieved between Yeo Street and Rangers Road* Source: Koichi Takada Architects Notably, Council's own draft NBVPS identifies a children's playground in the middle of public plaza which is considered likely to result in an even greater adverse wayfinding impacts and negatively impact the usability of the space. We therefore disagree wholeheartedly with the Council's assertion that a single public lift in the proposed location will have a major negative impact on the plaza area. Overall, the provision and location of the proposed escalators and lifts will draw people into and through the Site and will increase foot traffic and vibrancy of the plaza. It therefore it is requested that Council's recommendation is not imposed on the Planning Proposal or future LEP Amendment.
3. Increase the ground level setback at Rangers Road from 0m to 1.5m	The proposed reference scheme seeks a nil setback to Rangers Road which is consistent with the existing building alignment. The setback as proposed will maximise employment floorspace and the proposal's contribution to creating an activated ground plane in the Neutral Bay town centre. Significant opportunities for alfresco outdoor dining will be provided within the internal public domain, specifically around the public plaza, which is considered to be a more appropriate location for dining, as opposed to along Rangers Road. This will encourage greater activity off the public domain, thus not requiring an expanded footpath along Rangers Road.
4. (a) 88 public parking spaces to be removed and	On 18 June 2024, the Proponent issued a letter (**Attachment C**) advising DPHI of no longer pursuing the 88 public car parking spaces under the Planning Proposal. Therefore, such recommendation has been satisfied.

Matter Raised	Proponent Response
(b) affordable housing considered a public benefit instead	The provision of affordable housing has been previously raised and addressed as part of addressing the gateway conditions imposed prior to proceeding to public exhibition. The detailed response outlining why provision of affordable housing cannot be achieved as part of the Planning Proposal is provided in **Attachment D**.

Separate to the Council's submission on the Planning Proposal, we wish to highlight that Council has also moved to prepare their own site-specific DCP as part of their work on the recently endorsed Draft NBVPS (refer to 27 May 2024 NSC Meeting Agenda).

This DCP as currently written will further undermine the proposal's feasibility and delivery and seeks to impose further changes and restrictions on the site, despite the current proposal being informed by Council's own design material.

Specifically, we note that the Council's proposed draft Site-specific controls seek to introduce various amendments that aim to preclude and challenge the Gateway Determined scheme to be granted approval at the future detailed DA stage, this includes:

- Requirement for a 1,000sqm plaza, excluding the area within the laneway;
- Podium must be 3 storeys to Yeo Street and the north-south alignment of Military Lane (Draft DCP);
- Open-to-sky through site link (Draft DCP);
- Reduction of non-residential FSR to 1.5:1 (Draft NBVPS);
- Reduction in podium height fronting Plaza/Military Lane to 2 storeys (Draft NBVPS);
- Pedestrian activation of Military Lane & establishment of connection with Rangers Road Plaza (Draft NBVPS); and
- Reduction in on-site car parking rates (Draft NBVPS).

The Council's intent is clear in the Officer Report issued to Council for its meeting on 27 May 2024, that acknowledges that a site-specific DCP had been prepared by the Proponent to accompany the Planning Proposal, which has been found to have both strategic and site-specific merit:

> As previously indicated, there are two Planning Proposals that are significantly advanced in relation to sites 3A and 3B. As both Planning Proposals have been subject to Rezoning Reviews, Council will not be in control of the public exhibition of these documents. Despite both Planning Proposals being accompanied by a site specific DCP, or a commitment to prepare a site-specific DCP prior to the exhibition of the associated Planning Proposal, neither will have been formally endorsed as a "draft DCP", capable of being publicly exhibited. This would require such draft amendments to be endorsed by Council and exhibited separately to the progression of these Planning Proposals, which reduces clarity and transparency.
>
> **Action:**
>
> To ensure that development on these sites is appropriately guided with regard to the desired outcomes of the Planning Study and the Planning Proposals, it is recommended that Council also endorse the attached draft DCP amendment for the purposes of public exhibition. This will also enable the draft DCP amendments to be publicly exhibited as close as possible to any exhibition of the site-specific Planning Proposals (sites and 3A & 3B).

Source: pg.29 of Council Officer Report – Meeting Item 10.5 - 27 May 2024

Despite this, according to the Council officers, it would 'reduce clarity and transparency' to have the same DCP that has accompanied the Planning Proposal for the entire process to date, exhibited alongside the Planning Proposal.

In response, we fail to see how the Council's approach results in greater clarity and transparency for the community or the Proponent, particularly given the site-specific DCP that accompanied the Planning Proposal informed the Sydney North Planning Panel's determination that the proposal had site-specific merit.

Council, is seeking to impose its will on the Proponent irrespective of the decisions made to date and changes agreed through the formal planning process.

We trust that this letter has provided a response to each item raised by Council in their submission and outlines why such recommendations should not be imposed. We consider that the Planning Proposal in its current form demonstrates both strategic and Site-specific merit and adequately addresses Council's concerns and can proceed to gazettal.

We would ask that the Department assist in resolving this issue and support the proposal's progression given the Council's actions to date and intent to undermine housing supply and community amenity.

Summary

This letter outlines the Proponent's response community and agency submissions raised in relation to the Planning Proposal for 1-7 Rangers Road and 50 Yeo Street, Neutral Bay. It should be read in conjunction with the attached documentation, and collectively provides the responses required to enable DPHI continue with its assessment of the Planning Proposal. We trust that this letter has appropriately addressed each matter raised and further solidifies the merits of the site and proposal as it stands.

Should you require anything further from us please feel free to contact me using the details provided below.

Kind regards,

Benjamin Craig
Director
bcraig@ethosurban.com

Agency	Date of Submission	Position	Summary of Submission	Proponent's Response
NSW Health	23/05/2024	Decision not required	Decision not required due to distance from Northern Sydney Local Health District's Properties	
Sydney Water	24/05/2024	Support	Water servicing should be available for the proposed development Amplifications, adjustments, deviations and/or minor extensions may be required Detailed requirements will be provided at the S73 application stage. If the proposed development is anticipated to generate trade wastewater, the developer must submit an application to discharge into Sydney Water's system. Permit must be approved and issued before any business activities can commence. Council is advised to forward the *Sydney Water Planning Proposal Information Sheet* (for proponent) to assist in progressing development.	Noted. These matters will be further confirmed and resolved as part of the detailed DA.
NSW Department of Educati	11/06/2024	Decision not required	The Local Environmental Plan (LEP) Making Guideline 2021 (prepared by DPHI) outlines the referral criteria for Planning Proposals to be sent to DoE. While this Proposal does not meet the criteria, DPHI and Council are requested to monitor and consider any cumulative impact on population growth and schools in the locality.	Noted.

AUSGRID	20/06/2024	Decision not required	Ausgrid requires that due consideration be given to the compatibility of proposed development with existing Ausgrid infrastructure. Ausgrid has no comment to make regarding this planning proposal (Re zoning) at this point in time. Ausgrid however does look forward to reviewing future Development Application submissions for any development attached to this proposal and will then provide further feedback accordingly.	Noted.

JMT Consulting
PO Box 199
Kingsford NSW 2032
www.jmtconsulting.com.au

Department of Planning, Housing and Infrastructure

11 July 2024

Dear Sir/Madam

Planning Proposal - 1-7 Rangers Road and 50 Yeo Street, Neutral Bay | TfNSW Response

JMT Consulting has prepared this document in response to feedback received from Transport for NSW (TfNSW) dated 26 June 2024 in relation to the Planning Proposal for the site at 1-7 Rangers Road and 50 Yeo Street, Neutral Bay. This document considers the items raised in the TfNSW letter and provides a series of responses to the items raised. This letter has been informed through a phone discussion with the relevant TfNSW representative (Stephen Briant) held on the afternoon of Friday 28 June 2024.

In relation to Items 1 through 4 of the TfNSW letter it is noted that these are more detailed matters are to be addressed as part of a future Development Application (DA) for the site. This was confirmed during the phone discussion held with TfNSW in June 2024. In response to some of the matters raised by TfNSW in Items 1 through 4:

- Bicycle parking and end of trip facilities are to be detailed as part of a subsequent DA for the site;
- A Green Travel Plan will be prepared as part of a subsequent DA for the site;
- The part time bus stop on Rangers Road fronting the site will not be impacted by the proposal and will be retained;
- Buses will be able to continue to safely operate along Yeo St and Rangers Road to access the Bus Zone in Rangers Road;
- Parking controls for the site are proposed to be consistent with rates noted in the current North Sydney DCP, with the final number of spaces to be confirmed as part of a subsequent DA for the site;
- No vehicular access / egress to or from the site is proposed to be provided from Military Road or Rangers Road;
- Swept path analysis will be undertaken as part of a subsequent DA for the site;
- A construction traffic management plan (CTMP) will be prepared prior to the commencement of works on the

In relation to Item 5 of the TfNSW letter (Transport and Traffic Modelling), in response to feedback from TfNSW, updated traffic modelling has been undertaken and is presented in the revised transport impact assessment (TIA) document which is attached to this letter. This traffic modelling has been updated following feedback received from TfNSW in June 2024, with responses to the modelling comments provided as Appendix A of the updated TIA.

It should be noted that the removal of the 88 public car parking spaces has significantly reduced the extent of traffic generation arising from the proposal, with this summarised in Figure 1 on the following page.

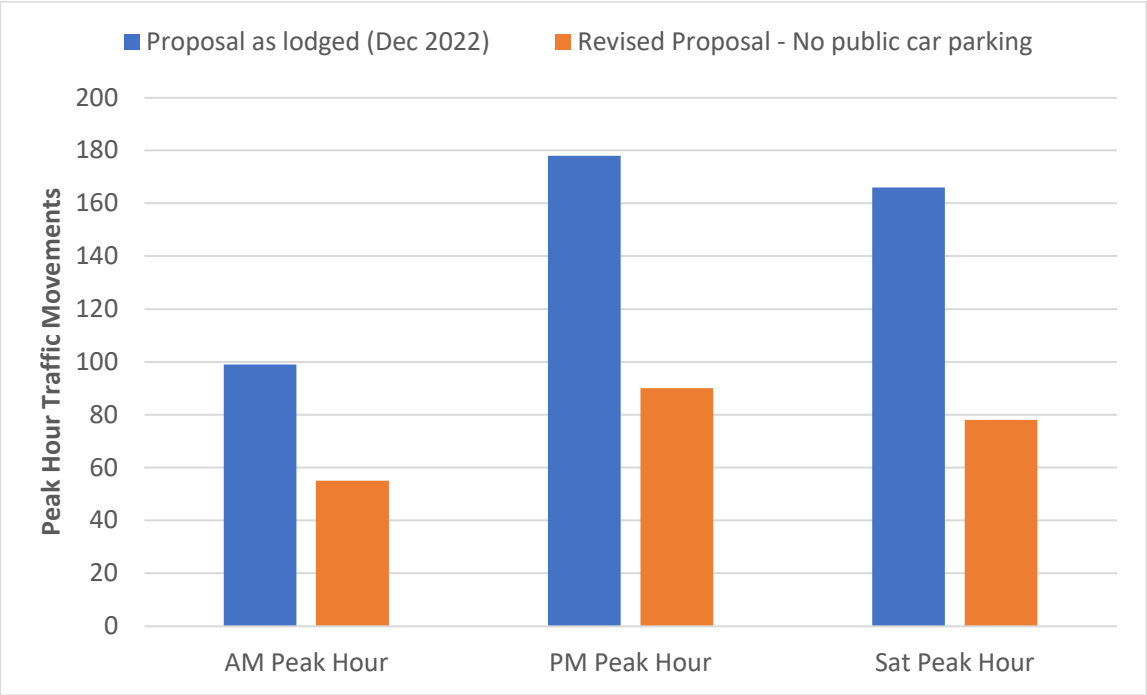


Figure 1 Traffic movement comparison

The modelling demonstrates minimal changes in the operation of surrounding intersections with the development of the site as envisaged under the Planning Proposal. Importantly intersections along Military Road are forecast to experience no material change in operational performance – with existing levels of service retained in all peak hours assessed. Traffic modelling outputs are summarised in Section 4.3 of the updated TIA and reproduced on the following pages of this leter, with detailed traffic modelling outputs provided in Appendix B of the updated TIA. The modelling undertaken therefore indicates that the proposal is not anticipated to result in unacceptable traffic impacts on the surrounding road network.

Table 1 Road network performance – AM Peak Hour (8am – 9am)

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.96	32	C	0.96	32	C
Military Road / Rangers Road	0.65	1	A	0.65	1	A
Wycombe Road / Yeo Street	0.48	29	C	0.45	34	C
Rangers Road / Yeo Street	0.34	7	A	0.35	7	A

Table 2 Road network performance – PM Peak Hour (8am – 9am)

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.94	47	D	0.94	47	D
Military Road / Rangers Road	0.46	1	A	0.46	1	A
Wycombe Road / Yeo Street	0.45	18	B	0.43	33	C
Rangers Road / Yeo Street	0.34	6	A	0.34	6	A

Table 3 Road network performance – Saturday peak hour

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.77	B	16	0.77	B	16
Military Road / Rangers Road	0.40	1	A	0.40	1	A
Wycombe Road / Yeo Street	0.45	18	B	0.40	29	C
Rangers Road / Yeo Street	0.38	6	A	0.40	6	A

Please do not hesitate to contact the undersigned should you have any questions in relation to this advice.

Regards

Josh Milston

Director | JMT Consulting

MIEAust CPEng

1-7 Rangers Road & 50 Yeo Street, Neutral Bay

Transport Assessment

Prepared for:

Fabcot Pty Ltd

11 July 2024

PROJECT INFORMATION

Project Name:	1-7 Rangers Road & 50 Yeo Street, Neutral Bay
Client:	Fabcot Pty Ltd
Project Number:	2190
Prepared By:	JMT Consulting

DOCUMENT HISTORY

Document Title	Revision	Date issued	Author
1-7 Rangers Road & 50 Yeo Street transport assessment	Issue	16.12.22	JM
1-7 Rangers Road & 50 Yeo Street transport assessment	Rev A – post TfNSW feedback	11.07.24	JM

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Figures

Tables

1 Introduction

1.1 Background

JMT Consulting was engaged by Fabcot Pty Ltd to undertake a transport assessment to support a Planning Proposal for the site at 1-7 Rangers Road and 50 Yeo Street, Neutral Bay. The Planning Proposal consists of the following:

- Woolworths supermarket with supporting ground floor retail
- Commercial floor space
- Residential apartments
- Basement car parking for all uses including public parking, resident parking and Woolworths Direct to Boot offering

1.2 Site location

The extent of the site is shown in Figure 1 below. Located within the North Sydney LGA, the site is zoned B4 (mixed use) and has a site area of approximately 5,200m^2. It is adjacent to the key Military Road transport corridor and bounded by Rangers Road, Yeo Street and Military Lane.

Figure 1 Site location

1.3 Report purpose

This report has been prepared to summarise the traffic and transport implications of the Planning Proposal. Specifically the assessment considers the following items:

- Existing transport conditions, including:
    - Surrounding road network
    - Vehicle site access
    - Car parking
    - Loading and servicing arrangements
    - Public transport provision
    - Pedestrian and cycling network
- Proposed site access arrangements
- Proposed vehicle loading and servicing arrangements
- Proposed parking rates to be adopted as part of a future development application for the site, including indicative parking numbers based on the reference scheme prepared by Koichi Takada Architects (KTA)
- Additional traffic movements resulting from the Planning Proposal and impacts to the adjacent road network
- Public transport, walking and cycling measures

2 Existing Transport Conditions

2.1 Road network

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State, Regional,* and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Regional Roads perform an intermediate function between the main arterial network of State Roads and council controlled Local Roads. Due to their network significance TfNSW provides financial assistance to councils for the management of their Regional Roads. Key State and Regional roads which provide access to the site are illustrated in Figure 2 below, which demonstrates the site is very well connected to the surrounding road network.

The site is primarily serviced by Military Road which is a classified as a State Road. Regional Roads in the vicinity of the site include Spofforth Street, Belgrave Street, Ernest Street and Rangers Road to the south-east of the site. The site is also serviced by local roads managed by Council including direct frontage to Yeo Street.

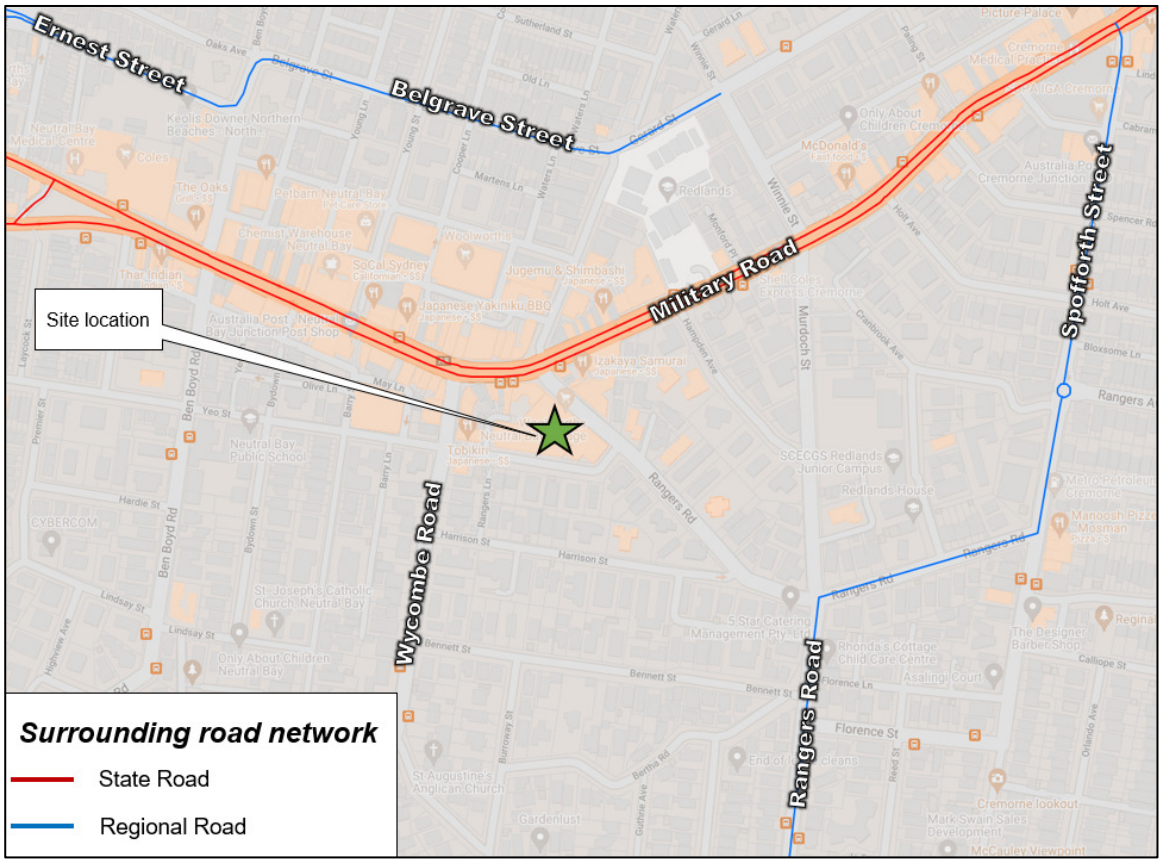


Figure 2 Existing road network

2.2 Existing site uses and site access

The existing site comprises of a Woolworths supermarket containing approximately 3,300m^2 GFA and 100 on-site car parking spaces. Access to the car park is provided via a driveway from Yeo Street as shown in Figure 3 below. Site access to the on-site loading is provided via Military Lane.

Figure 3 Existing site view from Yeo Street

Source: Google Street View

Figure 4 Existing vehicle site access

2.3 Public transport services

The site is located adjacent to the Military Road corridor which is one of Sydney's busiest and most important bus corridors - served by an established bus network that caters for a wide range of trips. The current bus network contains a variety of all-stops, limited stops and express services, joining and leaving the corridor at several locations. A number of bus stops are located directly opposite the site on Military Road as well as Wycombe Road as illustrated in Figure 5.

Figure 5 Existing bus stops servicing the site

A full list of the extensive bus network servicing the Military Road corridor is provided in Table 1.

Table 1 Military Road bus services

Route No.	Route (To / From)	Typical Frequency
143	Manly to Chatswood	Weekdays: 15-30 minutes peak only Weekends: No services
144	Manly to Chatswood	Weekdays: 10-15 minutes peak / 15 minutes off peak Weekends: 15 minutes
151	Mona Vale to City Queen Victoria Building (QVB)	Weekdays: Late night – early morning service Weekends: Late night – early morning service

Route No.	Route (To / From)	Typical Frequency
168	North Balgowlah to Milsons Point	Weekdays: 40-60 minutes Weekends: No services
169	Manly to City Wynyard	Weekdays: 30 minutes peak / 1 hour off peak Weekends: 60 minutes
173	Narraweena to Milsons Point	Weekdays:4 AM peak services only Weekends: No services
178	Comer Heights to City Wynyard	Weekdays: No peak service / 30 minutes off peak Weekends: 15-30 minutes
180	Collaroy Plateau to City Wynyard	Weekdays: No peak service / 30 minutes off peak Weekends: 30 minutes
188	Mona Vale to City Wynyard	Weekdays: 3 morning services only Weekends: 2 morning services only
225	Cremorne Point Wharf to Neutral Bay	Weekdays: 13-15 minutes peak /30 minutes off peak Weekends: 30 minutes
228	Clifton Gardens to Milsons Point	Weekdays: 35-40 minutes peak / 1 hour off peak Weekends: No services
229	Beauty Point to Milsons Point	Weekdays: 1 hour all day Weekends: No services
230	Mosman Wharf to Milsons Point	Weekdays: 15-20 minutes peak /30 minutes off peak Weekends: 30 minutes
243	Spit Junction to City Wynyard	Weekdays: 20 minutes peak / 1 hour off peak Weekends: 30 minutes
244	Chowder Bay Mosman to City Wynyard	Weekdays: 20 minutes peak / 30 minutes off peak Weekends: 1 hour
245	Balmoral to City Wynyard	Weekdays: 15 minutes peak / 1 hour off peak Weekends: 1 hour
246	Balmoral Heights to City Wynyard	Weekdays: 2-10 minutes peak only Weekends: No services
247	Taronga Zoo to City Wynyard	Weekdays: 30 minutes Weekends: 30 minutes
248	Seaforth to City Wynyard	Weekdays: 20 minutes morning peak only Weekends No services

Route No.	Route (To / From)	Typical Frequency
249	Beauty Point to City Wynyard	Weekdays: 3 morning peak services only Weekends: No services
257	Chatswood to Balmoral	Weekdays: 15-30 minutes peak / 15-30 minutes off peak Weekends: 30 minutes Saturdays & 30 minutes Sundays
263	Crows Nest to City Bridge St	Weekdays: 10-15 minutes peak / 40 minutes off peak Weekends: 1 hour 10 minutes
B1	Mona Vale to City Wynyard	Weekdays: 2-7minutes peak / 8-12 minutes off peak Weekends: 8-15 minutes
E54	Mona Vale to Milsons Point	Weekdays: 5-10 minutes peak / 30 minutes off peak Weekends: No services
E50	Manly to Milsons Point (Express)	Weekdays: 10 minutes morning peak only Weekends: No services
E65	South Curl Curl to City Wynyard	Weekdays: 5 minutes morning peak only Weekends: No services
E66	Allambie to City Wynyard	Weekdays: 13 minutes morning peak only Weekends: No services
E68	Brookvale to City Wynyard	Weekdays: 15 minutes morning peak only Weekends: No services
E69	Manly to City Wynyard	Weekdays: 6 minutes morning peak only Weekends: No services
E71	Manly to City Wynyard (Express)	Weekdays: minutes peak only Weekends: No services

2.4 Public transport accessibility

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 6 a number of key employment centres across Sydney can be reached within 30 minutes public transport travel time of the site, including Central / Redfern, Sydney CBD, North Sydney CBD, St Leonards, Chatswood and Manly. The highly accessible nature of the site will facilitate the use of public transport, particularly the Military Road bus corridor.

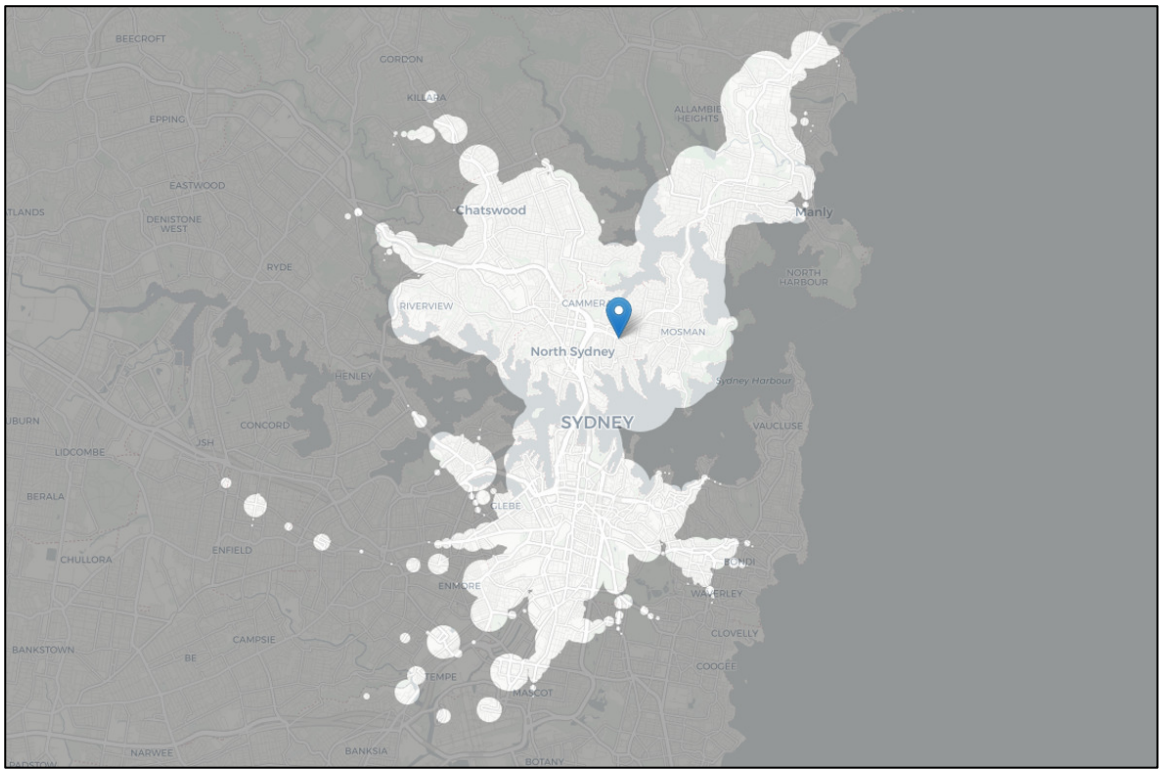


Figure 6 30 minute public transport catchment from site

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

2.5 Walking and cycling

Good quality footpaths are provided along all streets in the vicinity of the site. This includes signalised pedestrian crossings on all legs of the signalised intersections at Military Road / Wycombe Road and Wycombe Road / Yeo Street. A zebra crossing is also provided adjacent to the site across Yeo Street near the intersection with Rangers Road.

There is a developing cycleway network in the vicinity of the site as illustrated in Figure 7 below. The site is located on the 'Route 5' cycleway as identified in the North Sydney Integrated Cycling Strategy, which will ultimately provide a connection between the North Sydney CBD and Mosman via Neutral Bay.

Figure 7 North Sydney cycling network

Source: North Sydney Council

2.6 Traffic flows

Traffic counts were undertaken on Thursday 11 November 2021 and Saturday 13 November 2021 to understand the existing level of traffic movements on the road network surrounding the site. The survey locations are summarised below and shown in Figure 8.

- Rangers Road / Yeo Street
- Yeo Street / Woolworths car park entry
- Wycombe Road / Yeo Street
- Wycombe Road / Military Road
- Rangers Road / Military Road

Figure 8 Traffic survey locations

The traffic surveys have been used as the basis for the traffic modelling carried out to understand the implications of the Planning Proposal on the surrounding road network.

2.7 Historical traffic growth

The Annual Average Daily traffic (AADT) data from the nearest Transport for NSW counting station 22001, which operates on Military Road west of the site, was extracted from TfNSW's traffic volume viewer to understand the pattern of traffic changes along the Military Road corridor within the study area. As can be seen in Figure 9, traffic flows during the commuter peak hours on Miltiary Road have remained largely static over the 10 year period since 2009. There was a significant reduction in 2020 and 2021 however this would primarily be due to the COVID-19 pandemic. It could be expected however that, with the increasing popularity of working from home, traffic flows on Military Road would not reach their pre-pandemic levels for some time. Importantly the data analysis indicates that traffic flows during peak hours on Military Road have not increased and therefore no future traffic growth rate has been assumed as part of the traffic modelling undertaken for this study.

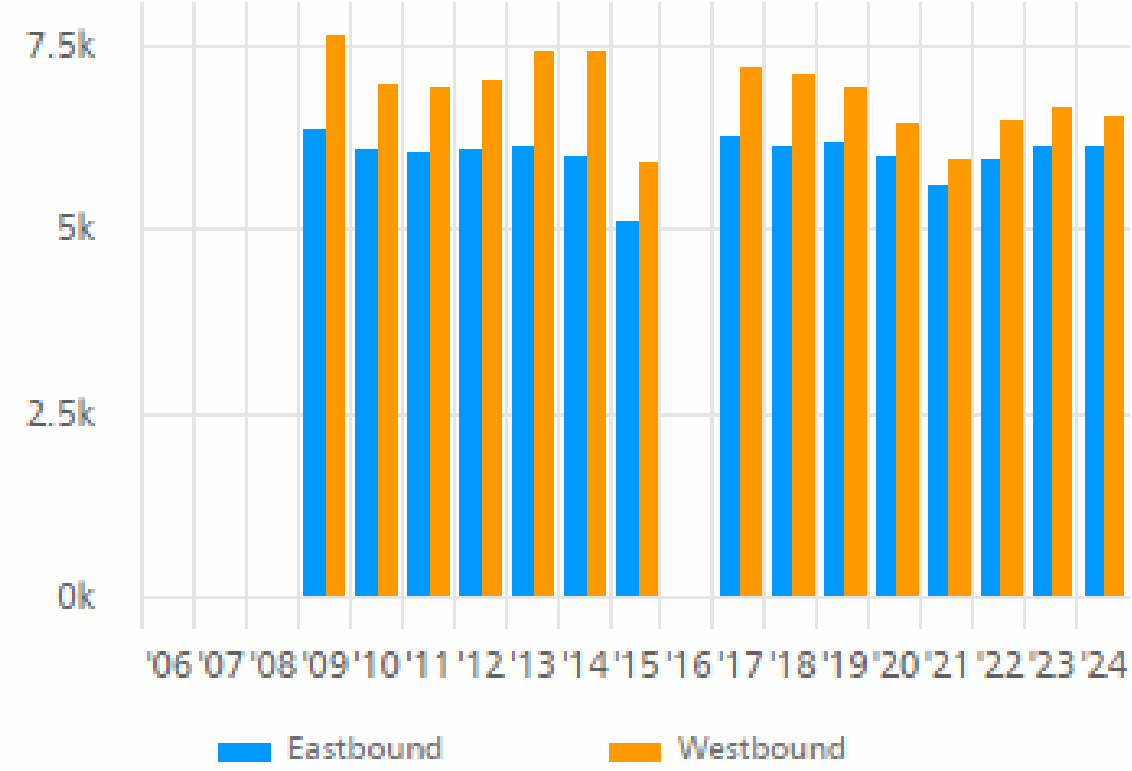


Figure 9 Historical traffic flows – Military Road (AM peak hour)

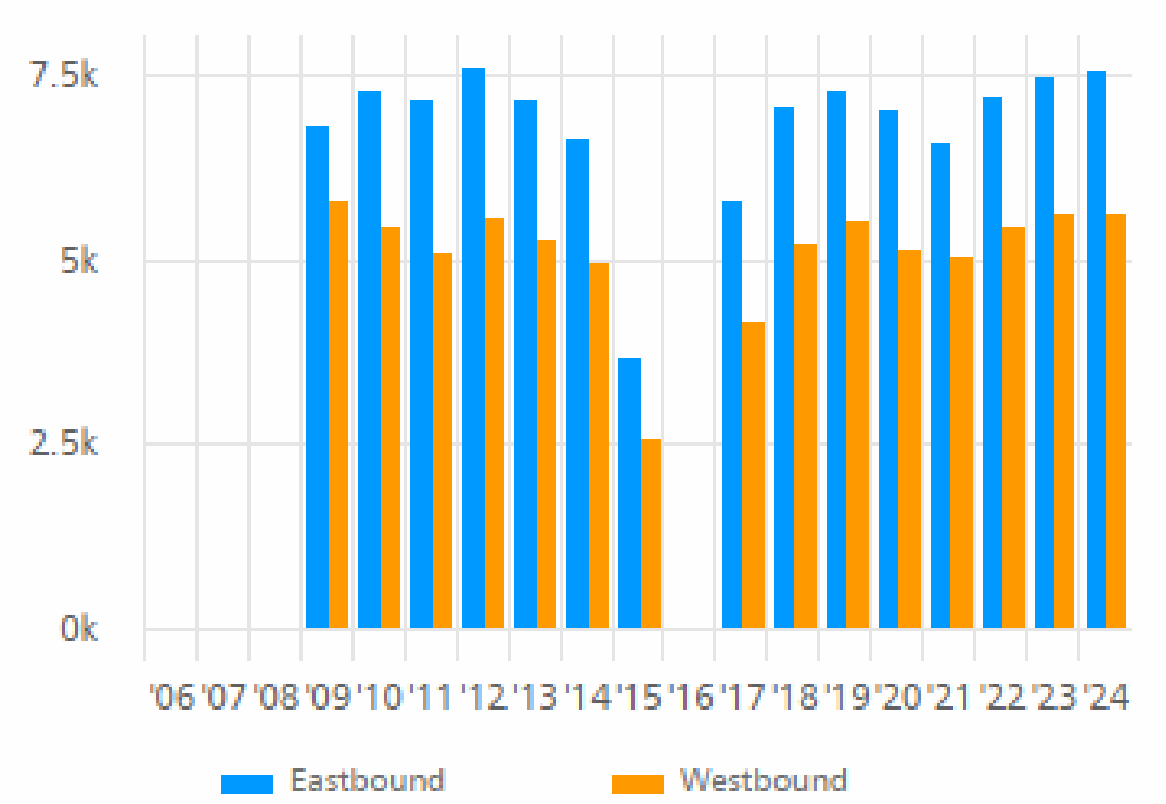


Figure 10 Historical traffic flows – Military Road (PM peak hour)

3 Transport and Access Strategy

3.1 Site access arrangements

Under the reference scheme prepared by Koichi Takada vehicle access (including B99s) would be obtained from Yeo Street to the west of the current access point as shown in Figure 11. Vehicles would access the on-site car parking area through a series of ramps on the western boundary of the site. The site would also offer a 'Direct to Boot service to facilitate online order pickups. A parking area will be provided at basement level for customers to access the Direct to Boot service with access also obtained via Yeo Street.

To ensure safe egress and separation from general traffic, it is proposed that service vehicles accessing the loading dock would do so via Military Lane similar to existing site arrangements.

Pedestrian access and site permeability would be significantly improved via a through site link and public plaza connecting Rangers Road to Yeo Street. Additional pedestrian access points would also be available via Rangers Road and Yeo Street.

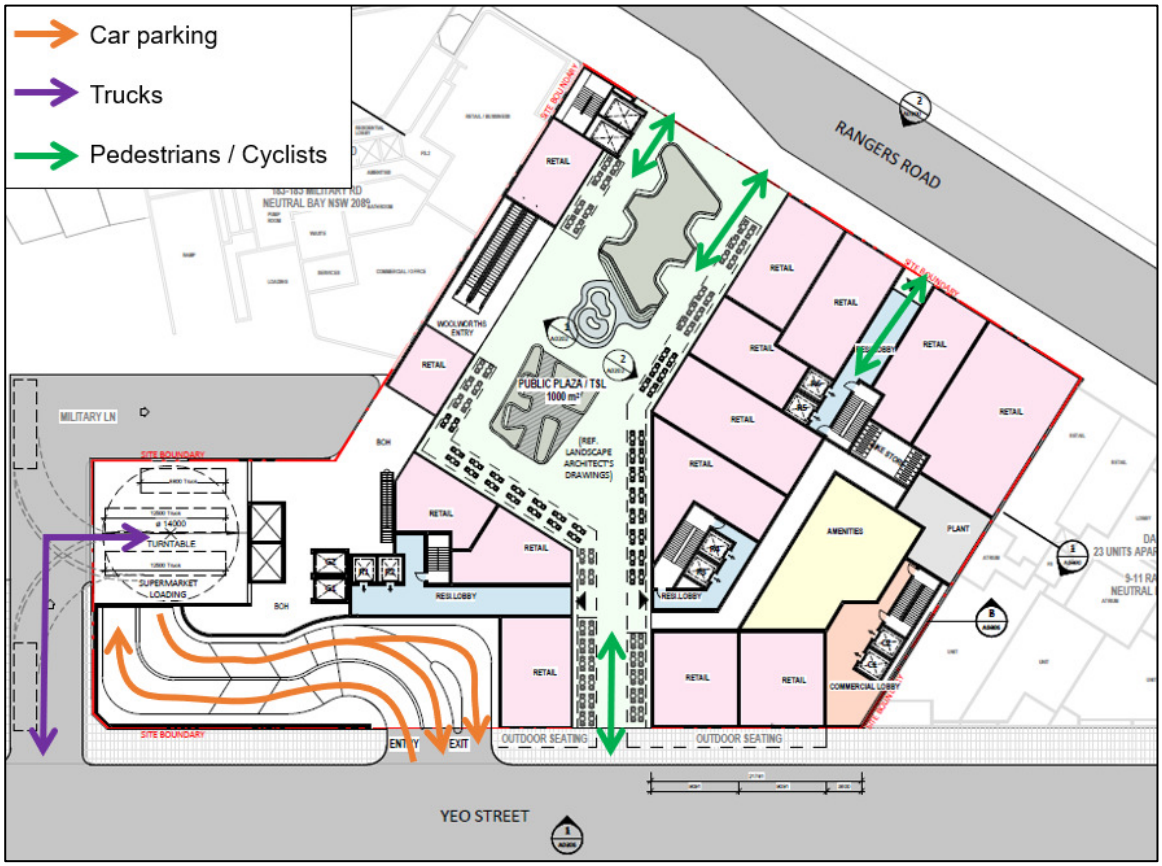


Figure 11 Proposed site access

3.2 Loading dock

The reference scheme includes an on-site loading dock which can accommodate up to three vehicles at any one time, those being:

- One Heavy Rigid Vehicle (HRVs), 12.5m in length
- One Medium Rigid Vehicle (MRV), 8.8m in length
- One Small Rigid Vehicle (SRV), 6.4m in length

This loading provision is considered suitable to accommodate the needs of the site based on the development yields associated with the reference scheme. The loading dock is located on the ground floor at the western end of the site accessed via Military Lane.

The loading dock has been designed in accordance with the requirements outlined in the relevant Australian Standard (AS2890.2, 2018). The final design of the loading dock will be carried out at the Development Application stage of the project.

3.3 Car park access and design

As part of the reference scheme developed for the Planning Proposal a basement car park has been designed to facilitate the future development. The car park and associated elements such as car parking space dimensions, circulation aisles and ramp would be designed in accordance with the relevant Australian Standard for car parking facilities, namely AS2890.1: 2004 and AS2890.6:2009.

Car parking spaces have been designed to comply with a Class 1 car park facility for the residential and commercial uses as specified in the Australian Standard (generally low turnover long term parking) with 2.4m wide spaces and aisle widths of 5.8m. For the retail car parking areas 2.6m wide spaces with 6.2m aisles have been provided in accordance with the requirements of Class 3 parking areas.

The final design of the car park will be carried out at the Development Application stage of the project.

3.4 Car parking

The proposed level of car parking for the site, for each of the proposed uses, is outlined in the following sections of this report. The parking numbers are based on the reference scheme prepared by Koichi Takada for the purposes of the Planning Proposal. It should be noted that the reference scheme is conceptual in nature and further investigations will need to be undertaken at subsequent stages to confirm the final parking number and layout. The final car parking requirements and provision for the site will be confirmed at the Development Application (DA) stage of the project.

3.4.1 Residential car parking

An assessment of car parking requirements for the proposal against requirements set out in North Sydney DCP has been. This analysis demonstrates that the proposed parking provision for the residential component of 58 spaces under the reference scheme is consistent with the maximum permissible parking provision allowable under the DCP.

3.4.2 Retail car parking

The North Sydney Council Development Control Plan (DCP) notes the following maximum parking rates for retail uses:

- Supermarkets - 4.0 spaces per 100m^2 GFA (1 space / 25m^2)
- Speciality retail – 1.67 spaces per 100m^2 GFA (1 space / 60m^2)

Adopting the floor space in the reference scheme prepared for the Planning Proposal a maximum of 164 spaces could be provided, comprising of 132 parking bays for the supermarket and 32 parking bays for speciality retail. The current reference scheme proposes 164 parking spaces for the retail uses of the site which is consistent with Council's controls. Providing an appropriate level of on-site car parking to meet customer needs will reduce demand for parking on surrounding streets and encourages customers to park in the basement.

3.4.3 Commercial car parking

The North Sydney DCP notes a maximum parking rate of 1 space per 60m^2 GFA for commercial uses. The reference scheme complies with this maximum parking rate by providing 40 parking spaces for the approximately 2,400m^2 of commercial floor space.

3.5 Bicycle parking

The North Sydney Council DCP outlines minimum bicycle parking requirements for new developments. Up to 135 bicycle parking spaces may be required based on the reference scheme prepared for the Planning Proposal. This will be confirmed at the DA stage of the development.

For residents and staff bicycle parking will be located in a secure location only accessible via key or swipe card. This will either be in individual storage units (Class 1 facility) or a large secure bicycle parking room within the site boundary (Class 2 facility). For retail and residential visitors class 3 bike parking (i.e. bike rails) will be provided in a publicly accessible location with good passive surveillance.

3.6 Green travel plan

3.6.1 Background

A Green Travel Plan (GTP) is a package of measures put in place by the development occupants to try and encourage more sustainable travel. It is a means for a development to demonstrate a commitment and take a pro-active step towards improving the environmental sustainability of its activities.

More generally, the principles of a GTP are applied to all people travelling to and from a site. Government authorities are placing increasing emphasis on the need to reduce the number and lengths of motorised journeys and in doing so encourage greater use of alternative means of travel with less negative environmental impacts than the car.

3.6.2 Objectives

The main objectives of the GTP are to reduce the need to travel and promotion of sustainable means of transport. The more specific objectives include:

- High mode share for public transport, cycling and walking to work journeys;
- Ensuring adequate facilities are provided at the site to enable the tenants and visitors of the development to commute by sustainable transport modes;
- Reduce the number of car journeys associated with business travel;
- Facilitate the sustainable and safe travel of occupants; and
- Raise awareness of sustainable transport amongst tenants of the development.

3.6.3 Potential measures

A suite of potential measures is described below to be implemented as part of the GTP, which can be developed further as the Planning Proposal progresses.

Table 2 List of potential GTP measures

Action	Responsibility
Cycling	
Provide sufficient cycle parking to meet needs, which is easily accessible and secure	Developer
Provide adequate cycle parking facilities for visitors	Developer
Ensure cycle parking is clearly visible or provide signage to direct people to cycle bays	Building manager
Produce a map showing cycle routes and bike stands in the area	Building manager
Supply a communal toolkit for staff consisting of puncture repair equipment, a bike pump, a spare lock and lights.	Building manager
Promote the participation in annual events such as 'Ride to Work Day'	Tenants
Walking	
Identify tenants living near work that may be interested in walking to work	Building manager
Identify through the travel survey what incentives might need to be put in place for non-walkers to consider a mode shift	
Public Transport	
Develop a map showing public transport routes in the area	Building manager
Put up a noticeboard with leaflets and maps showing the main public transport routes to and from the site	Building manager
Carshare / Carpooling	
Establish a car pooling program to help people find someone to share in their daily commute.	Building manager and tenants
Develop a map showing car-share spots in the area to encourage staff and visitors to use a shared car (e.g. GoGet) if they are required to drive	Building manager and tenants
General actions	
Promotion including: • Allow staff the flexibility to commute outside peak periods to reduce overall congestion and travel time. • Identify a tenant/champion to complete travel coordinator duties • Provide a welcome pack upon initial occupation of each tenant which includes details around sustainable travel options	Tenants

3.6.4 Monitoring and review

In order for the GTP to be effective, it must be reviewed on a regular basis. It is important to ensure that the GTP is meeting its objectives and having the intended impact on car use and transport choices. The GTP should be reviewed on a yearly basis by undertaking travel surveys. It is recommended that the mode shares are first reviewed at least 18 months after occupation, to allow activity levels to settle at the site.

4 Traffic Impact Assessment

The following section summarises the traffic assessment undertaken to consider the road network impacts of the Planning Proposal. The modelling has considered the traffic impacts of the proposal during the weekday morning, weekday afternoon and Saturday peak hours.

4.1 Traffic generation

4.1.1 Existing retail traffic generation

As previously noted the site currently operates as a Woolworths supermarket with approximately 100 car parking spaces. Traffic surveys indicated that currently the site generates the following levels of traffic:

- 101 vehicle movements during the AM peak hour (8am – 9am) or 3.72 trips / 100m^2 GLA[1]
- 229 vehicle movements during the PM peak hour (5pm – 6pm) or 8.44 trips / 100m^2 GLA
- 205 vehicle movements during the Saturday peak hour (12pm – 1pm) or 7.56 trips / 100m^2 GLA

4.1.2 Residential traffic generation

The forecast traffic generation for the residential uses has been determined based on the Sydney wide average traffic generation rates for high density residential uses as published by TfNSW which are as follows:

- AM peak hour: 0.15 vehicle trips per unit
- PM peak hour: 0.19 vehicle trips per unit
- Saturday peak hour: 0.22 vehicle trips per unit

4.1.3 Commercial traffic generation

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. Four sites were selected given their similar proximity to nearby public transport as well as similar car parking rates, which were sites located in North Sydney, Chatswood, Macquarie Park and Parramatta.

Given the constrained on-site parking environment, traffic generation rates per parking space have been used to estimate the likely peak hour vehicle trips generated by the site. The average peak hour trip rates per parking space for the surveyed locations were estimated to be 0.40 and 0.25 trips per parking space

[1] GFA to GLA conversion factor of 0.80 adopted for this analysis

during the AM and PM network peak hour respectively. The surveyed data for these sites is highlighted in Table 3 below. Minimal traffic generation would be expected for the Saturday peak hour.

Table 3 Peak hour vehicle trip generation per parking space

Surveyed location	North Sydney	Chatswood	Macquarie Park	Parramatta	Average
AM peak hour trips	51	47	119	185	100
PM peak hour trips	44	36	72	75	57
Parking spaces	136	150	269	402	239
AM peak hour trip rate	0.38	0.31	0.44	0.46	0.40
PM peak hour trip rate	0.32	0.24	0.27	0.19	0.25

Source: Roads and Maritime, Technical Direction 2013/14

4.1.4 Future retail traffic generation

Surveys undertaken by Transport for NSW at a number of retail centres in NSW have been used to determine the level of traffic generation from future retail uses. The floor area for each retail centre has been plotted against the surveyed traffic generation rate, and a regression analysis undertaken to establish the relationship between floor area and traffic generation. This is illustrated in Figure 12 and indicates that as retail floor space increases the rate of traffic generation reduces -reflecting the fact that as more speciality stores are added to a centre already containing an anchor tenant the rate of traffic generation will reduce.

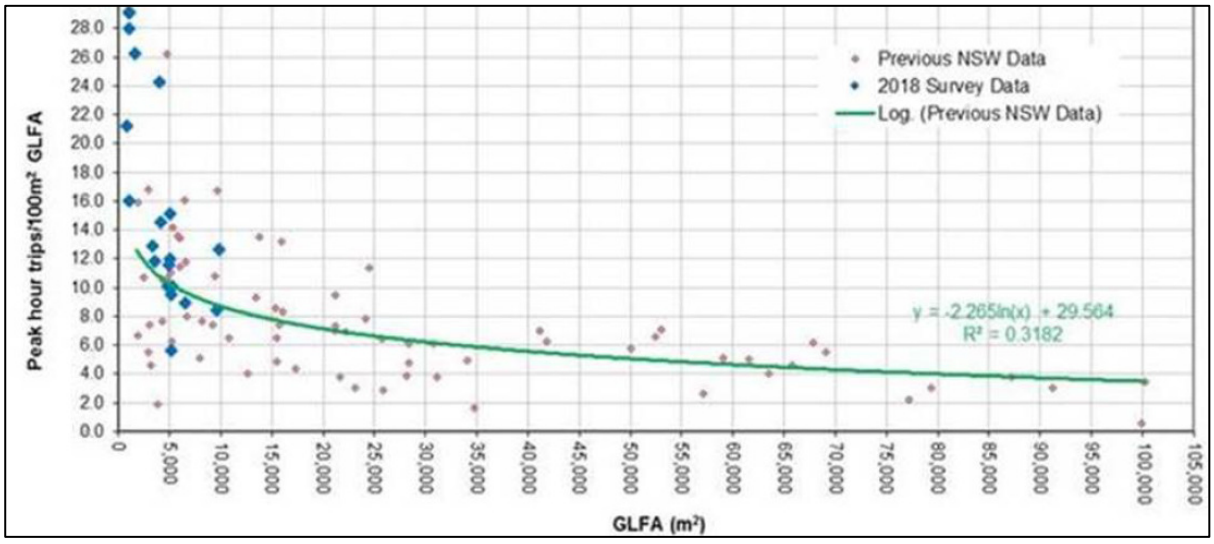


Figure 12 Relationship between retail floor area and traffic generation

The analysis recognises that the site is an established retail centre with a major anchor tenant (Woolworths). The additional retail floor space proposed comprises of uses that are ancillary to this anchor tenants and complement the range of services offered on the site. Therefore the additional floor space will not generate a large number of additional traffic movements, but instead it will provide existing customers with a wider offering as they travel to the site.

The existing and proposed retail floor area were then used as inputs to determine a ratio between existing and post-development traffic generation rates. This ratio was applied to the existing traffic generation rates at the site to determine the forecast future level of traffic, taking into account passing trade which typically comprises approximately 25% of all traffic as noted in the *RMS guide traffic generating developments* document. These forecasts are shown in the tables below

Table 4 Forecast traffic generation for future retail (AM peak hour)

Existing PM Peak Hour					**Future PM Peak Hour**					
Existing GLA	Existing gen. rate	Existing entry/exits	Passing trade trips	Total traffic generation	Future GLA	Future traffic gen. rate	Future entry/exits	Passing trade trips	Total traffic generation	**Growth in trips**
2,713	3.72	101	25	76	4,127	3.42	141	35	106	30

Table 5 Forecast traffic generation for future retail (PM peak hour)

Existing PM Peak Hour					**Future PM Peak Hour**					
Existing GLA	Existing gen. rate	Existing entry/exits	Passing trade trips	Total traffic generation	Future GLA	Future traffic gen. rate	Future entry/exits	Passing trade trips	Total traffic generation	**Growth in trips**
2,713	8.44	229	57	172	4,127	7.75	320	80	240	68

Table 6 Forecast traffic generation for future retail (Saturday peak hour)

Existing Saturday Peak Hour					**Future Saturday Peak Hour**					
Existing GLA	Existing gen. rate	Existing entry/exits	Passing trade trips	Total traffic generation	Future GLA	Future traffic gen. rate	Future entry/exits	Passing trade trips	Total traffic generation	**Growth in trips**
2,713	7.56	205	51	154	4,127	6.94	286	72	214	60

4.1.5 Net traffic generation

Considering the various uses envisaged within the Planning Proposal the overall increase in traffic generation is summarised in Table 7 below.

Table 7Net traffic generation

Use	Quantum	Unit	Net Increase in Traffic Generation		
			AM Peak Hour	PM Peak Hour	Sat Peak Hour
Residential	63	apartments	9	12	14
Commercial	40	parking spaces	16	10	4
Retail	5,159	m^2 GFA	30	68	60
Total			**55**	**90**	**78**

4.2 Traffic distribution

The forecast direction of travel to the site utilised in the traffic modelling is shown in Figure 13. The number of different arrival and departure routes available to customers contributes to spreading the traffic load and minimising the impact on the surrounding road network.

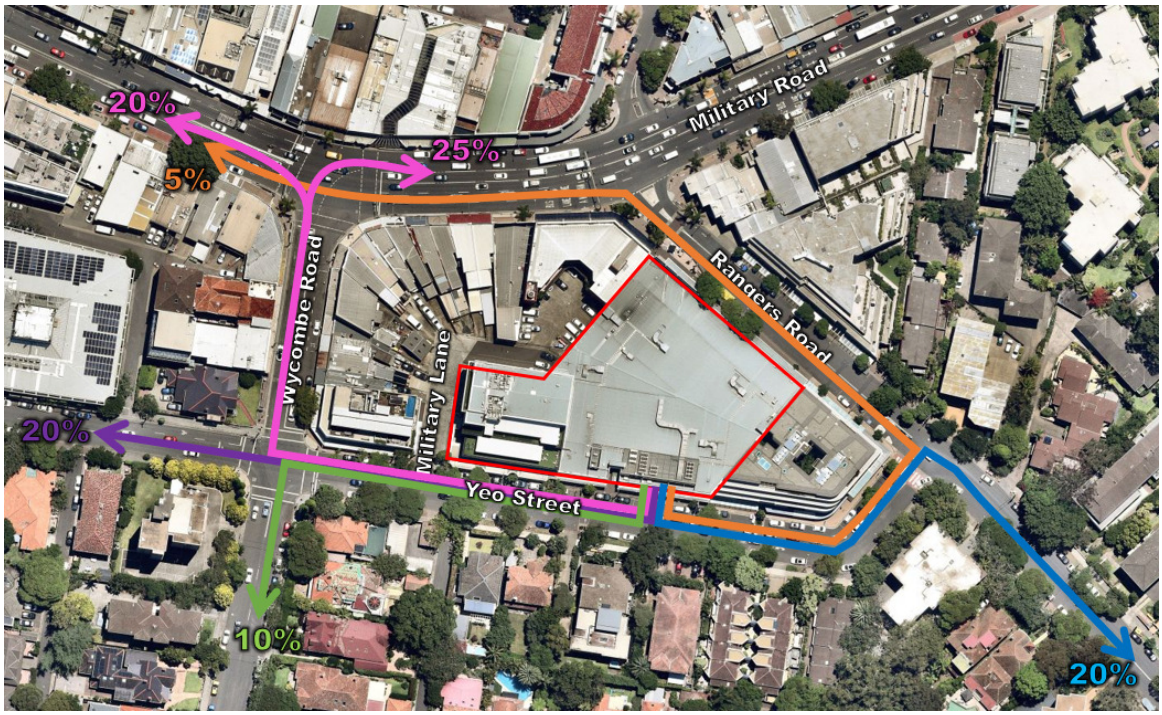


Figure 13 Forecast traffic distribution

The resulting increase in traffic movements at each intersection based on the forecast traffic generation and distribution is shown in the figures below. Through this it can be seen that, as a result of the relatively low net traffic increase and multiple routes available, that the increase in vehicles travelling through intersections around the site is generally modest at less than 20 vehicles per hour or one vehicle every three minutes.

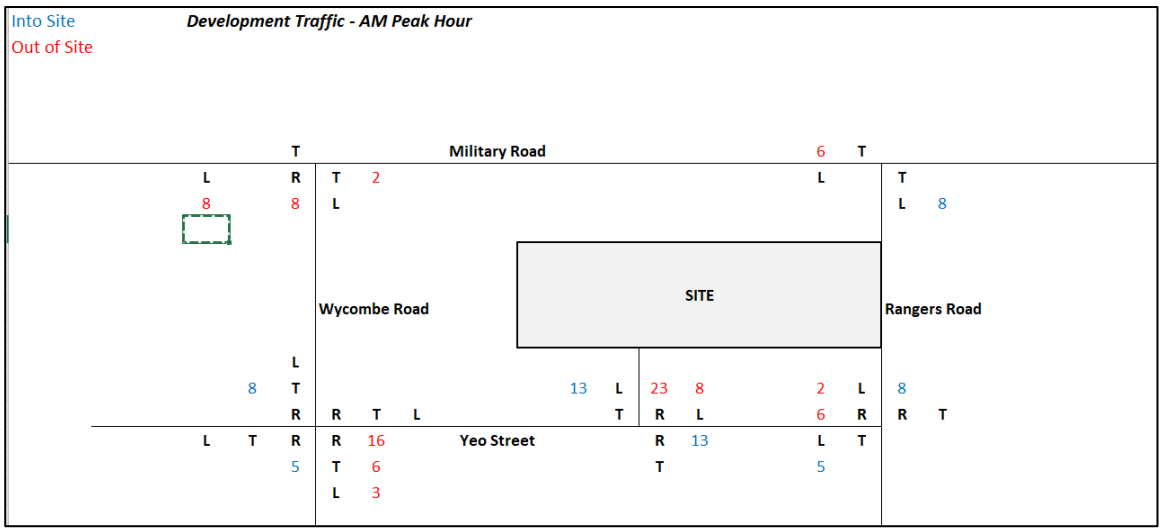


Figure 14 Forecast increase in traffic movements by intersection (AM peak hour)

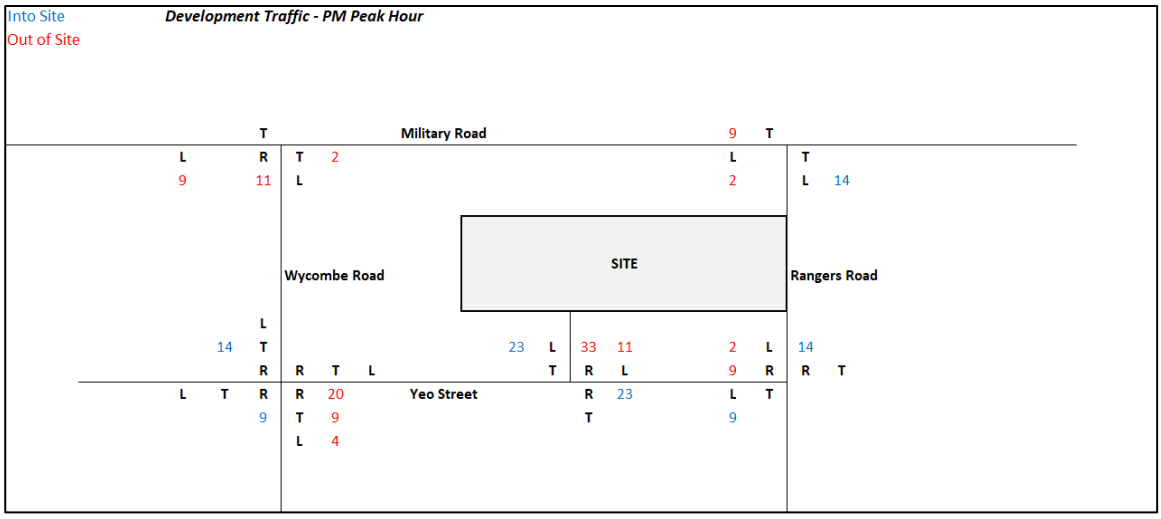


Figure 15 Forecast increase in traffic movements by intersection (PM peak hour)

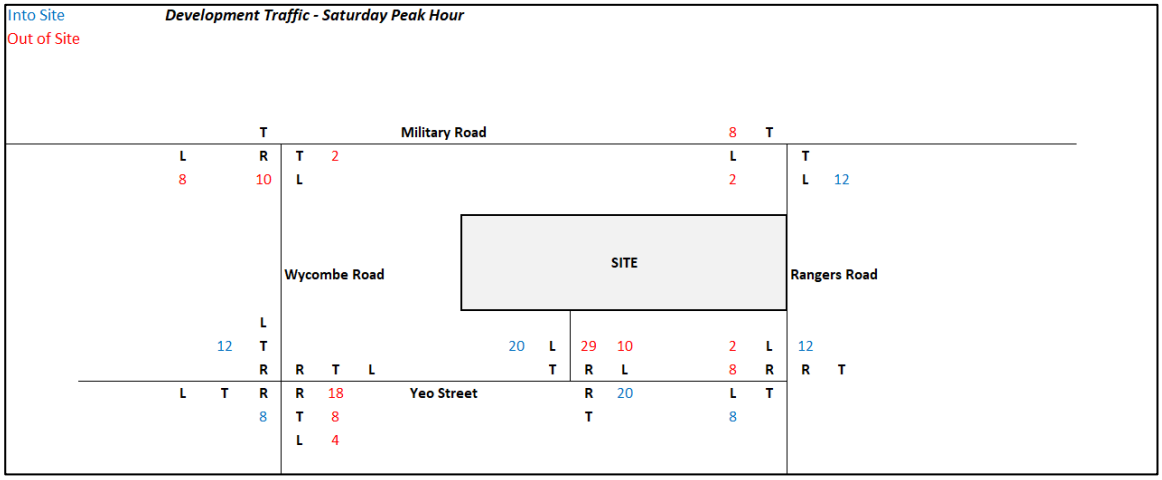


Figure 16 Forecast increase in traffic movements by intersection (Sat peak hour)

4.3 Traffic modelling

Detailed traffic modelling has been undertaken (in accordance with Transport for NSW guidelines) on surrounding intersections - including Military Road. This modelling has been updated following feedback received from TfNSW in June 2024, with responses to the modelling comments provided as Appendix A of this document.

The modelling demonstrates minimal changes in the operation of surrounding intersections with the development of the site as envisaged under the Planning Proposal. Drivers will experience minor increase in wait times of no more than 15 seconds with delays typically lower than 5 seconds at most intersections. Importantly intersections along Military Road are forecast to experience no material change in operational performance – with existing levels of service retained in all peak hours assessed. Traffic modelling outputs are summarised in the following tables, with detailed traffic modelling outputs provided in Appendix B of this document. The modelling undertaken therefore indicates that the proposal is not anticipated to result in unacceptable traffic impacts on the surrounding road network.

It is also worthwhile noting that a significant level of traffic already travelling along key roads in the vicinity of the site such as Military Road do so for the purpose of accessing nearby retail centres such as Big Bear Shopping Centre. While not specifically considered in the traffic analysis, all traffic associated with the proposal would not 'new' – instead trips (particularly from those in the local area not currently served by a full line supermarket) would be intercepted at Neutral Bay that would otherwise have continued along Military Road towards these existing centres.

Table 8 Road network performance – AM Peak Hour (8am – 9am)

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.96	32	C	0.96	32	C
Military Road / Rangers Road	0.65	1	A	0.65	1	A
Wycombe Road / Yeo Street	0.48	29	C	0.45	34	C
Rangers Road / Yeo Street	0.34	7	A	0.35	7	A

Table 9 Road network performance – PM Peak Hour (8am – 9am)

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.94	47	D	0.94	47	D
Military Road / Rangers Road	0.46	1	A	0.46	1	A
Wycombe Road / Yeo Street	0.45	18	B	0.43	33	C
Rangers Road / Yeo Street	0.34	6	A	0.34	6	A

Table 10 Road network performance – Saturday peak hour

Intersection	Intersection performance – Existing Conditions			Intersection performance –Proposal		
	Degree of Saturation	Average Delay (seconds)	Degree of Saturation	Degree of Saturation	Average Delay (seconds)	Degree of Saturation
Military Road / Wycombe Road	0.77	B	16	0.77	B	16
Military Road / Rangers Road	0.40	1	A	0.40	1	A
Wycombe Road / Yeo Street	0.45	18	B	0.40	29	C
Rangers Road / Yeo Street	0.38	6	A	0.40	6	A

5 Summary

This transport assessment report has been undertaken by JMT Consulting to support a Planning Proposal for the site at 1-11 Rangers Road, Neutral Bay. The proposal seeks to amend the North Sydney Local Environmental Plan to increase maximum height and density controls on the site, facilitating the future development of a mixed-use site including retail, commercial and residential floor space. Key findings of the transport assessment are as follows:

- Vehicle access to the site for general vehicles would be provided on Yeo Street, close to the existing access point for the site.
- Service vehicle access to an on-site loading dock is to be provided Military Lane to segregate cars in the basement and trucks using the loading dock – providing a strong safety outcome.
- Car parking and bicycle parking on the site for all uses will be delivered in accordance with the parking rates outlined in the North Sydney DCP, with the final number of spaces to be determined at the Development Application stage of the project.
- The proposal includes sub-terranean public car parking spaces which benefit existing businesses and visitors of the Neutral Bay town centre and align with recommendations of the Military Road Corridor Planning Study.
- Traffic modelling undertaken indicates that the proposal is not anticipated to result in unacceptable traffic impacts on the surrounding road network – with all intersections in the vicinity of the site continuing to operate at acceptable levels of service.
- Travel demand management measures have been suggested to improve the mode share of public transport and active transport. These items should be considered further at subsequent stages of the project.

In the above context, the traffic and transport impacts arising from the proposal are considered acceptable.

Appendix B: Responses to TfNSW Traffic Modelling Comments

Item	Material	Section	Comment	Priority	Modeller Response
1	Model	Lane Geometry	Non default lane data (capacity adjustment -33% & -60%) applied for all lanes at Mulitary Road which may reflect site condition. However there is no model calibration and validation provided in the report. Please provide justification or data to support this changes.	Major	The lane adjustment factors were made to Military Road based on site observations to reflect downstream and upstream queueing impacts. These lane adjustment factors result in a reduced level of service along Military Road compared to the use of the default values and therefore represent conservative conditions. The capacity adjustments have been amended in the updated models following incorporation of TfNSW advice.
2	Model	Pedestrians	Default 50 Pedestrian per hour were modelled. It does not reflect delays that would occur to traffic being forced to give way to pedestrians especially near high pedestrian activities area (ie across Military Rd)	Medium	Actual pedestrian flows based on survey data have been included in the updated models, as per TfNSW guidance
3	Model	Pedestrians Movement Data	The pedestrians uses a default walking speed of 1.3m/s whereas the RMS modelling guidelines recommend 1.2m/s.	Minor	Pedestrian speed updated in all models to 1.2m/s as per TfNSW guidance
4	Model	Volume	Percentage of Heavy vehicles volume were used. It is recommended actual survey count to be used or justification and data to be provided.	Medium	Actual heavy vehicle volumes rather than %HGVs, based on survey data, have been included in the updated models, as per TfNSW guidance
5	Model	Priorities	No late start (pedestrian protection) or priority were modelled in all models which assumed no start delay to that traffic movement. However, where traffic movements conflict with pedestrians, delays would occur to traffic being forced to give way to pedestrians. This is likely to result in higher modelled traffic capacity at the intersection than can be realised with pedestrian activity.	Medium	Priorities to pedestrian movements at formal crossing points added in the model as per TfNSW guidance.

Item	Material	Section	Comment	Priority	Modeller Response
6	Model	Vehicle Movement Data	Incorrect speed limit – default 60km/h were modelled in all intersections. However 50km/h speed limit is at Wycombe Road, Rangers Road and Yeo Street Lambton Rd and Speed Zone speed limit on Military Rd (East of Rangers Rd) should be applied for both peak (Assumed peak hour within school zone period since the modelling peak periods didn't provide in the report)	Medium	50km/h speed limit applied for Wycombe Road, Rangers Road and Yeo Street. 60km/h speed on Military Road retained as PM peak hour is 4.45pm-5.45pm i.e. outside of school zone times
7	Model	Phasing & Timing	Default intergreen time (6 seconds) were used at Militarty Rd / Wycombe Rd intersection. It need to be reviewed to reflect the SCATS setting at site.	Minor	SIDRA unable to accept a 2.5 second all-red time. Noting this comment is minor, proposed to retain the 6 second intergreen time.
8	Model	Phasing & Timing	According to SCATS phase setting, left turn movement is also running in Phase B (phase A in SIDRA model). Review is needed.	Medium	Phasing amended as per TfNSW guidance
9	Model	Phasing & Timing	Late start applied at Militarty Rd / Wycombe Rd intersection, however they were not included in the model. Review is needed.	Minor	Late start applied as per TfNSW guidance
10	Model	Parameter settings	HV PCU values for all models have been left at the default of 1.65 whereas the RMS modelling guidelines recommend increasing this value to 2.	Minor	PCU values set to 2.0 as per TfNSW guidance

Item	Material	Section	Comment	Priority	Modeller Response
11	Report / Models	Section 4 / Model Scenarios	Not agree to exclude AM peak model in this assessment. Left turn out from Rangers Rd to Military Rd is banned during AM peak, network geometry (2 x AM only bus lanes along Military Rd) and path are significantly different. Also, retails and commerical traffic are operating since AM peak. therefore, AM peak should consider to be assessed the impact to existing road network.	Major	The SIDRA AM models are included as part of the revised modelling package issued to TfNSW.
12	Report / Models	Future year scenarios	The report does not seem to provide any detail of how the future traffic to be changed within the study area. Additionally, the future year scenario (eg openning year +10yrs) is required for determining the traffic impact to road network from the development.	Major	More recent traffic data now provided in the updated report which considers changes in traffic movements over a long period of time including 2024 – indicating no traffic growth on Military Road during AM and PM peak periods.
13	Report	2.3	It is stated that "The site is located adjacent to the Military Road corridor which is one of Sydney's busiest and most important bus corridors", however there is no bus demand modelled in SIDRA modelling	Minor	Bus flows are incorporated within the heavy vehicle movements within the model

Item	Material	Section	Comment	Priority	Modeller Response
14	Report	2.7	AM historical traffic flows (before 2021) were provided in the report, however AM peak model is not consider in this analysis. Not clear how traffic pattern change in PM peak. Also 2021 traffic data were impacted by COVID and more than 10% different compare to pre-COVID level. More recent traffic survey or SCATS count data should be assessed to understand post-COVID traffic level / pattern.	Major	More recent traffic data now provided in the updated report which considers changes in traffic movements over a long period of time including 2024 – indicating no traffic growth on Military Road during AM and PM peak periods. November 2022 traffic data utilised (well outside of COVID) to inform modelling.
15	Report	3.2	There is 3 types of heavy vehicles (up to 12.5m) to access the loading dock. It is not clear how to capture it in SIDRA model and no swept path analysis provided in the report	Minor	Vehicles accessing the loading dock are captured in the heavy vehicle flows in the SIDRA model. Movements to/from the loading dock are minor, particularly during peak hours, and would not materially impact the outcomes of the traffic modelling.

Appendix B: Traffic Modelling Outputs

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: AM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	87	1.2	87	1.2	* 0.278	41.2	LOS C	2.4	16.7	0.67	0.70	0.67	24.6
3	R2	All MCs	104	11.1	104	11.1	0.275	19.3	LOS B	1.4	10.6	0.33	0.60	0.33	11.9
Approach			192	6.6	192	6.6	0.278	29.3	LOS C	2.4	16.7	0.49	0.65	0.49	21.2
East: Military Road (E)															
4	L2	All MCs	62	18.6	62	18.6	0.060	6.9	LOS A	0.5	3.8	0.27	0.60	0.27	26.7
5	T1	All MCs	2275	9.6	2275	9.6	* 0.960	44.6	LOS D	10.7	80.0	0.98	1.03	1.14	26.7
Approach			2337	9.9	2337	9.9	0.960	43.6	LOS D	10.7	80.0	0.97	1.02	1.12	26.7
West: Military Road (W)															
11	T1	All MCs	1984	9.2	1984	9.2	0.828	18.0	LOS B	30.1	227.5	0.81	0.74	0.81	38.0
Approach			1984	9.2	1984	9.2	0.828	18.0	LOS B	30.1	227.5	0.81	0.74	0.81	38.0
All Vehicles			4513	9.4	4513	9.4	0.960	31.7	LOS C	30.1	227.5	0.88	0.88	0.95	30.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	88	67.3	LOS F	0.3	0.3	0.98	0.98	233.9	200.0	0.85
East: Military Road (E)											
P2	Full	240	67.7	LOS F	0.9	0.9	0.99	0.99	234.4	200.0	0.85
West: Military Road (W)											
P4	Full	101	67.3	LOS F	0.4	0.4	0.98	0.98	234.0	200.0	0.85
All Pedestrians		429	67.5	LOS F	0.9	0.9	0.99	0.99	234.2	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: AM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	54	15.7	54	15.7	0.044	4.8	LOS A	0.1	0.5	0.07	0.50	0.07	33.0
Approach			54	15.7	54	15.7	0.044	4.8	LOS A	0.1	0.5	0.07	0.50	0.07	33.0
East: Military Road (E)															
4	L2	All MCs	42	7.5	42	7.5	0.035	5.6	LOS A	0.0	0.0	0.00	0.45	0.00	52.7
5	T1	All MCs	2283	9.7	2283	9.7	0.648	0.4	LOS A	41.6	309.8	0.00	0.00	0.00	59.1
Approach			2325	9.7	2325	9.7	0.648	0.5	NA	41.6	309.8	0.00	0.01	0.00	59.0
West: Military Road (W)															
11	T1	All MCs	2055	9.4	2055	9.4	0.576	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.4
Approach			2055	9.4	2055	9.4	0.576	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.4
All Vehicles			4434	9.6	4434	9.6	0.648	0.4	NA	41.6	309.8	0.00	0.01	0.00	59.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: AM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	141	1.5	141	1.5	0.484	61.2	LOS E	5.8	41.4	0.95	0.80	0.95	27.0
2	T1	All MCs	136	6.2	136	6.2	0.484	54.7	LOS D	5.8	42.1	0.95	0.78	0.95	19.7
3	R2	All MCs	24	13.0	24	13.0	* 0.484	68.8	LOS E	5.7	42.1	0.95	0.78	0.95	19.7
Approach			301	4.5	301	4.5	0.484	58.9	LOS E	5.8	42.1	0.95	0.79	0.95	23.7
East: Yeo Street (E)															
4	L2	All MCs	45	0.0	45	0.0	0.071	20.2	LOS B	1.2	8.6	0.35	0.46	0.35	40.7
5	T1	All MCs	375	0.6	375	0.6	0.353	16.2	LOS B	6.2	44.1	0.44	0.43	0.44	41.6
6	R2	All MCs	33	9.7	33	9.7	0.353	27.3	LOS B	6.2	44.1	0.45	0.43	0.45	29.5
Approach			453	1.2	453	1.2	0.353	17.4	LOS B	6.2	44.1	0.43	0.43	0.43	41.1
North: Wycombe Road (N)															
7	L2	All MCs	4	25.0	4	25.0	0.066	60.3	LOS E	0.7	5.6	0.85	0.63	0.85	5.0
8	T1	All MCs	34	18.8	34	18.8	0.328	52.4	LOS D	2.2	17.5	0.88	0.69	0.88	21.4
9	R2	All MCs	40	15.8	40	15.8	0.328	67.2	LOS E	2.2	17.5	0.91	0.74	0.91	20.0
Approach			78	17.6	78	17.6	0.328	60.4	LOS E	2.2	17.5	0.89	0.71	0.89	20.1
West: Yeo Street (W)															
10	L2	All MCs	52	12.2	52	12.2	0.075	13.4	LOS A	1.2	9.0	0.36	0.50	0.36	38.9
11	T1	All MCs	249	5.1	249	5.1	0.373	10.1	LOS A	6.6	47.7	0.50	0.55	0.50	36.0
12	R2	All MCs	115	1.8	115	1.8	* 0.373	23.3	LOS B	6.6	47.7	0.52	0.55	0.52	40.6
Approach			416	5.1	416	5.1	0.373	14.2	LOS A	6.6	47.7	0.49	0.54	0.49	38.1
All Vehicles			1247	4.3	1247	4.3	0.484	29.0	LOS C	6.6	47.7	0.60	0.57	0.60	32.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	94	64.4	LOS F	0.4	0.4	0.96	0.96	231.0	200.0	0.87
East: Yeo Street (E)											

P2	Full	195	64.7	LOS F	0.7	0.7	0.96	0.96	231.3	200.0	0.86
North: Wycombe Road (N)											
P3	Full	177	64.6	LOS F	0.7	0.7	0.96	0.96	231.3	200.0	0.86
West: Yeo Street (W)											
P4	Full	120	64.5	LOS F	0.5	0.5	0.96	0.96	231.1	200.0	0.87
All Pedestrians		585	64.6	LOS F	0.7	0.7	0.96	0.96	231.2	200.0	0.86

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: 101 [Rangers Road - Yeo Street (Site Folder: AM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	362	0.9	362	0.9	0.341	5.9	LOS A	0.7	5.3	0.39	0.51	0.39	43.6
2	T1	All MCs	69	4.5	69	4.5	0.341	0.0	LOS A	0.7	5.3	0.39	0.51	0.39	43.6
Approach			432	1.5	432	1.5	0.341	4.9	NA	0.7	5.3	0.39	0.51	0.39	43.6
North: Rangers Road (N)															
8	T1	All MCs	52	4.1	52	4.1	0.068	0.0	LOS A	0.1	1.0	0.49	0.53	0.49	45.5
9	R2	All MCs	35	6.1	35	6.1	0.068	11.3	LOS A	0.1	1.0	0.49	0.53	0.49	33.6
Approach			86	4.9	86	4.9	0.068	4.6	NA	0.1	1.0	0.49	0.53	0.49	43.6
West: Yeo Street (W)															
10	L2	All MCs	29	35.7	29	35.7	0.319	9.3	LOS A	0.5	3.4	0.36	0.93	0.36	31.3
12	R2	All MCs	235	3.1	235	3.1	0.319	9.8	LOS A	0.5	3.4	0.36	0.93	0.36	41.2
Approach			264	6.8	264	6.8	0.319	9.7	LOS A	0.5	3.4	0.36	0.93	0.36	40.8
All Vehicles			782	3.6	782	3.6	0.341	6.5	NA	0.7	5.3	0.39	0.66	0.39	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: AM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	96	1.1	96	1.1	* 0.304	42.2	LOS C	2.7	18.9	0.70	0.71	0.70	24.3
3	R2	All MCs	113	10.3	113	10.3	0.295	25.0	LOS B	2.0	15.3	0.45	0.64	0.45	15.2
Approach			208	6.1	208	6.1	0.304	32.9	LOS C	2.7	18.9	0.56	0.67	0.56	21.1
East: Military Road (E)															
4	L2	All MCs	62	18.6	62	18.6	0.060	6.9	LOS A	0.5	3.8	0.27	0.60	0.27	26.7
5	T1	All MCs	2277	9.6	2277	9.6	* 0.961	44.9	LOS D	52.5	391.2	0.98	1.04	1.14	26.6
Approach			2339	9.9	2339	9.9	0.961	43.9	LOS D	52.5	391.2	0.97	1.02	1.12	26.6
West: Military Road (W)															
11	T1	All MCs	1984	9.2	1984	9.2	0.828	18.0	LOS B	30.1	227.5	0.81	0.74	0.81	39.9
Approach			1984	9.2	1984	9.2	0.828	18.0	LOS B	30.1	227.5	0.81	0.74	0.81	39.9
All Vehicles			4532	9.4	4532	9.4	0.961	32.0	LOS C	52.5	391.2	0.88	0.88	0.96	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	88	67.3	LOS F	0.3	0.3	0.98	0.98	233.9	200.0	0.85
East: Military Road (E)											
P2	Full	240	67.7	LOS F	0.9	0.9	0.99	0.99	234.4	200.0	0.85
West: Military Road (W)											
P4	Full	101	67.3	LOS F	0.4	0.4	0.98	0.98	234.0	200.0	0.85
All Pedestrians		429	67.5	LOS F	0.9	0.9	0.99	0.99	234.2	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: AM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	54	15.7	54	15.7	0.044	4.7	LOS A	0.1	0.5	0.06	0.50	0.06	33.9
Approach			54	15.7	54	15.7	0.044	4.7	LOS A	0.1	0.5	0.06	0.50	0.06	33.9
East: Military Road (E)															
4	L2	All MCs	51	6.3	51	6.3	0.037	5.6	LOS A	0.0	0.0	0.00	0.49	0.00	52.2
5	T1	All MCs	2283	9.7	2283	9.7	0.648	0.4	LOS A	0.0	0.0	0.00	0.00	0.00	59.2
Approach			2334	9.7	2334	9.7	0.648	0.5	NA	0.0	0.0	0.00	0.01	0.00	59.0
West: Military Road (W)															
11	T1	All MCs	2061	9.3	2061	9.3	0.578	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.4
Approach			2061	9.3	2061	9.3	0.578	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.4
All Vehicles			4448	9.6	4448	9.6	0.648	0.4	NA	0.1	0.5	0.00	0.01	0.00	59.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: AM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	141	1.5	141	1.5	0.440	58.2	LOS E	5.8	41.2	0.93	0.79	0.93	27.6
2	T1	All MCs	136	6.2	136	6.2	0.440	51.6	LOS D	5.8	41.2	0.93	0.77	0.93	20.3
3	R2	All MCs	29	10.7	29	10.7	* 0.440	64.4	LOS E	5.6	41.2	0.93	0.77	0.93	20.3
Approach			306	4.5	306	4.5	0.440	55.9	LOS D	5.8	41.2	0.93	0.78	0.93	24.3
East: Yeo Street (E)															
4	L2	All MCs	48	0.0	48	0.0	0.090	29.7	LOS C	1.6	10.9	0.38	0.46	0.38	40.0
5	T1	All MCs	381	0.6	381	0.6	0.449	30.2	LOS C	9.1	64.3	0.60	0.57	0.60	36.6
6	R2	All MCs	49	6.4	49	6.4	* 0.449	62.2	LOS E	9.1	64.3	0.64	0.59	0.64	21.3
Approach			479	1.1	479	1.1	0.449	33.4	LOS C	9.1	64.3	0.58	0.56	0.58	36.1
North: Wycombe Road (N)															
7	L2	All MCs	4	25.0	4	25.0	0.058	55.9	LOS D	0.6	5.3	0.83	0.62	0.83	5.3
8	T1	All MCs	34	18.8	34	18.8	0.288	48.2	LOS D	2.1	17.0	0.86	0.68	0.86	22.1
9	R2	All MCs	40	15.8	40	15.8	0.288	62.4	LOS E	2.1	17.0	0.89	0.73	0.89	20.7
Approach			78	17.6	78	17.6	0.288	55.9	LOS D	2.1	17.0	0.87	0.70	0.87	20.8
West: Yeo Street (W)															
10	L2	All MCs	52	12.2	52	12.2	0.247	15.9	LOS B	4.8	35.5	0.42	0.42	0.42	39.2
11	T1	All MCs	258	4.9	258	4.9	0.247	9.2	LOS A	4.8	35.5	0.43	0.43	0.43	38.8
12	R2	All MCs	115	1.8	115	1.8	0.247	25.1	LOS B	2.8	20.2	0.58	0.70	0.58	36.9
Approach			424	5.0	424	5.0	0.247	14.3	LOS A	4.8	35.5	0.47	0.50	0.47	38.0
All Vehicles			1287	4.2	1287	4.2	0.449	33.8	LOS C	9.1	64.3	0.64	0.60	0.64	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	94	64.4	LOS F	0.4	0.4	0.96	0.96	231.0	200.0	0.87

East: Yeo Street (E)										
P2	Full	195	64.7	LOS F	0.7	0.7	0.96	0.96	231.3	200.0	0.86
North: Wycombe Road (N)										
P3	Full	177	64.6	LOS F	0.7	0.7	0.96	0.96	231.3	200.0	0.86
West: Yeo Street (W)										
P4	Full	120	64.5	LOS F	0.5	0.5	0.96	0.96	231.1	200.0	0.87
All Pedestrians		585	64.6	LOS F	0.7	0.7	0.96	0.96	231.2	200.0	0.86

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: 101 [Rangers Road - Yeo Street (Site Folder: AM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [AM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	367	0.9	367	0.9	0.346	5.9	LOS A	0.8	5.4	0.39	0.52	0.39	43.6
2	T1	All MCs	69	4.5	69	4.5	0.346	0.0	LOS A	0.8	5.4	0.39	0.52	0.39	43.6
Approach			437	1.4	437	1.4	0.346	5.0	NA	0.8	5.4	0.39	0.52	0.39	43.6
North: Rangers Road (N)															
8	T1	All MCs	52	4.1	52	4.1	0.078	0.0	LOS A	0.2	1.2	0.52	0.57	0.52	45.1
9	R2	All MCs	43	4.9	43	4.9	0.078	10.9	LOS A	0.2	1.2	0.52	0.57	0.52	32.6
Approach			95	4.4	95	4.4	0.078	5.0	NA	0.2	1.2	0.52	0.57	0.52	42.7
West: Yeo Street (W)															
10	L2	All MCs	32	33.3	32	33.3	0.332	9.2	LOS A	0.5	3.8	0.38	0.93	0.38	31.2
12	R2	All MCs	241	3.1	241	3.1	0.332	10.0	LOS A	0.5	3.8	0.38	0.93	0.38	41.2
Approach			273	6.6	273	6.6	0.332	9.9	LOS A	0.5	3.8	0.38	0.93	0.38	40.7
All Vehicles			804	3.5	804	3.5	0.346	6.6	NA	0.8	5.4	0.40	0.66	0.40	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: PM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	71	1.5	71	1.5	0.102	34.1	LOS C	1.9	13.3	0.68	0.71	0.68	26.8
3	R2	All MCs	95	5.6	95	5.6	0.124	29.2	LOS C	2.3	17.0	0.63	0.70	0.63	8.3
Approach			165	3.8	165	3.8	0.124	31.3	LOS C	2.3	17.0	0.65	0.70	0.65	19.8
East: Military Road (E)															
4	L2	All MCs	67	18.8	67	18.8	* 0.811	8.6	LOS A	10.6	80.0	0.93	0.87	0.94	8.1
5	T1	All MCs	1937	8.4	1937	8.4	0.811	36.2	LOS C	10.7	80.0	0.93	0.86	0.94	30.2
Approach			2004	8.8	2004	8.8	0.811	35.3	LOS C	10.7	80.0	0.93	0.86	0.94	29.7
West: Military Road (W)															
11	T1	All MCs	2420	5.9	2420	5.9	* 0.943	58.3	LOS E	38.6	283.5	1.00	1.09	1.18	20.8
Approach			2420	5.9	2420	5.9	0.943	58.3	LOS E	38.6	283.5	1.00	1.09	1.18	20.8
All Vehicles			4589	7.1	4589	7.1	0.943	47.3	LOS D	38.6	283.5	0.96	0.97	1.05	24.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	111	67.3	LOS F	0.4	0.4	0.98	0.98	234.0	200.0	0.85
East: Military Road (E)											
P2	Full	424	68.2	LOS F	1.7	1.7	1.00	1.00	234.9	200.0	0.85
West: Military Road (W)											
P4	Full	155	67.5	LOS F	0.6	0.6	0.98	0.98	234.1	200.0	0.85
All Pedestrians		689	67.9	LOS F	1.7	1.7	0.99	0.99	234.6	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: PM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	138	6.1	138	6.1	0.445	10.2	LOS A	2.4	18.0	0.66	0.90	0.83	24.1
Approach			138	6.1	138	6.1	0.445	10.2	LOS A	2.4	18.0	0.66	0.90	0.83	24.1
East: Military Road (E)															
4	L2	All MCs	54	2.0	54	2.0	0.357	5.7	LOS A	10.4	78.0	0.00	0.05	0.00	58.8
5	T1	All MCs	1866	9.0	1866	9.0	0.357	0.1	LOS A	13.6	102.5	0.00	0.02	0.00	59.5
Approach			1920	8.8	1920	8.8	0.357	0.3	NA	13.6	102.5	0.00	0.02	0.00	59.4
West: Military Road (W)															
11	T1	All MCs	2373	6.1	2373	6.1	0.430	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			2373	6.1	2373	6.1	0.430	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles			4431	7.3	4431	7.3	0.445	0.5	NA	13.6	102.5	0.02	0.04	0.03	58.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: PM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	109	0.0	109	0.0	0.360	31.9	LOS C	2.4	16.7	0.91	0.77	0.91	34.5
2	T1	All MCs	111	1.9	111	1.9	*0.360	25.1	LOS B	2.5	17.6	0.90	0.74	0.90	28.5
3	R2	All MCs	42	0.0	42	0.0	0.360	32.7	LOS C	2.5	17.6	0.90	0.74	0.90	28.7
Approach			262	0.8	262	0.8	0.360	29.2	LOS C	2.5	17.6	0.90	0.75	0.90	31.8
East: Yeo Street (E)															
4	L2	All MCs	63	1.7	63	1.7	0.064	16.5	LOS B	0.6	4.3	0.48	0.65	0.48	39.2
5	T1	All MCs	280	0.4	280	0.4	0.319	12.4	LOS A	3.3	23.0	0.56	0.49	0.56	42.7
6	R2	All MCs	18	5.9	18	5.9	0.319	20.0	LOS B	3.3	23.0	0.56	0.49	0.56	31.5
Approach			361	0.9	361	0.9	0.319	13.5	LOS A	3.3	23.0	0.55	0.52	0.55	41.8
North: Wycombe Road (N)															
7	L2	All MCs	12	9.1	12	9.1	0.051	30.7	LOS C	0.3	2.3	0.84	0.65	0.84	8.4
8	T1	All MCs	44	7.1	44	7.1	0.255	24.9	LOS B	1.3	9.9	0.88	0.71	0.88	29.4
9	R2	All MCs	33	9.7	33	9.7	0.255	34.3	LOS C	1.3	9.9	0.89	0.72	0.89	28.5
Approach			88	8.3	88	8.3	0.255	29.1	LOS C	1.3	9.9	0.88	0.70	0.88	27.7
West: Yeo Street (W)															
10	L2	All MCs	81	3.9	81	3.9	0.090	12.9	LOS A	0.9	6.2	0.51	0.65	0.51	37.4
11	T1	All MCs	275	0.4	275	0.4	0.450	9.5	LOS A	4.9	34.0	0.65	0.62	0.65	37.9
12	R2	All MCs	109	0.0	109	0.0	*0.450	17.5	LOS B	4.9	34.0	0.65	0.62	0.65	42.1
Approach			465	0.9	465	0.9	0.450	12.0	LOS A	4.9	34.0	0.62	0.63	0.62	39.3
All Vehicles			1177	1.4	1177	1.4	0.450	17.5	LOS B	4.9	34.0	0.68	0.63	0.68	37.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	54	29.3	LOS C	0.1	0.1	0.92	0.92	196.0	200.0	1.02
East: Yeo Street (E)											

P2	Full	120	29.4	LOS C	0.2	0.2	0.92	0.92	196.1	200.0	1.02
North: Wycombe Road (N)											
P3	Full	139	29.4	LOS C	0.3	0.3	0.92	0.92	196.1	200.0	1.02
West: Yeo Street (W)											
P4	Full	109	29.4	LOS C	0.2	0.2	0.92	0.92	196.1	200.0	1.02
All Pedestrians		422	29.4	LOS C	0.3	0.3	0.92	0.92	196.1	200.0	1.02

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: 101 [Rangers Road - Yeo Street (Site Folder: PM Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	322	0.7	322	0.7	0.336	6.0	LOS A	0.8	5.4	0.38	0.47	0.38	44.2
2	T1	All MCs	129	3.3	129	3.3	0.336	0.0	LOS A	0.8	5.4	0.38	0.47	0.38	44.2
Approach			452	1.4	452	1.4	0.336	4.3	NA	0.8	5.4	0.38	0.47	0.38	44.2
North: Rangers Road (N)															
8	T1	All MCs	26	0.0	26	0.0	0.065	0.0	LOS A	0.1	0.9	0.57	0.63	0.57	44.3
9	R2	All MCs	44	2.4	44	2.4	0.065	9.4	LOS A	0.1	0.9	0.57	0.63	0.57	30.6
Approach			71	1.5	71	1.5	0.065	5.9	NA	0.1	0.9	0.57	0.63	0.57	39.7
West: Yeo Street (W)															
10	L2	All MCs	33	6.5	33	6.5	0.301	8.4	LOS A	0.4	2.9	0.35	0.94	0.36	31.3
12	R2	All MCs	218	0.5	218	0.5	0.301	9.7	LOS A	0.4	2.9	0.35	0.94	0.36	41.3
Approach			251	1.3	251	1.3	0.301	9.6	LOS A	0.4	2.9	0.35	0.94	0.36	40.7
All Vehicles			773	1.4	773	1.4	0.336	6.2	NA	0.8	5.4	0.39	0.64	0.39	42.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: PM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	80	1.3	80	1.3	0.115	23.2	LOS B	1.4	10.0	0.45	0.65	0.45	31.2
3	R2	All MCs	106	5.0	106	5.0	0.138	16.1	LOS B	1.3	9.6	0.32	0.61	0.32	19.6
Approach			186	3.4	186	3.4	0.138	19.1	LOS B	1.4	10.0	0.38	0.62	0.38	26.9
East: Military Road (E)															
4	L2	All MCs	67	18.8	67	18.8	* 0.812	8.6	LOS A	23.5	177.5	0.93	0.87	0.94	8.1
5	T1	All MCs	1939	8.4	1939	8.4	0.812	36.3	LOS C	24.3	182.4	0.93	0.86	0.94	30.2
Approach			2006	8.8	2006	8.8	0.812	35.4	LOS C	24.3	182.4	0.93	0.86	0.94	29.7
West: Military Road (W)															
11	T1	All MCs	2420	5.9	2420	5.9	* 0.943	58.3	LOS E	38.6	283.5	1.00	1.09	1.18	22.8
Approach			2420	5.9	2420	5.9	0.943	58.3	LOS E	38.6	283.5	1.00	1.09	1.18	22.8
All Vehicles			4613	7.0	4613	7.0	0.943	46.8	LOS D	38.6	283.5	0.94	0.97	1.04	25.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	111	67.3	LOS F	0.4	0.4	0.98	0.98	234.0	200.0	0.85
East: Military Road (E)											
P2	Full	424	68.2	LOS F	1.7	1.7	1.00	1.00	234.9	200.0	0.85
West: Military Road (W)											
P4	Full	155	67.5	LOS F	0.6	0.6	0.98	0.98	234.1	200.0	0.85
All Pedestrians		689	67.9	LOS F	1.7	1.7	0.99	0.99	234.6	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: PM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	140	6.0	140	6.0	0.222	8.9	LOS A	0.3	2.4	0.57	0.80	0.58	29.1
Approach			140	6.0	140	6.0	0.222	8.9	LOS A	0.3	2.4	0.57	0.80	0.58	29.1
East: Military Road (E)															
4	L2	All MCs	68	1.5	68	1.5	0.360	5.7	LOS A	0.0	0.0	0.00	0.06	0.00	58.6
5	T1	All MCs	1866	9.0	1866	9.0	0.360	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.4
Approach			1935	8.7	1935	8.7	0.360	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.4
West: Military Road (W)															
11	T1	All MCs	2382	6.1	2382	6.1	0.432	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			2382	6.1	2382	6.1	0.432	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles			4457	7.2	4457	7.2	0.432	0.4	NA	0.3	2.4	0.02	0.03	0.02	58.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: PM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	109	0.0	109	0.0	0.422	60.1	LOS E	5.4	37.8	0.93	0.79	0.93	27.5
2	T1	All MCs	111	1.9	111	1.9	0.422	52.3	LOS D	5.4	37.8	0.93	0.78	0.93	19.7
3	R2	All MCs	52	0.0	52	0.0	* 0.422	63.0	LOS E	4.8	33.7	0.93	0.77	0.93	19.8
Approach			272	0.8	272	0.8	0.422	57.5	LOS E	5.4	37.8	0.93	0.78	0.93	23.5
East: Yeo Street (E)															
4	L2	All MCs	67	1.6	67	1.6	0.069	22.4	LOS B	1.2	8.3	0.36	0.56	0.36	39.6
5	T1	All MCs	289	0.4	289	0.4	0.344	20.8	LOS B	6.1	43.0	0.51	0.49	0.51	39.3
6	R2	All MCs	39	2.7	39	2.7	0.344	39.9	LOS C	6.1	43.0	0.52	0.48	0.52	25.8
Approach			396	0.8	396	0.8	0.344	23.0	LOS B	6.1	43.0	0.48	0.50	0.48	38.7
North: Wycombe Road (N)															
7	L2	All MCs	12	9.1	12	9.1	0.061	76.5	LOS F	0.8	5.8	0.98	0.72	0.98	4.3
8	T1	All MCs	44	7.1	44	7.1	0.304	70.8	LOS F	2.8	21.2	1.00	0.78	1.00	19.5
9	R2	All MCs	33	9.7	33	9.7	0.304	85.9	LOS F	2.8	21.2	1.00	0.79	1.00	19.0
Approach			88	8.3	88	8.3	0.304	77.1	LOS F	2.8	21.2	1.00	0.77	1.00	18.0
West: Yeo Street (W)															
10	L2	All MCs	81	3.9	81	3.9	0.086	16.2	LOS B	1.5	10.6	0.37	0.56	0.37	37.9
11	T1	All MCs	289	0.4	289	0.4	0.430	15.0	LOS B	8.4	59.3	0.57	0.59	0.57	34.1
12	R2	All MCs	109	0.0	109	0.0	* 0.430	33.5	LOS C	8.4	59.3	0.59	0.59	0.59	39.4
Approach			480	0.9	480	0.9	0.430	19.4	LOS B	8.4	59.3	0.54	0.58	0.54	36.4
All Vehicles			1236	1.4	1236	1.4	0.430	33.1	LOS C	8.4	59.3	0.64	0.61	0.64	31.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	54	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

East: Yeo Street (E)										
P2 Full	120	64.5	LOS F	0.5	0.5	0.96	0.96	231.1	200.0	0.87
North: Wycombe Road (N)										
P3 Full	139	64.5	LOS F	0.5	0.5	0.96	0.96	231.2	200.0	0.87
West: Yeo Street (W)										
P4 Full	109	64.4	LOS F	0.4	0.4	0.96	0.96	231.1	200.0	0.87
All Pedestrians	422	64.4	LOS F	0.5	0.5	0.96	0.96	231.1	200.0	0.87

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: 101 [Rangers Road - Yeo Street (Site Folder: PM Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [PM Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	332	0.6	332	0.6	0.344	6.0	LOS A	0.8	5.6	0.38	0.47	0.38	44.2
2	T1	All MCs	129	3.3	129	3.3	0.344	0.0	LOS A	0.8	5.6	0.38	0.47	0.38	44.2
Approach			461	1.4	461	1.4	0.344	4.3	NA	0.8	5.6	0.38	0.47	0.38	44.2
North: Rangers Road (N)															
8	T1	All MCs	26	0.0	26	0.0	0.083	0.0	LOS A	0.2	1.1	0.58	0.67	0.58	43.9
9	R2	All MCs	59	1.8	59	1.8	0.083	9.2	LOS A	0.2	1.1	0.58	0.67	0.58	29.7
Approach			85	1.2	85	1.2	0.083	6.3	NA	0.2	1.1	0.58	0.67	0.58	38.2
West: Yeo Street (W)															
10	L2	All MCs	35	6.1	35	6.1	0.321	8.5	LOS A	0.5	3.3	0.38	0.95	0.40	31.0
12	R2	All MCs	227	0.5	227	0.5	0.321	10.0	LOS A	0.5	3.3	0.38	0.95	0.40	41.1
Approach			262	1.2	262	1.2	0.321	9.8	LOS A	0.5	3.3	0.38	0.95	0.40	40.5
All Vehicles			808	1.3	808	1.3	0.344	6.3	NA	0.8	5.6	0.40	0.65	0.41	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: Sat Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	72	0.0	72	0.0	0.225	61.9	LOS E	2.6	18.2	0.90	0.75	0.90	20.4
3	R2	All MCs	111	6.7	111	6.7	0.279	52.3	LOS D	3.8	28.2	0.87	0.77	0.87	5.0
Approach			182	4.0	182	4.0	0.279	56.1	LOS D	3.8	28.2	0.88	0.76	0.88	13.2
East: Military Road (E)															
4	L2	All MCs	102	2.1	102	2.1	*0.153	7.2	LOS A	2.2	15.5	0.41	0.54	0.41	22.8
5	T1	All MCs	2026	3.0	2026	3.0	*0.765	16.3	LOS B	11.1	80.0	0.72	0.67	0.72	41.4
Approach			2128	2.9	2128	2.9	0.765	15.9	LOS B	11.1	80.0	0.71	0.66	0.71	41.1
West: Military Road (W)															
11	T1	All MCs	2231	2.5	2231	2.5	0.582	13.1	LOS A	16.4	117.4	0.59	0.54	0.59	42.2
Approach			2231	2.5	2231	2.5	0.582	13.1	LOS A	16.4	117.4	0.59	0.54	0.59	42.2
All Vehicles			4541	2.8	4541	2.8	0.765	16.1	LOS B	16.4	117.4	0.66	0.61	0.66	39.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	166	67.5	LOS F	0.7	0.7	0.99	0.99	234.2	200.0	0.85
East: Military Road (E)											
P2	Full	491	68.4	LOS F	1.9	1.9	1.00	1.00	235.1	200.0	0.85
West: Military Road (W)											
P4	Full	207	67.6	LOS F	0.8	0.8	0.99	0.99	234.3	200.0	0.85
All Pedestrians		864	68.1	LOS F	1.9	1.9	0.99	0.99	234.7	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: Sat Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	143	0.7	143	0.7	0.226	8.9	LOS A	0.3	2.4	0.58	0.81	0.60	25.7
Approach			143	0.7	143	0.7	0.226	8.9	LOS A	0.3	2.4	0.58	0.81	0.60	25.7
East: Military Road (E)															
4	L2	All MCs	47	0.0	47	0.0	0.358	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	59.0
5	T1	All MCs	1985	3.1	1985	3.1	0.358	0.1	LOS A	15.8	113.5	0.00	0.01	0.00	59.5
Approach			2033	3.0	2033	3.0	0.358	0.2	NA	15.8	113.5	0.00	0.01	0.00	59.5
West: Military Road (W)															
11	T1	All MCs	2259	2.7	2259	2.7	0.397	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			2259	2.7	2259	2.7	0.397	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles			4435	2.8	4435	2.8	0.397	0.4	NA	15.8	113.5	0.02	0.03	0.02	59.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: Sat Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	118	0.0	118	0.0	0.398	32.2	LOS C	2.7	18.8	0.91	0.77	0.91	34.5
2	T1	All MCs	126	3.3	126	3.3	*0.398	25.0	LOS B	2.7	19.6	0.90	0.75	0.90	28.6
3	R2	All MCs	46	0.0	46	0.0	0.398	31.5	LOS C	2.7	19.6	0.89	0.74	0.89	28.9
Approach			291	1.4	291	1.4	0.398	29.0	LOS C	2.7	19.6	0.90	0.76	0.90	31.8
East: Yeo Street (E)															
4	L2	All MCs	65	0.0	65	0.0	0.079	18.0	LOS B	0.8	5.5	0.49	0.61	0.49	39.7
5	T1	All MCs	331	0.0	331	0.0	0.395	14.4	LOS A	4.1	29.0	0.60	0.55	0.60	41.8
6	R2	All MCs	34	0.0	34	0.0	0.395	23.1	LOS B	4.1	29.0	0.61	0.55	0.61	30.0
Approach			429	0.0	429	0.0	0.395	15.6	LOS B	4.1	29.0	0.58	0.56	0.58	41.1
North: Wycombe Road (N)															
7	L2	All MCs	14	0.0	14	0.0	0.043	29.9	LOS C	0.3	1.8	0.83	0.67	0.83	8.2
8	T1	All MCs	33	0.0	33	0.0	0.216	25.2	LOS B	1.1	7.7	0.89	0.71	0.89	29.0
9	R2	All MCs	27	0.0	27	0.0	0.216	35.6	LOS C	1.1	7.7	0.90	0.71	0.90	28.3
Approach			74	0.0	74	0.0	0.216	29.9	LOS C	1.1	7.7	0.88	0.70	0.88	26.7
West: Yeo Street (W)															
10	L2	All MCs	54	3.9	54	3.9	0.090	13.4	LOS A	0.9	6.4	0.51	0.56	0.51	38.7
11	T1	All MCs	288	0.7	288	0.7	0.449	9.4	LOS A	4.7	33.2	0.64	0.62	0.64	37.6
12	R2	All MCs	108	0.0	108	0.0	*0.449	19.2	LOS B	4.7	33.2	0.66	0.63	0.66	41.8
Approach			451	0.9	451	0.9	0.449	12.2	LOS A	4.7	33.2	0.63	0.62	0.63	39.2
All Vehicles			1244	0.7	1244	0.7	0.449	18.3	LOS B	4.7	33.2	0.69	0.63	0.69	36.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	59	29.3	LOS C	0.1	0.1	0.92	0.92	196.0	200.0	1.02
East: Yeo Street (E)											

P2	Full	141	29.4	LOS C	0.3	0.3	0.92	0.92	196.1	200.0	1.02
North: Wycombe Road (N)											
P3	Full	154	29.4	LOS C	0.3	0.3	0.92	0.92	196.1	200.0	1.02
West: Yeo Street (W)											
P4	Full	120	29.4	LOS C	0.2	0.2	0.92	0.92	196.1	200.0	1.02
All Pedestrians		474	29.4	LOS C	0.3	0.3	0.92	0.92	196.1	200.0	1.02

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: 101 [Rangers Road - Yeo Street (Site Folder: Sat Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	374	0.0	374	0.0	0.383	5.9	LOS A	0.9	6.5	0.37	0.45	0.37	44.3
2	T1	All MCs	157	0.7	157	0.7	0.383	0.0	LOS A	0.9	6.5	0.37	0.45	0.37	44.3
Approach			531	0.2	531	0.2	0.383	4.2	NA	0.9	6.5	0.37	0.45	0.37	44.3
North: Rangers Road (N)															
8	T1	All MCs	46	0.0	46	0.0	0.060	0.0	LOS A	0.1	0.9	0.51	0.55	0.51	45.3
9	R2	All MCs	31	0.0	31	0.0	0.060	11.7	LOS A	0.1	0.9	0.51	0.55	0.51	33.2
Approach			77	0.0	77	0.0	0.060	4.7	NA	0.1	0.9	0.51	0.55	0.51	43.5
West: Yeo Street (W)															
10	L2	All MCs	45	0.0	45	0.0	0.381	8.6	LOS A	0.7	4.6	0.41	0.99	0.49	30.2
12	R2	All MCs	255	0.8	255	0.8	0.381	10.8	LOS A	0.7	4.6	0.41	0.99	0.49	40.7
Approach			300	0.7	300	0.7	0.381	10.5	LOS A	0.7	4.6	0.41	0.99	0.49	40.0
All Vehicles			907	0.3	907	0.3	0.383	6.3	NA	0.9	6.5	0.40	0.64	0.42	42.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Military Road - Wycombe Road (Site Folder: Sat Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	80	0.0	80	0.0	0.251	46.3	LOS D	2.2	15.5	0.69	0.70	0.69	24.1
3	R2	All MCs	121	6.1	121	6.1	0.304	30.1	LOS C	2.6	19.2	0.54	0.67	0.54	8.1
Approach			201	3.7	201	3.7	0.304	36.6	LOS C	2.6	19.2	0.60	0.69	0.60	17.9
East: Military Road (E)															
4	L2	All MCs	102	2.1	102	2.1	* 0.153	7.2	LOS A	2.2	15.6	0.41	0.54	0.41	22.8
5	T1	All MCs	2028	3.0	2028	3.0	* 0.766	16.4	LOS B	11.1	80.0	0.73	0.67	0.73	41.3
Approach			2131	2.9	2131	2.9	0.766	15.9	LOS B	11.1	80.0	0.71	0.66	0.71	41.1
West: Military Road (W)															
11	T1	All MCs	2231	2.5	2231	2.5	0.582	13.1	LOS A	16.4	117.4	0.59	0.54	0.59	42.2
Approach			2231	2.5	2231	2.5	0.582	13.1	LOS A	16.4	117.4	0.59	0.54	0.59	42.2
All Vehicles			4562	2.8	4562	2.8	0.766	15.4	LOS B	16.4	117.4	0.64	0.60	0.64	40.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	166	67.5	LOS F	0.7	0.7	0.99	0.99	234.2	200.0	0.85
East: Military Road (E)											
P2	Full	491	68.4	LOS F	1.9	1.9	1.00	1.00	235.1	200.0	0.85
West: Military Road (W)											
P4	Full	207	67.6	LOS F	0.8	0.8	0.99	0.99	234.3	200.0	0.85
All Pedestrians		864	68.1	LOS F	1.9	1.9	0.99	0.99	234.7	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Military Road - Rangers Road (Site Folder: Sat Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	145	0.7	145	0.7	0.226	8.8	LOS A	0.3	2.4	0.58	0.81	0.60	25.8
Approach			145	0.7	145	0.7	0.226	8.8	LOS A	0.3	2.4	0.58	0.81	0.60	25.8
East: Military Road (E)															
4	L2	All MCs	60	0.0	60	0.0	0.361	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	58.8
5	T1	All MCs	1985	3.1	1985	3.1	0.361	0.1	LOS A	15.9	113.9	0.00	0.02	0.00	59.5
Approach			2045	3.0	2045	3.0	0.361	0.3	NA	15.9	113.9	0.00	0.02	0.00	59.4
West: Military Road (W)															
11	T1	All MCs	2267	2.7	2267	2.7	0.398	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			2267	2.7	2267	2.7	0.398	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.7
All Vehicles			4458	2.8	4458	2.8	0.398	0.4	NA	15.9	113.9	0.02	0.03	0.02	59.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Wycombe Road - Yeo Street (Site Folder: Sat Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wycombe Road (S)															
1	L2	All MCs	118	0.0	118	0.0	0.401	56.6	LOS E	5.7	40.3	0.91	0.78	0.91	28.2
2	T1	All MCs	126	3.3	126	3.3	0.401	48.8	LOS D	5.7	40.3	0.91	0.77	0.91	20.5
3	R2	All MCs	55	0.0	55	0.0	* 0.401	59.3	LOS E	5.1	36.3	0.91	0.76	0.91	20.6
Approach			299	1.4	299	1.4	0.401	53.8	LOS D	5.7	40.3	0.91	0.77	0.91	24.2
East: Yeo Street (E)															
4	L2	All MCs	69	0.0	69	0.0	0.079	23.9	LOS B	1.4	10.1	0.39	0.55	0.39	38.9
5	T1	All MCs	339	0.0	339	0.0	0.396	20.9	LOS B	7.1	50.0	0.50	0.50	0.50	39.7
6	R2	All MCs	53	0.0	53	0.0	* 0.396	31.2	LOS C	7.1	50.0	0.51	0.49	0.51	26.4
Approach			461	0.0	461	0.0	0.396	22.5	LOS B	7.1	50.0	0.49	0.51	0.49	38.8
North: Wycombe Road (N)															
7	L2	All MCs	14	0.0	14	0.0	0.041	57.7	LOS E	0.6	4.2	0.93	0.70	0.93	4.5
8	T1	All MCs	33	0.0	33	0.0	0.204	52.7	LOS D	2.2	15.6	0.95	0.75	0.95	20.5
9	R2	All MCs	27	0.0	27	0.0	0.204	67.7	LOS E	2.2	15.6	0.95	0.75	0.95	20.1
Approach			74	0.0	74	0.0	0.204	59.2	LOS E	2.2	15.6	0.95	0.74	0.95	18.4
West: Yeo Street (W)															
10	L2	All MCs	54	3.9	54	3.9	0.283	17.1	LOS B	6.1	43.1	0.45	0.44	0.45	38.4
11	T1	All MCs	301	0.7	301	0.7	0.283	10.4	LOS A	6.1	43.1	0.45	0.44	0.45	38.4
12	R2	All MCs	108	0.0	108	0.0	0.191	20.0	LOS B	2.2	15.2	0.51	0.69	0.51	38.5
Approach			463	0.9	463	0.9	0.283	13.4	LOS A	6.1	43.1	0.47	0.50	0.47	38.4
All Vehicles			1297	0.6	1297	0.6	0.401	28.6	LOS C	7.1	50.0	0.60	0.58	0.60	32.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wycombe Road (S)											
P1	Full	59	64.3	LOS F	0.2	0.2	0.96	0.96	231.0	200.0	0.87

East: Yeo Street (E)										
P2	Full	141	64.5	LOS F	0.5	0.5	0.96	0.96	231.2	200.0	0.87
North: Wycombe Road (N)										
P3	Full	154	64.5	LOS F	0.6	0.6	0.96	0.96	231.2	200.0	0.87
West: Yeo Street (W)										
P4	Full	120	64.5	LOS F	0.5	0.5	0.96	0.96	231.1	200.0	0.87
All Pedestrians		474	64.5	LOS F	0.6	0.6	0.96	0.96	231.1	200.0	0.87

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: 101 [Rangers Road - Yeo Street (Site Folder: Sat Existing + Proposal)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [Sat Existing + Proposal (Network Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Rangers Road (S)															
1	L2	All MCs	383	0.0	383	0.0	0.390	5.9	LOS A	0.9	6.6	0.37	0.45	0.37	44.3
2	T1	All MCs	157	0.7	157	0.7	0.390	0.0	LOS A	0.9	6.6	0.37	0.45	0.37	44.3
Approach			540	0.2	540	0.2	0.390	4.2	NA	0.9	6.6	0.37	0.45	0.37	44.3
North: Rangers Road (N)															
8	T1	All MCs	46	0.0	46	0.0	0.077	0.0	LOS A	0.2	1.1	0.56	0.61	0.56	44.7
9	R2	All MCs	43	0.0	43	0.0	0.077	11.2	LOS A	0.2	1.1	0.56	0.61	0.56	31.5
Approach			89	0.0	89	0.0	0.077	5.4	NA	0.2	1.1	0.56	0.61	0.56	41.9
West: Yeo Street (W)															
10	L2	All MCs	47	0.0	47	0.0	0.401	8.8	LOS A	0.7	5.3	0.45	1.00	0.55	29.9
12	R2	All MCs	263	0.8	263	0.8	0.401	11.2	LOS A	0.7	5.3	0.45	1.00	0.55	40.5
Approach			311	0.7	311	0.7	0.401	10.8	LOS A	0.7	5.3	0.45	1.00	0.55	39.8
All Vehicles			940	0.3	940	0.3	0.401	6.5	NA	0.9	6.6	0.41	0.65	0.45	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

JMT Consulting
PO Box 199
Kingsford NSW 2032
www.jmtconsulting.com.au

Department of Planning, Housing and Infrastructure

5 September 2024

Dear Sir/Madam

Planning Proposal - 1-7 Rangers Road and 50 Yeo Street, Neutral Bay | TfNSW Response

JMT Consulting has prepared this document in response to correspondence received from Transport for NSW (TfNSW) dated 4 September 2024 in relation to the Planning Proposal for the site at 1-7 Rangers Road and 50 Yeo Street, Neutral Bay. This document provides a series of responses (indicated in red) to each of the items raised in the TfNSW letter (as provided in Appendix A of this document).

Issues to confirm in the revised transport assessment prior to approval of Planning Proposal:

- Please confirm Table 2 is referring to 5pm - 6pm as PM peak, not 8am - 9am

Correct

- Please confirm Table 4 is referring to PM peak and not AM peak (as per the table caption)

Correct

- Please confirm Table 2 is referring to 5pm - 6pm as PM peak, not 8am - 9am

Correct

For attention at the DA stage:

- Bicycle parking and end of trip facilities are to be detailed as part of a subsequent DA for the site;

Noted, the details of bike parking and end of trip facilities are to be included as part of a subsequent DA

- A Green Travel Plan will be prepared as part of a subsequent DA for the site;

Noted, a preliminary Green Travel Plan will be prepared for the DA submission, with a more detailed Green Travel Plan to be finalised prior to the initial occupation of the building.

- The part time bus stop on Rangers Road fronting the site will not be impacted by the proposal and will be retained;

The project does not propose to impact or alter the operation of the part time bus stop on Rangers Road. Any temporary impacts due to construction would be discussed in advance with TfNSW.

- Buses will be able to continue to safely operate along Yeo St and Rangers Road to access the Bus Zone in Rangers Road;

Noted

- Parking controls for the site are proposed to be consistent with rates noted in the current North Sydney DCP, with the final number of spaces to be confirmed as part of a subsequent DA for the site;

Noted – parking rates to be adopted as part of a future DA will be consistent with the rates outlined in the current North Sydney DCP

- No vehicular access / egress to or from the site is proposed to be provided from Military Road or Rangers Road;

The proposal does not include any vehicle access from either Military Road or Rangers Road, with all vehicles to enter and exit the site via either Yeo Street or Military Lane.

- Swept path analysis to be undertaken as part of a subsequent DA for the site. Required to show the entry and exit of vehicles from the proposed development, including larger construction vehicles accessing the site from all entry points.

The traffic report supporting the DA submission will include entry and exit swept paths of the largest vehicle expected to access the site during operation as well as vehicles accessing the basement car park. Swept paths of construction vehicles will be provided as part of a future detailed CTMP, to be prepared prior to the commencement of construction, given the swept paths, vehicle types and construction methodology will need to be confirmed following the appointment of the Contractor.

- A Construction Traffic Management Plan (CTMP) to be prepared prior to the commencement of works and include detailed plans for mitigating the impact of construction traffic on local roads. This should include potential detours, timing restrictions to avoid peak periods, and communication with residents and businesses.

Noted, a detailed CTMP is to be prepared prior to the commencement of works and following the appointment of a Contractor.

2. **For information prior to the DA stage:**

- North Sydney Council has proposed an upgrade to the pedestrian crossing at the intersection of Rangers Road and Yeo Street for the upcoming financial year under the Safer Roads Program. The project is currently under review with CRS.

Noted – no impact expected to the project.

- Military Road is not designated as a heavy vehicle route (19m B-double). Service and single-unit vehicles must be tested for compliance.

Noted – however no B-Doubles or semi-trailers will be accessing the subject site. The traffic report supporting the DA submission will include swept paths of rigid trucks entering and exiting the site loading dock via Military Lane.

Please do not hesitate to contact the undersigned should you have any questions in relation to this advice.

Regards

Josh Milston

Director | JMT Consulting

MIEAust CPEng

Appendix A: TfNSW Correspondence

Transport for NSW

4 September 2024

TfNSW Reference: SYD24-00895/02
Planning Proposal: PP-2022-4350

Mr Tim Coorey
Department of Planning, Housing and Infrastructure
Level 31, 4PSQ,
12 Darcy Street
PARRAMATTA NSW 2150

RE: PLANNING PROPOSAL - 1-7 Rangers Road and 50 Yeo Street, Neutral Bay – Revised Transport Assessment

Dear Mr Coorey,

Transport for NSW (TfNSW) appreciates the opportunity to provide comment on the above Planning Proposal including a revised Transport Assessment (JMT Consulting) forwarded to us on 25 July 2024. We also note that the Proponent (Woolworths Group) has advised that the 88 public car parking spaces originally included in the proposal have been removed.

TfNSW has reviewed the revised assessment and generally accepts that it addresses the issues of our previous submission dated 26 June 2024, or proposes how these matters will be addressed as part of any future Development Application (DA) for the site. Notwithstanding, TfNSW requests that the advice provided in **Attachment 'A'** is considered by the Department in the finalisation of the Planning Proposal.

For any further enquiries, please contact Stephen Briant – Land Use Planner on mobile 0414 949 990 or email: development.sydney@transport.nsw.gov.au

Yours sincerely,

Carina Gregory
Senior Manager Strategic Land Use – Eastern
Planning & Programs, Greater Sydney Division

Attachment A – TfNSW Comments on Planning Proposal PP-2022-4350 (September 2024)

1. Issues to confirm in the revised transport assessment prior to approval of Planning Proposal:

    - Please confirm Table 2 is referring to 5pm - 6pm as PM peak, not 8am - 9am
    - Please confirm Table 4 is referring to PM peak and not AM peak (as per the table caption)
    - Please confirm Table 2 is referring to 5pm - 6pm as PM peak, not 8am - 9am

2. For attention at the DA stage:

    - Bicycle parking and end of trip facilities are to be detailed as part of a subsequent DA for the site;
    - A Green Travel Plan will be prepared as part of a subsequent DA for the site;
    - The part time bus stop on Rangers Road fronting the site will not be impacted by the proposal and will be retained;
    - Buses will be able to continue to safely operate along Yeo St and Rangers Road to access the Bus Zone in Rangers Road;
    - Parking controls for the site are proposed to be consistent with rates noted in the current North Sydney DCP, with the final number of spaces to be confirmed as part of a subsequent
    - DA for the site;
    - No vehicular access / egress to or from the site is proposed to be provided from Military Road or Rangers Road;
    - Swept path analysis to be undertaken as part of a subsequent DA for the site. Required to show the entry and exit of vehicles from the proposed development, including larger construction vehicles accessing the site from all entry points.
    - A Construction Traffic Management Plan (CTMP) to be prepared prior to the commencement of works and include detailed plans for mitigating the impact of construction traffic on local roads. This should include potential detours, timing restrictions to avoid peak periods, and communication with residents and businesses.

3. For information prior to the DA stage:

    - North Sydney Council has proposed an upgrade to the pedestrian crossing at the intersection of Rangers Road and Yeo Street for the upcoming financial year under the Safer Roads Program. The project is currently under review with CRS.
    - Military Road is not designated as a heavy vehicle route (19m B-double). Service and single-unit vehicles must be tested for compliance.

Alexander Galea
Manager, Planning Proposal Authority Planning, Land Use Strategy, Housing and Infrastructure
Department of Planning, Housing and Infrastructure

18 June 2024

Dear Mr Galea,

Re: Fabcot (Woolworths Group) Planning Proposal (PP/1/2023)

I am writing to inform you regarding the Planning Proposal for Rangers Road, Neutral Bay. The proposal previously included the provision of 88 public car spaces. We wish to advise that these spaces have been removed from the Planning Proposal. It is understood that the proposed removal of the carpark will have negligible impacts to the Planning proposal being finalised and gazetted.

The site-specific Planning Proposal (PP/1/2023) was formally lodged with North Sydney Council on 11 January 2023. The proposal introduced a new non-residential floor space ratio (FSR) and amended the height controls to facilitate a future mixed use development with a subterranean, full-line supermarket. Following lodgement with Council, the application proceeded to a Rezoning Review where the Sydney North Regional Planning Panel resolved to support the application to Gateway Determination on 14 December 2023. The Planning Proposal received Gateway Determination from DPHI on 22 March 2023.

The development will deliver much-needed housing supply, alongside the provision of employment floor space, including a new upgraded full line supermarket that will service the local Neutral Bay community. Importantly, significant public benefits will be delivered, including improved accessibility through a new public plaza and a new north-south through-site link connecting Rangers Road and Military Road.

If you would like to discuss this further, please do not hesitate to contact me at 0438 372 207 or pabrahamse@woolworths.com.au.

Yours sincerely,

Pierre Abrahamse
General Manager Mixed Use
Woolworths Group

5th April 2024

Brendan Metcalfe
Director Metro North
Department of Planning, Housing and Infrastructure
4 Parramatta Square, 12 Darcy Street
Parramatta NSW 2150

Dear Brendan,

Gateway Determination conditions for 1 – 7 Rangers Road and 50 Yeo Street Planning Proposal (PP-2022 – 4350)

On 22 March 2024, you as delegate of the Minister for Planning and Public Spaces determined that a proposal (PP-2022 – 4350) to amend the North Sydney Local Environmental Plan 2013 to increase the maximum height of buildings and increase the minimum non-residential floorspace ratio should proceed to public exhibition subject to conditions.This letter has been submitted in response to these Gateway Conditions.

1.0 Gateway Conditions 1(b),1(c), 1(d) and 1(e)

The Gateway conditions 1(b),1(c), 1(d) and 1(e) to update the Planning Proposal report to address the SEPP (Resilience and Hazards) 2021, SEPP (Sustainable Buildings) 2022, SEPP (Housing) 2021 as it relates to Chapter 4 as well as an update to the Gateway Determination timeline has been completed and forms part of the final Planning Proposal package to proceed to community consultation.

2.0 Response to Gateway Condition 1(a)

As noted above, the majority of Gateway Conditions have been satisfied and incorporated into the final Planning Proposal package. However, we request that you as the Delegate of the Minister for Planning and Public Spaces consider condition 1(a) within the context of the public value that is agreed will be delivered as a part of the project, the extensive planning process to date that has resulted in multiple design changes and the impact of this Condition on the project's feasibility.

Public benefit

The Planning Proposal's scheme has been purposefully designed to facilitate the delivery of a new 1,100m2 publicly accessible space that directly aligns with the key benefits required for the site under the superseded Military Road Corridor Planning Strategy as well as the draft Neutral Bay Village Planning Study. This is in addition to the offer to provide public car parking to service the broader town centre, a need identified in the Military Road Corridor Planning Strategy.

To date there has been a lengthy planning process to enable the site's future development, which has included the lodgement of two (2) Planning Proposals and two (2) Rezoning Review applications. Throughout the process, the need to provide affordable housing as part of the proposal's public benefit contribution was not raised by the relevant authorities. It is important to note that we have provided affordable housing as part of other proposals where a clear local affordable housing policy and Council requirement was present from inception.

In the context of the considerable public benefit being delivered as part of the current proposal, the inclusion of an additional affordable housing requirement will further undermine the project's feasibility, which has already become marginal due to the significant compromises made throughout the planning process.

Project Feasibility

To date, the Planning Proposal has gone through significant design development to respond to feedback raised by the community, Council and the Planning Panel. We have undertaken extensive community consultation on our plans, including speaking directly with over 110 community members at in person engagement opportunities, engaged with over 30 local businesses, undertaken sentiment research and reached over 25,000 members of the community through online and print communication channels to ensure the proposal appropriately responds to the site's context, constraints and opportunities. These changes have included:

- an overall reduction in height;
- a reduction in floor to floor ceiling heights,
- changes to massing,
- increased setbacks and mechanisms to increase articulation and modulation;
- removal of ground floor retail, and
- expansion of the public plaza.

These changes have resulted in the loss of floorspace and a reduction in the apartment yield. Despite making these compromises, we have at the same time responded to requests by Council and the Planning Panel to maintain the amount of non-residential floorspace in the project, and increased the size of the public plaza from 1,000m2 to 1,100m2.

All of the above design amendments have therefore unavoidably had a significant material impact on the project's feasibility. The additional inclusion of an affordable housing component that could not be built into the project's feasibility from inception will further impact the project's viability to such an extent that maintaining the current building on site presents a more viable commercial option (from a business point of view) than pursuing the proposal. Indeed, a scenario that involves undertaking straight forward upgrades and additions to the existing building is a genuinely viable alternative as it minimises any interruption to ongoing trading on the site, which is our core business.

It's worth highlighting that *The Neutral Bay Town Centre Economic analysis and Financial Feasibility Assessment* prepared by Hill PDA Report in support of the draft Neutral Bay Village Planning Study modelled the planning and design conditions required to support the feasibility of future development on the site. This analysis was undertaken for Council and is completely independent of the site specific Planning Proposal.

The report concludes the following in relation to the site:

- *At 6 storeys and 1.2:1 Non-res FSR the redevelopment of the site would not be viable given the costs for acquisition with insufficient density.*
- *The modelling shows however that at 8 storeys and 1.5:1 FSR even with the benefits of a Plaza (majority) and Through site links the option would be viable.*

Hill PDA found that any future feasible development on the site required a minimum 8-storeys across the entire site and approximately 87 dwellings. In addition to the design changes outlined above and the existing public value contribution, the current Planning Proposal has 63 dwellings - well below the number modelled by Hill PDA. This analysis undertaken by Hill PDA independently verifies the significant feasibility challenges the project faces.

In this regard, we would ask that Condition 1(a) be considered in the context of the project's planning history, the significant public benefit that it is already delivering for the area, project feasibility and absence of a local affordable housing requirement and/or any dialogue throughout the planning process at a time when it could have been factored into the overall public benefit offer.

It is therefore requested that Gateway Conditions to 1(a) is determined as resolved to enable the Planning Proposal to proceed to the next stage for community consultation. In this regard, in future projects an affordable housing contribution will be more fully considered as part of the project's public benefit contribution at project inception, irrespective of local council policy, enabling it to be built into the project's commercial

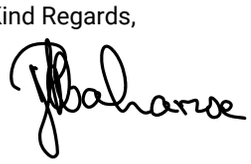
feasibility inline with the State Government's current priorities and the need to deliver a supply of dwellings that cater for households at varying income levels.

3.0 Conclusion

This letter has been submitted in response to the Gateway Conditions received for Planning Proposal (PP-2022 – 4350). The final Planning Proposal scheme represents a high quality-built form outcome that improves the existing amenity of the site and will deliver significant public benefits that will enable a clear step change to the quality, vitality and vibrancy of the Neutral Bay Town Centre and its ability to serve local community needs.

The majority of the conditions have been addressed within the revised Planning Proposal, however Woolworths requests the Delegate of the Minister for Planning and Public Spaces consider Gateway Condition 1(a) resolved in the context of the information contained in this letter. As outlined, several other Fabcot projects accommodate affordable housing where the requirement has been known from the early phases of planning and design and we will commit to continuing to work with local and State governments to support the delivery of diverse housing supply. Overall, we consider that the Planning Proposal in its current form demonstrates both strategic and site-specific merit and satisfies the Gateway Conditions to be able to proceed to community consultation.

Kind Regards,



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