

Proposed Mixed Use Development

**614-632 High Street,
Penrith**

TRAFFIC AND PARKING ASSESSMENT REPORT

1 April 2020

Ref 19363

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1. INTRODUCTION

This report has been prepared to accompany a development application to Council for a mixed use development proposal to be located at 614-632 High Street, Penrith (Figures 1 and 2).

The proposed development involves the construction of a new mixed use development on the vacant site, comprising retail and commercial tenancies on the lower levels, with residential apartments and serviced apartments on the levels above.

Off-street parking is to be provided in an above ground car parking area in accordance with Council and *SEPP 65* requirements, in addition to an on-site loading area. Vehicular access to the car parking and loading facilities is to be provided via Union Lane, in accordance with *Clause 101(2)* of the *State Environmental Planning Policy (Infrastructure) 2007*.

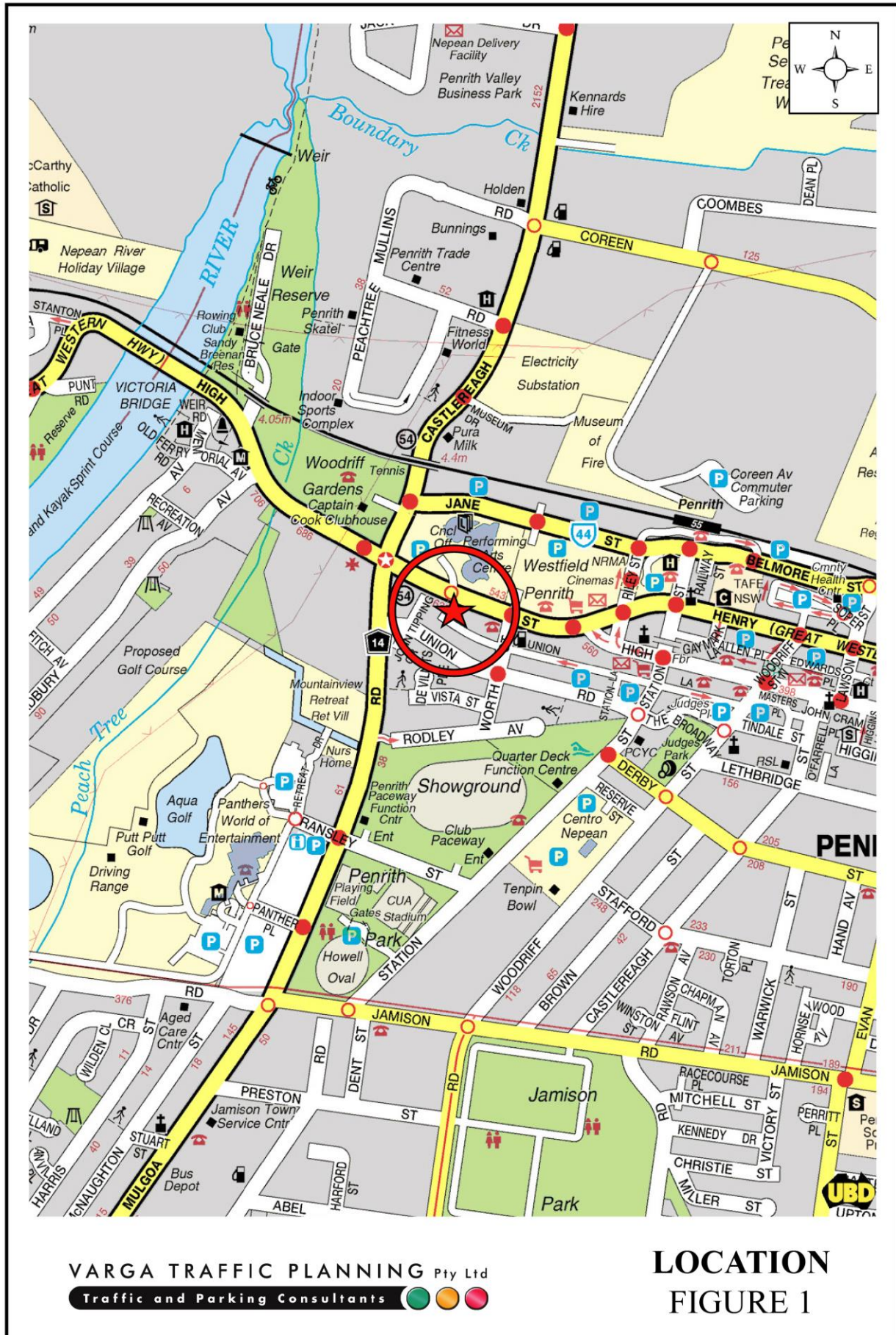
In this regard, the site is subject to land dedication requirements at its western end, as is the approved *TOGA* development adjoining the site. The combined land dedication will allow for the construction of a new local road in the future, extending southward from High Street and connecting to Union Road.

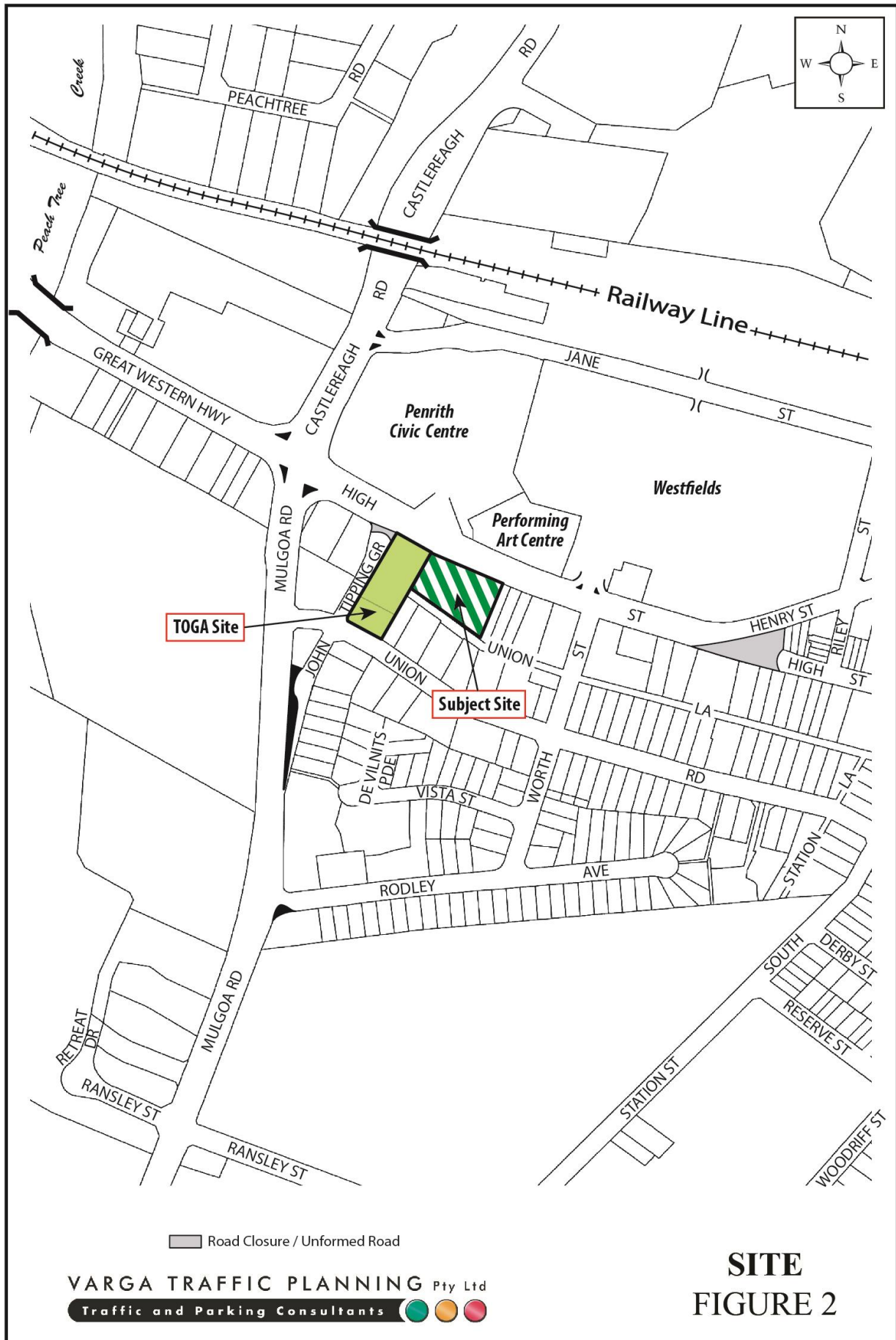
It is noted that the proposed development, with a cumulative total of 313 apartments, is classified as a *Traffic Generating Development* under *Clause 104* of the *State Environmental Planning Policy (Infrastructure) 2007*, thereby requiring referral to the RMS.

In 2018, the NSW Government released a document called '*Greater Sydney Region Plan: A Metropolis of Three Cities*'. This document states that the site is situated within the Western Parkland City and that Greater Penrith is classified as a "Metropolitan Cluster". The Government envisage providing high density residential development in areas located with excellent access to public transport, including within the Penrith CBD, such as the subject site.

The purpose of this report is to assess the traffic and parking implications of the development proposal, including relevant aspects contained within Council's pre-DA notes, and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network, including approved intersection upgrades
- reviews the public transport facilities available in the vicinity of the site
- estimates the traffic generation potential of the development proposal (based on Council's prescribed traffic generation rates as well as the Sydney average traffic generation rates), and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





2. PROPOSED DEVELOPMENT

Site

The subject site is located on the southern side of High Street, directly opposite the Joan Sutherland Performing Arts Centre, extending through to Union Lane. The site has street frontages of approximately 85m in length to High Street, approximately 92m in length to Union Lane and occupies an area of approximately 4,715m². The site is zoned *B4 Mixed Use*, with a permissible FSR of 6.0:1.

The site lies within the Penrith City Centre, towards its western end, and is located approximately 700m walking distance south-west of Penrith Railway Station and Bus Interchange.

The site is currently vacant however was previously occupied by a car dealership and service centre. Vehicular access to the site is provided via a driveway located in the centre of the High Street site frontage as well as three driveways located off the Union Lane site frontage.

A recent aerial image of the site and its surroundings is reproduced below.

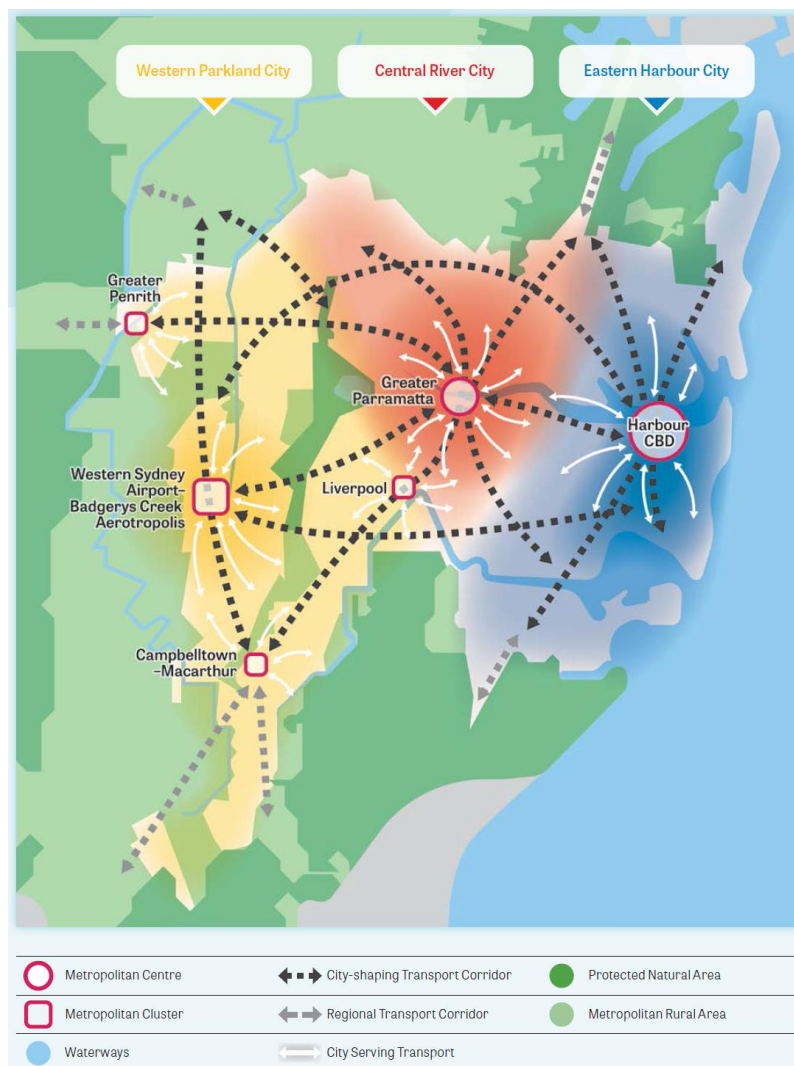


Greater Sydney Region Plan – A Metropolis of Three Cities

In 2018, the NSW Government released a document called *‘Greater Sydney Region Plan: A Metropolis of Three Cities’*. As the population grows, the goal is to rebalance economic and social opportunities across Greater Sydney by dividing Sydney into three core cities to allow residents to live within 30mins of their jobs, education and health facilities, services and other great places.

These three cities include the following:

1. the Western Parkland City
2. the Central River City
3. the Eastern Harbour City



Source: Greater Sydney Region Plan 2018

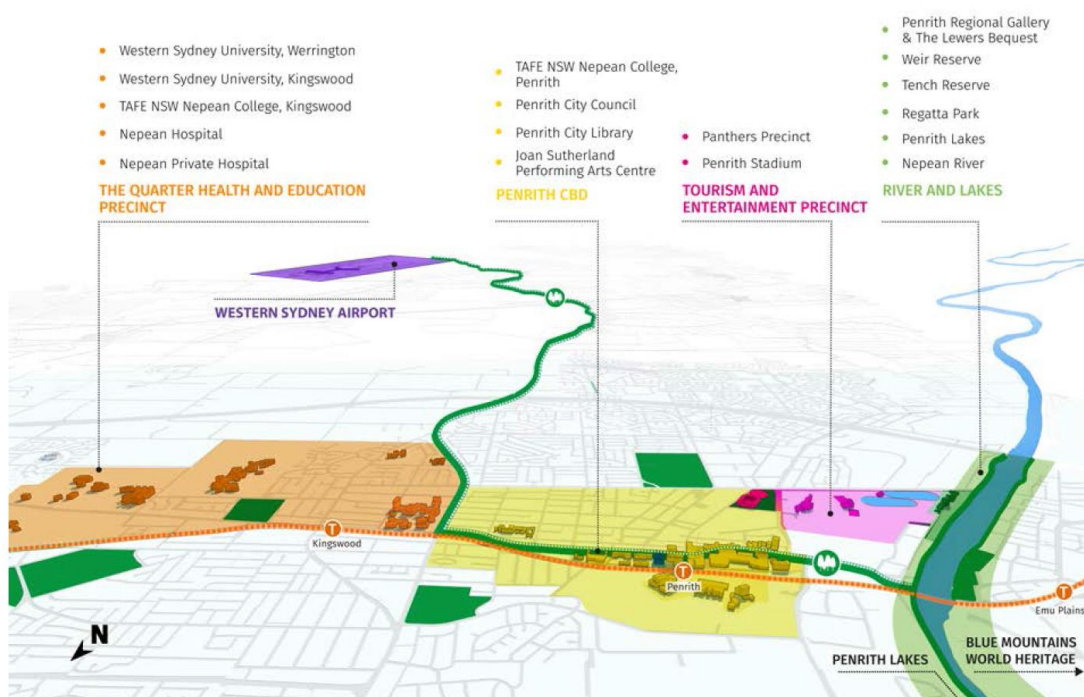
There are four main clusters within the Western Parkland City which includes:

1. Western Sydney Airport and Badgery's Creek Aerotropolis
2. Liverpool
3. Greater Penrith
4. Campbelltown-Macarthur

Each cluster will provide concentrations of higher jobs and a wider range of goods and services for its community by focusing on improving infrastructure and access between these metropolitan clusters through a range of avenues such as sustainable transport.

This document shows that the proposed site is located within the proposed Metropolitan Cluster of Greater Penrith of the Western Parkland City. More specifically, it is located within the proposed Penrith CBD as shown below.

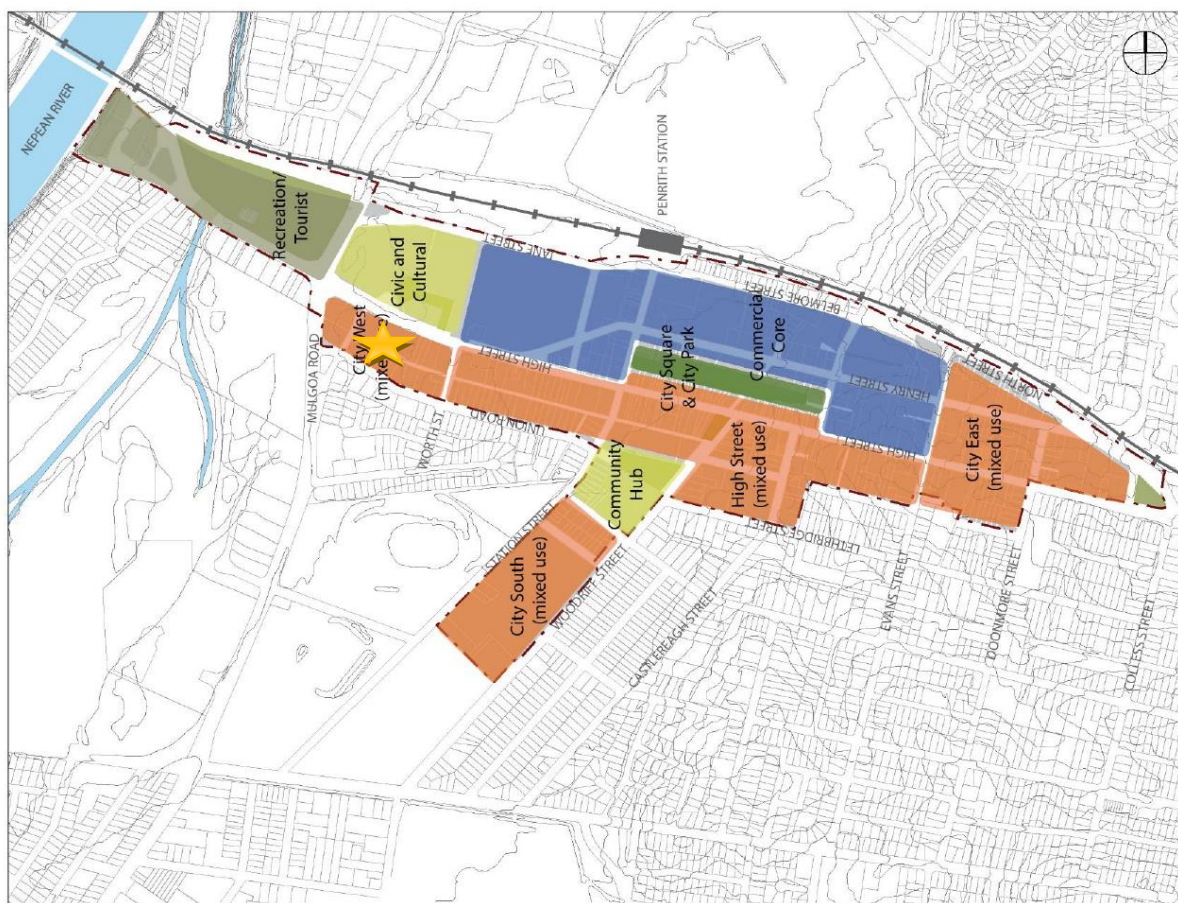
Figure 35: Greater Penrith



Penrith City Centre

The site is also situated within the Penrith City Centre, as defined within Council's *Development Control Plan 2014, Part A: City Centre*. The objectives of the Penrith City Centre include:

- the revitalisation of Penrith City Centre by promoting redevelopment and urban sustainability
- providing mixed use, commercial and residential development within the Town Centre which provides high levels of amenity for occupants
- providing high levels of accessibility within the City Centre, connecting significant activity nodes, public open space and surrounding residential areas
- encouraging the integration of the residential and non-residential land uses and improved access to transport facilities



Source: Penrith DCP 2014, Figure E11.2 Penrith City Centre Character Areas

Infrastructure Upgrades

As mentioned in the foregoing, the RMS is currently upgrading Mulgoa Road in the vicinity of the site, including the High Street signalised intersection. Details of the upgrade works are illustrated on the figure below and include:

- western leg: provide additional right turn lane and through lane on the approach, including retaining the bus priority through lane
- southern leg: provide additional through lane on the approach and departure
- eastern leg: provide additional right turn bay, new bus priority through lane and increased left turn slip lane with pedestrian signals on the approach
- northern leg: provide additional through lane and new left turn slip lane with pedestrian signals on the approach and additional through lane on the departure



Source: RMS

Approved *TOGA* Development

Development consent has been granted on the adjoining site to the west (known as 87-91 Union Road & 634-638 High Street), involving the construction of two new towers above a common podium with a cumulative total of 187 residential apartments and 1,144m² of commercial space.

Off-street parking is approved for a total of 260 parking spaces within a single basement level and two podium levels. Loading facilities will be provided on the ground floor level and shared between the various uses.



Source: www.skyscrapercity.com

As noted in the foregoing, both the subject site and the approved *TOGA* development are subject to land dedication requirements along their common boundary which will allow for the construction of a new local road in the future, extending southward from High Street and connecting to Union Road. Council has also requested that Union Lane ultimately be converted to one-way westbound traffic flow, to match with the existing westbound restriction on Union Lane, east of Worth Street. In the interim, the new road link will connect to High Street at the existing roundabout by way of a new “fourth leg” and restricted to one-way northbound traffic flow only. Eventually the roundabout will be upgraded to traffic signals, including converting the southern one-way northbound leg to two-way traffic flow.

Proposed Development

The proposed development involves the construction of a new mixed use development on the site, comprising retail and commercial space as well as both residential apartments and serviced apartments.

A total of 272 *residential* apartments are proposed in the new development as follows:

1 bedroom apartments:	104
2 bedroom apartments:	134
3 bedroom apartments:	34
TOTAL APARTMENTS:	272

A total of 41 *serviced* apartments are also proposed in the new development, including a number of “dual-key” apartments, as follows:

2 bedroom apartments:	2
2 bedroom “dual key” apartments:	35 (studio + 1 bed)
3 bedroom “dual key” apartments:	4 (2 bed + 1 bed)
TOTAL SERVICED APARTMENTS:	41 (80 “keys”)

The proposed serviced apartments will be operated by a total of 3 staff on site at any one time comprising 1 on-site manager, 1 clerk and 1 contractor to carry out back-of-house works.

In order to achieve the objectives of Council’s future vision for developments located within the Penrith City Centre, the proposed development also includes 727m² of retail space on the ground floor level and 1,373m² of commercial space on Levels 4, 5 & 6.

Off-street parking is to be provided for a total of 338 cars across five above ground levels, in accordance with Council and *SEPP 65* requirements. Vehicular access to the car parking facilities is to be provided via a new entry/exit driveway located off Union Lane.

Loading/servicing is expected to be undertaken by a variety of commercial vehicles ranging from light “tradie” vehicles up to and including 11m long rigid trucks. In this regard, a shared loading area is proposed to be provided on the ground floor level of the building, capable of accommodating an 11m long rigid truck as well as an 8.8m long medium rigid truck.

Vehicular access for service vehicles is to be provided via a new dedicated service driveway located midway along the Union Lane site frontage.

In addition to the land dedication at the western end of the site it is also proposed to provide an at-grade pedestrian site through-link along the eastern boundary line, connecting Union Lane to High Street.

Plans of the proposed development have been prepared by *DKO Architects* and are reproduced in Appendix A.

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

High Street and Henry Street form part of the Great Western Highway which is classified by the RMS as a *State Road*, providing the key east-west road link through the area, linking the City to the Blue Mountains. It typically carries two traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island. Kerbside parking is not permitted on either side of the road in the vicinity of the site.

Mulgoa Road and Castlereagh Road are also classified by the RMS as *State Roads*, providing the key north-south road link in the area, linking Richmond to Wallacia. It typically carries two to three traffic lanes in each direction in the vicinity of the site with turning bays provided at key locations.

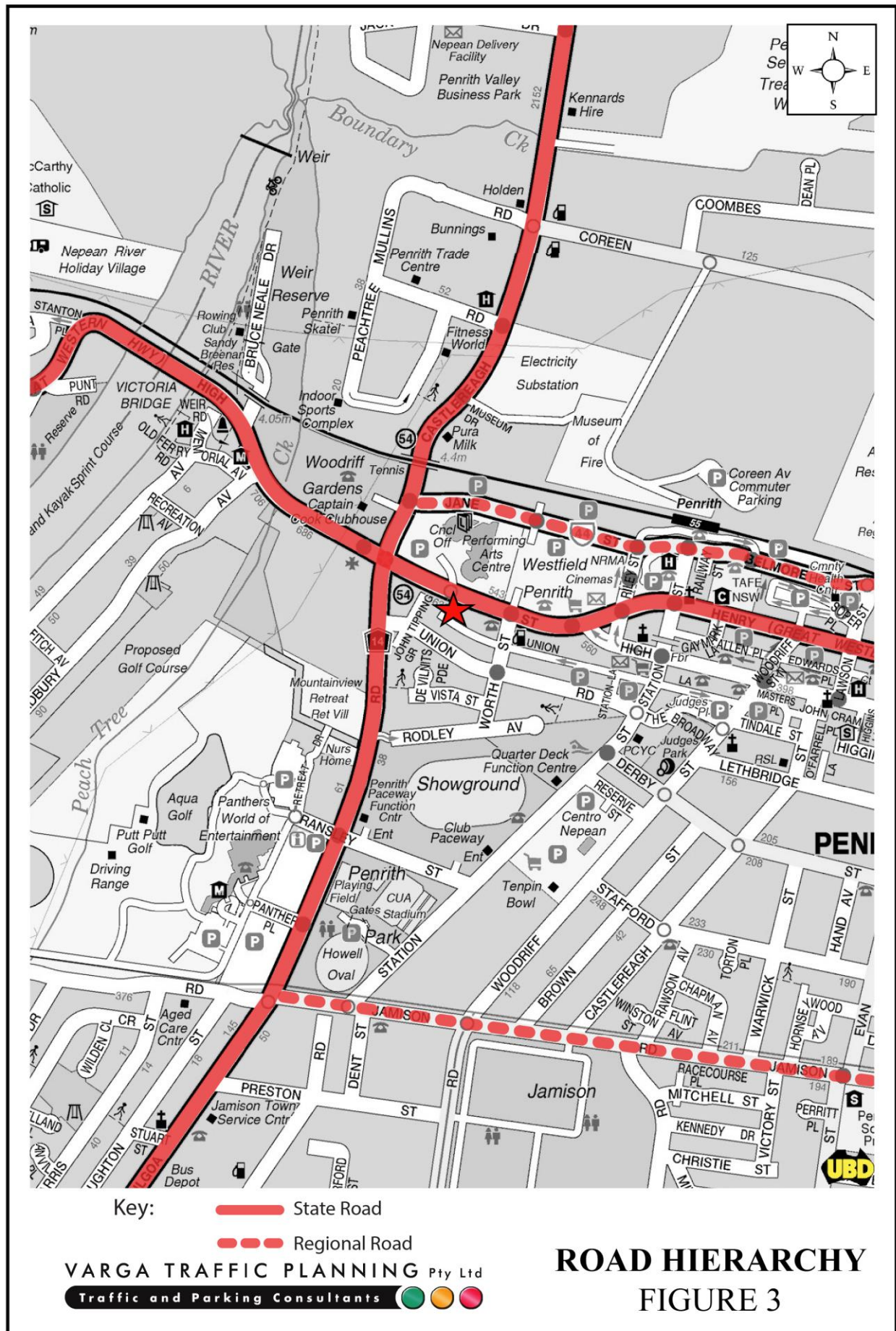
Worth Street is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is permitted at selected locations, subject to sign posted restrictions.

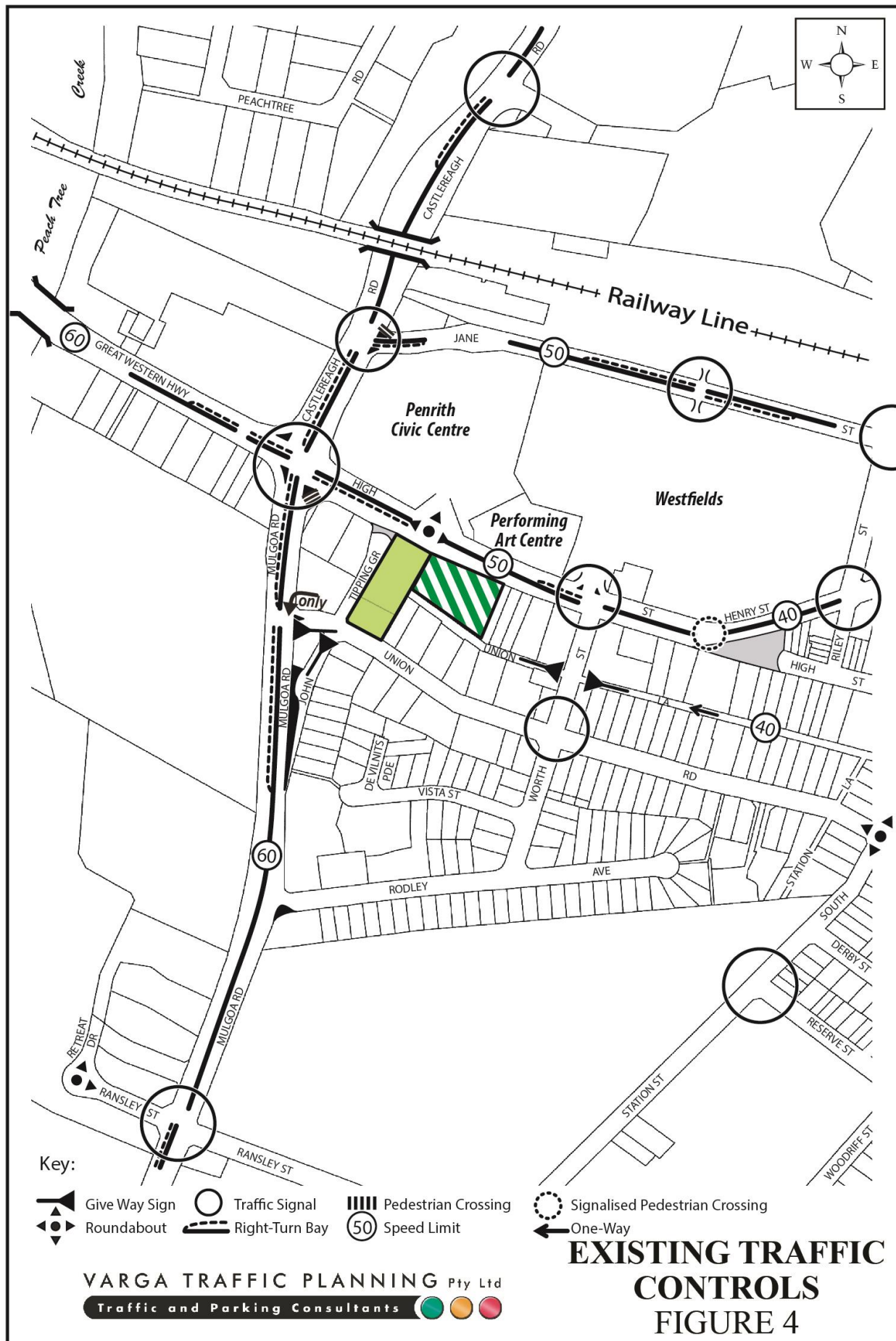
Union Lane is a local, unclassified, 6.0m wide service lane which is primarily used to provide rear vehicular and pedestrian access to properties fronting High Street or Union Road, and currently terminates at the far western end. Kerbside parking is not permitted in the laneway.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to Mulgoa Road and Castlereagh Road





- a 50 km/h SPEED LIMIT which applies to High Street and other local roads in the area
- a 40 km/h SPEED LIMIT which applies to Henry Street
- TRAFFIC SIGNALS in High Street where it intersects with Mulgoa Road/Castlereagh Road and also Worth Street
- TRAFFIC SIGNALS in Worth Street where it intersects with Union Road
- a RIGHT TURN HOLDING BAY in Mulgoa Road for northbound traffic turning onto Union Road
- LEFT TURN ONLY restrictions for westbound traffic on Union Road turning onto Mulgoa Road.

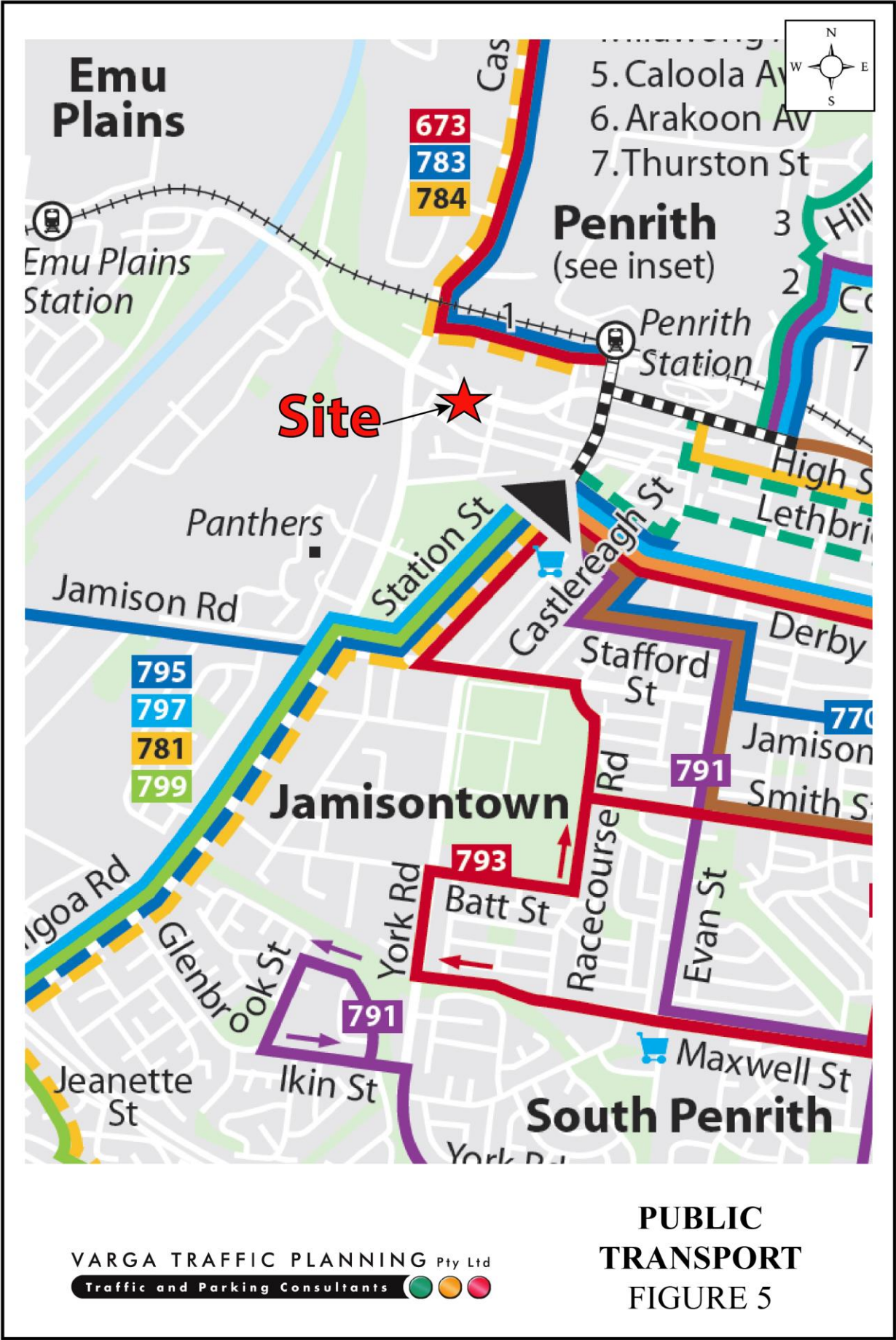
Existing Public Transport Services

The existing public transport services available in the vicinity of the site are illustrated on Figure 5.

The subject site is located approximately 700m walking distance south-west of Penrith Railway Station and Bus Interchange. Penrith Railway Station is situated on the T1 North Shore and Western Line, operating between Emu Plains and Hornsby via Strathfield and the City, and also the Blue Mountains Line, operating between Bathurst and the City. Train services operate out of Penrith Railway Station every 10-15 minutes during peak periods and every 20-30 minutes during off-peak periods.

In addition, Penrith Bus Interchange is serviced by more than 20 services into and out of the local area.

Penrith Westfields Shopping Centre is located approximately 250m walking distance east of the site and includes a wide range of essential shops and services such as Woolworths and ALDI supermarkets, fruit market, butchery, bakery, seafood shop, bottle shop, post office, pharmacy, optometrist, newsagency, hair dresser and beautician.



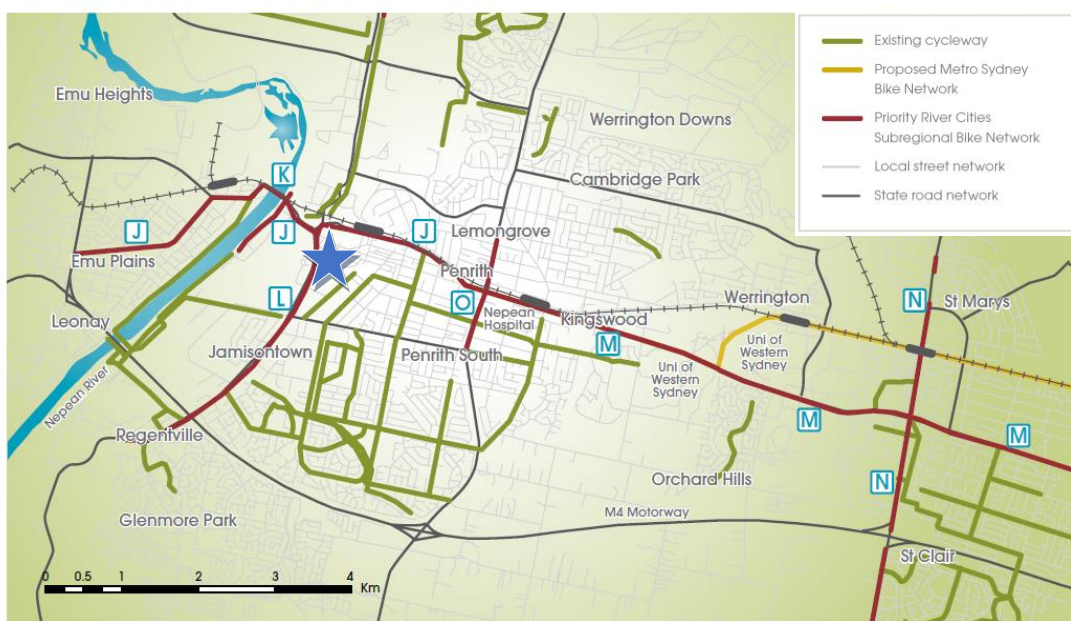
As such, the site is readily accessible by public transport, whilst an extensive range of shops and services are located within easy walking distance. The site is therefore ideally located to encourage reduced private car usage and to encourage alternate forms of transport such as public transport, cycling and walking.

Local Bicycle Routes

The site is conveniently located in close proximity to a number of useful bicycle routes which connect to the wider cycle network including on-road and off-road bicycle routes in the surrounding area. The location of the existing bicycle routes in the vicinity of the site are illustrated on the figure below which is taken from the NSW Government's *BikePlan 2010*. It is noted that Penrith has been chosen as a key location for an increase in employment, infrastructure and cultural activities. In this regard, a new shared path is proposed along the Great Western Highway, west of the City Centre. The priority projects in Penrith include:

- Penrith to Emu Plains
- Victoria Bridge investigations
- Penrith to St Marys – Great Western Highway shared path
- Penrith eastern subregional connections
- Penrith South to Castlereagh

Penrith Subregional Bike Network



Source: NSW BikePlan 2010

Pedestrian Activity

The proposed development will likely result in an increase in pedestrian activity in the vicinity of the site, with the key attractors being the nearby railway station/bus interchange and *Westfields*.

In this regard, the walking map below indicates the likely desire line for pedestrians walking to/from the subject site to the railway station/bus interchange via High Street and Henry Street, then crossing at either the Riley Street or Station Street traffic signals.

Similarly, those pedestrians walking to/from *Westfields* will likely cross at either the High Street/Worth Street traffic signals, the Henry Street/Riley Street traffic signals *or* the signalised pedestrian crossing in between Worth Street and Riley Street.

Given the existing safe pedestrian crossing points to the nearby key attractors, it is considered that no further pedestrian infrastructure upgrades are required as a consequence of the proposed development.



Travel Plan

A Travel Plan is a package of actions designed to encourage safe, healthy and sustainable travel options. The objectives of a Travel Plan are to remove barriers to active travel for all users of developments and to maximize the number of people who walk, cycle or take public transport to and from the development.

A Travel Plan can be prepared in consultation with future employees. In this instance however, it is difficult to predict the future travel patterns of prospective employees. However, a key feature of the Travel Plan will include a plan detailing the location of all public transport services as well as key facilities such as banks, post office etc. located within a 5 minutes and 10 minutes walking radius of the site. In this regard, it is noted that Penrith Railway Station is located an ideal 700m walking distance south-west of the site, which a large proportion of future employees working within the subject building are likely to utilise for their weekday trips to/from work.

Existing Traffic Conditions

A detailed indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken as part of this traffic study which are reproduced in Appendix B. The traffic surveys were undertaken at the following intersections on Thursday 13th February 2020:

- High Street, Worth Street & *Westfields* access (traffic signals)
- Worth Street & Union Lane (give way priority controlled)
- Union Road and Worth Street (traffic signals)

The results of the traffic surveys are summarised in the diagrams on the following page, with the existing weekday AM and PM network peak “hour” as follows:

- the AM “network” peak period occurred between 8:30am and 9:30am
- the PM “network” peak period occurred between 4:30pm and 5:30pm

Penrith IC - Traffic Flows



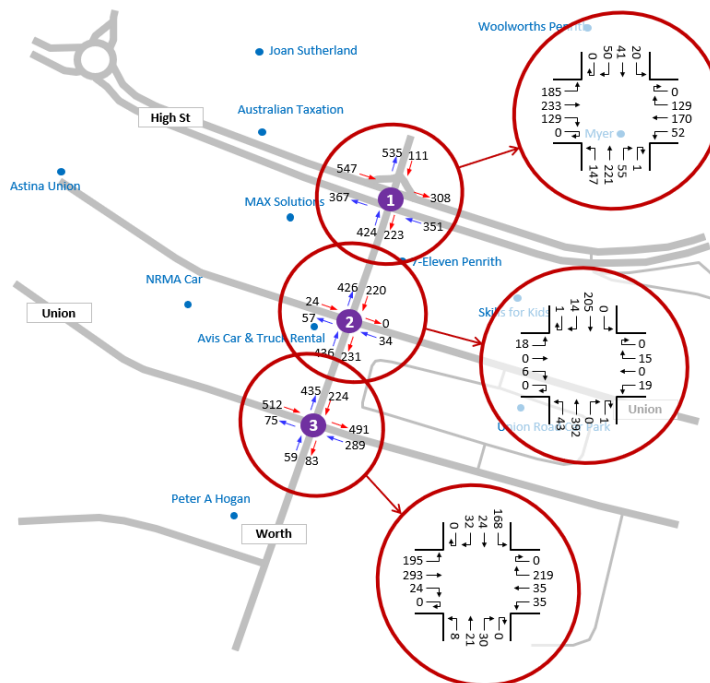
Search By Time and Classification

Day: AM Start Time: 8:30 End Time: 9:30 Classification: All vehicles

Volume Forecasting

0% * 0 = original survey data
(e.g. Input 20 for volume increase 20% or -20 for volume decrease 20%)

1 Site No.



Penrith IC - Traffic Flows



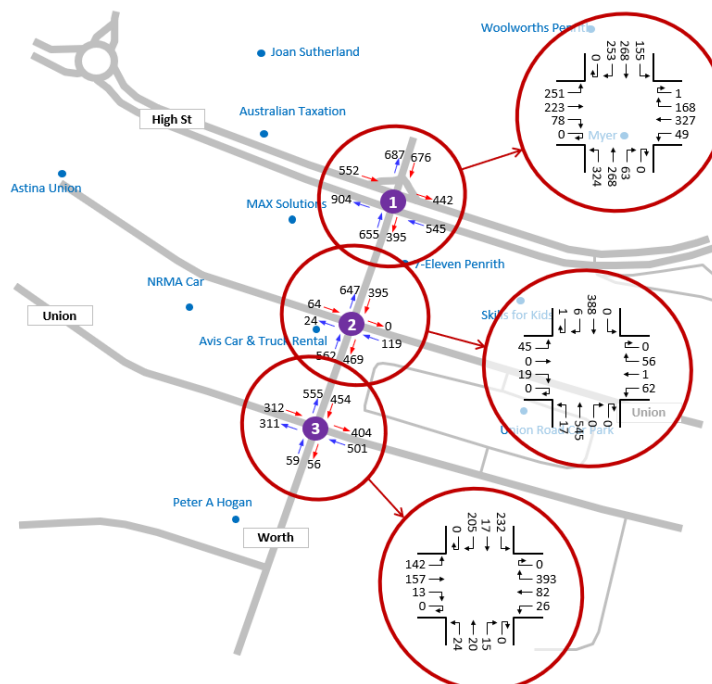
Search By Time and Classification

Day: PM Start Time: 16:30 End Time: 17:30 Classification: All vehicles

Volume Forecasting

0% * 0 = original survey data
(e.g. Input 20 for volume increase 20% or -20 for volume decrease 20%)

1 Site No.



Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* and the updated traffic generation rates in the recently published RMS *Technical Direction* (TDT 2013/04a) document.

The TDT 2013/04a document specifies that it replaces those sections of the RMS *Guidelines* indicated, and must be followed when RMS is undertaken trip generation and/or parking demand assessments.

The RMS *Guidelines* and the updated TDT 2013/04a are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

Office Blocks (Sydney Average)

AM: 1.6 peak hour vehicle trips per 100m² GFA
PM: 1.2 peak hour vehicle trips per 100m² GFA

High Density Residential Flat Dwellings (Sydney Average)

AM: 0.19 peak hour vehicle trips/unit
PM: 0.15 peak hour vehicle trips/unit

The RMS *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

Neither the RMS *Guidelines*, nor their TDT 2013/04a specify a traffic generation rate for serviced apartments, referring only to hotels and motels. As serviced apartments share similar characteristics as regular apartments, in that most people leave the apartment in the morning (for business or leisure) and arrive back in the afternoon, for the purposes of this assessment, the abovementioned high density residential traffic generation rates have also been applied to the proposed serviced apartment component of the development.

Furthermore, the RMS *Guidelines* do not nominate a traffic generation rate for small, local shops or businesses, referring only to major regional shopping centres incorporating supermarkets and department stores. For the purpose of this assessment therefore, the above traffic generation rates nominated in the TDT 2013/04a for *office blocks* has been adopted in respect of the retail component of the development proposal.

Notwithstanding, discussions with Council have indicated that the traffic generation rate for the residential component should be *0.33 peak hour vehicle trips per dwelling* in accordance with the Penrith CBD Transport Model, as it is more closely aligned with the existing modal splits of the LGA.

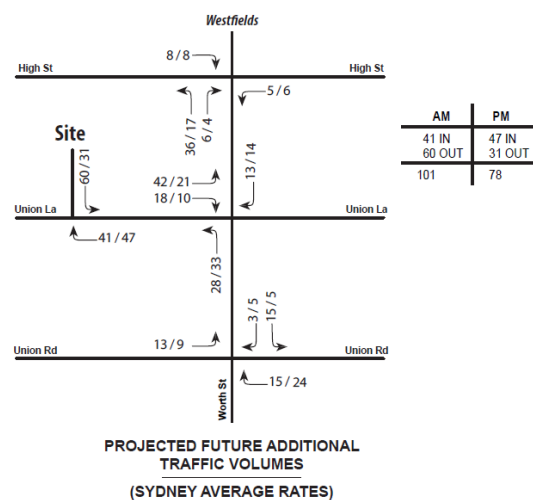
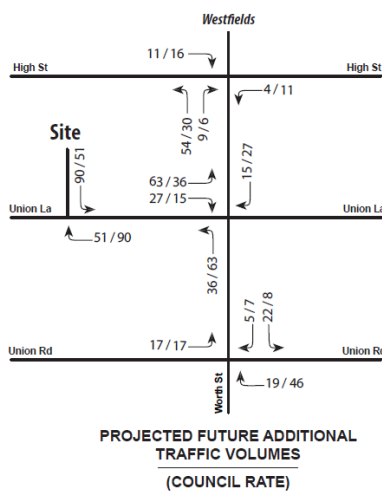
It is pertinent to note in this regard that reference to a number of other development applications for projects in close proximity to (or within) the Penrith City Centre and their associated traffic and parking assessment reports, did *not* adopt the above *0.33 peak hour vehicle trips per dwelling* rate but rather the Sydney average rate.

Furthermore, the '*Greater Sydney Region Plan: A Metropolis of Three Cities*' document envisages Penrith as a future CBD centre. The goal of the NSW Government is ultimately to allow residents to live within 30mins of their jobs, education and health facilities, services and other great places, including jobs within the Penrith City Centre. As such, it is expected that the *actual* traffic generation potential of the residential component of the DA will be in line with the current Sydney average rates or potentially *even less*.

In any event, both scenarios have been assessed as set out in the table on the following page.

Projected Future Traffic Generation Potential				
	Council rate for residential		RMS Sydney average rates for residential	
	AM	PM	AM	PM
Residential apartments (272 units)	90 vph	90 vph	52 vph	41 vph
Serviced apartments (80 “keys”)	26 vph	26 vph	15 vph	12 vph
Commercial suites (1,373m ²)	22 vph	16 vph	22 vph	16 vph
Retail shops (727m ²)	12 vph	9 vph	12 vph	9 vph
TOTAL TRAFFIC GENERATION POTENTIAL	141 vph	141 vph	101 vph	78 vph

The distribution of the projected future traffic volumes for both are summarised on the figures below.



Furthermore, in order to ensure future capacity of the surrounding intersections, 10 year growth projections scenarios have also been assessed using a 2% p.a. growth rate, as requested by Council. Typically, growth rates are applied to the through movements along the main road only, however in this instance, *all* movements have been factored up by 2% p.a. to provide an even more rigorous assessment.

That projected increase in the traffic generation potential of the site as a consequence of the development proposal will not have any unacceptable traffic implications in terms of road network capacity, nor will any infrastructure upgrades be required, as is demonstrated by the following section of this report.

Traffic Implications - Road Network Capacity

The traffic implications of Planning Proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA INTERSECTION 8 NETWORK program which is widely used by the RMS and many LGA's for this purpose.

It is pertinent to note that the existing "base case" network traffic model, i.e. the base model that all future scenarios are built upon, has been reviewed by Council, including the model set-up and peak periods, and deemed acceptable.

SIDRA movement summaries and intersection layouts are reproduced in Appendix C and summarised in the tables below, with criteria for evaluating the results of the analysis reproduced in the following pages.

Key Indicators	Existing 2020 Traffic Demand		Projected 2020 Development Traffic Demand (Sydney Average Residential Rates)		Projected 2020 Development Traffic Demand (Council Residential Rates)	
	AM	PM	AM	PM	AM	PM
High Street & Worth Street						
LOS	B	C	B	C	B	C
DOS	0.403	0.717	0.423	0.786	0.426	0.786
AVD (Sec/Veh)	22.2	30.7	22.8	32.6	22.9	32.6
Worth Street & Union Lane						
LOS	A	A	A	A	A	A
DOS	0.113	0.264	0.121	0.292	0.146	0.354
AVD (Sec/Veh)	1.0	1.8	1.7	2.3	2.0	2.7
Union Road and Worth Street						
LOS	B	C	B	C	B	C
DOS	0.550	0.661	0.593	0.701	0.605	0.745
AVD (Sec/Veh)	19.3	30.1	19.5	30.4	19.7	30.9

LOS – Level of Service; DOS – Degree of Saturation; AVD – Average Vehicle Delays

Key Indicators	Existing 2030 Traffic Demand		Projected 2030 Development Traffic Demand (Sydney Average Residential Rates)		Projected 2030 Development Traffic Demand (Council Residential Rates)	
	AM	PM	AM	PM	AM	PM
High Street & Worth Street						
LOS	B	D	B	D	B	D
DOS	0.491	1.049	0.501	1.073	0.522	1.073
AVD (Sec/Veh)	22.8	49.3	23.0	51.2	23.5	52.0
Worth Street & Union Lane						
LOS	A	A	A	A	A	A
DOS	0.138	0.501	0.149	0.508	0.184	0.606
AVD (Sec/Veh)	1.1	2.7	1.8	3.5	2.0	4.2
Union Road and Worth Street						
LOS	B	C	B	D	B	D
DOS	0.746	0.875	0.795	0.916	0.809	0.949
AVD (Sec/Veh)	21.1	38.8	22.2	43.9	22.7	51.6

LOS – Level of Service; DOS – Degree of Saturation; AVD – Average Vehicle Delays

Whilst it is acknowledged that in the 2030 scenario the High Street and Worth Street intersection operates at *Level of Service “D”*, the *Level of Service* does *not* change with the addition of the development traffic. Furthermore, the 2% p.a. growth rate was applied to *all* movements in the existing model to provide an even more rigorous assessment.

In the circumstances, the SIDRA capacity analysis has confirmed that there is sufficient spare capacity available on the surrounding road network during the weekday peak periods and it is therefore expected that the proposed development will not result in any unacceptable traffic implications in terms of road network capacity, nor will any infrastructure upgrades be required.

Criteria for Interpreting Results of Sidra Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good operation.	Good operation.
'B'	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation.	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory.	Satisfactory but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals¹ both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹ The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 6 and comprise:

- NO STOPPING restrictions along both sides of High Street, including along the entire site frontage
- NO STOPPING restrictions along both sides of Union Lane, including along the entire site frontage
- NO STOPPING restrictions along both sides of Worth Street, in between High Street and Union Road
- TIME RESTRICTED PARKING permitted in the Penrith Civic Centre, opposite the site.

Off-Street Parking Requirements & Provisions

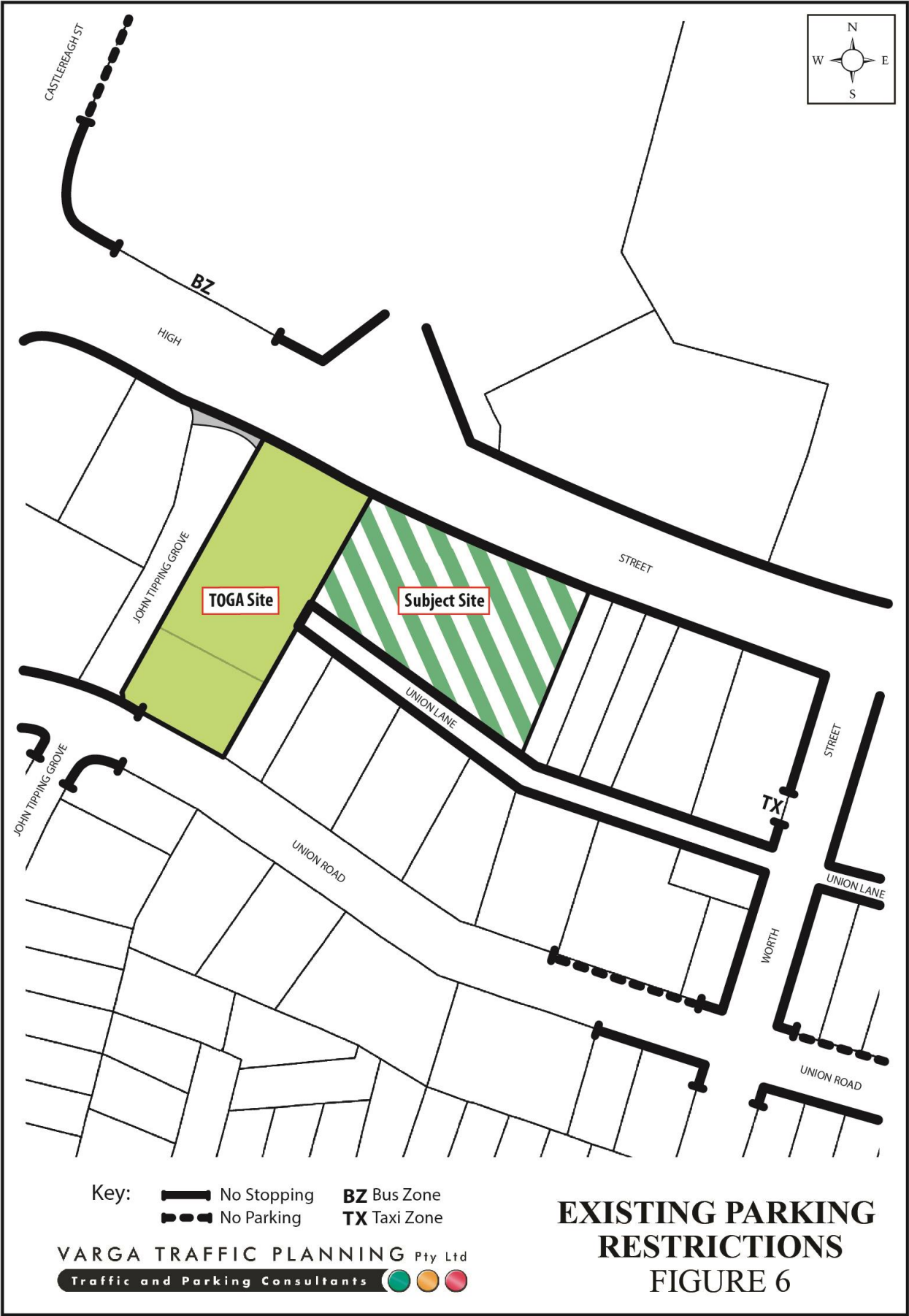
The off-street car parking rates applicable to the development proposal are specified in the *Penrith Development Control Plan 2014, Part C10 – Transport, Access and Parking* document in the following terms:

Residential Flat Buildings

- 1 space per 1 or 2 bedrooms
- 2 spaces per 3 or more bedrooms
- 1 visitor space per 5 dwellings, or part thereof.
- 1 carwash bay for every 50 units, up to a maximum of 4 spaces per building.
- 1 space per 40 units for service vehicles

Retail Premises (Penrith City Centre)

- 1 space per 30m² GFA



Office/Business Premises1 space per 100m² GFA

It should be noted that *PDCP 2010* also specifies that for commercial/retail uses located within the Penrith City Centre, “a maximum 60% of the total number of commercial parking spaces required by a development, other than for service vehicles, car washing bays and parking spaces allocated to people with a disability, are to be provided on-site. The balance of the total required number of parking spaces not provided on-site would need to be subject to a contribution under an adopted Contribution Plan or as set by the terms of a Voluntary Planning Agreement”.

Furthermore, the *PDCP 2010* does not specify an off-street parking rate for serviced apartments. Reference is therefore made to a number of LGAs located within the Sydney metropolitan area and their respective *DCPs* which *do* specify an off-street parking rate for serviced apartments. Those Councils and their respective parking rates are specified in the table below.

Comparison Serviced Apartment Off-Street Parking Rates	
Council	Parking Rate
Botany	1 space per 1.5 units plus 1 space per 2 employees
Hurstville	1 space per 5 bedrooms/units
Liverpool	1 space per bedroom/suite plus 1 space per 2 employees
Ryde	1 space per 1.5 units
Average	0.63 spaces per unit plus 1 space per 4 staff

Application of the above car parking rates to the various components of the development proposal yields an off-street car parking requirement of 475 spaces as set out on the following page:

Penrith DCP 2010 Parking Requirements

Residential apartments (272 units):	306 spaces
Visitors:	54 spaces
Serviced apartments (80 “keys” & 3 staff):	53 spaces (based on other LGA comparison rates)
Commercial suites (1,373m ²):	8 spaces*
Retail shops (727m ²):	15 spaces*
Car wash bay:	4 spaces
Service bay:	8 spaces
TOTAL:	475 spaces

* 60% of total requirement

Notwithstanding, the subject site is also located within 800 metres of a railway station in the Sydney metropolitan area, and therefore the residential component of the development is also subject to the parking requirements specified in the *State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development (Amendment No 3), 2015* in the following terms:

30 Standards that cannot be used to refuse development consent or modification of development consent

(1) If an application for the modification of a development consent or a development application for the carrying out of development to which this Policy applies satisfies the following design criteria, the consent authority must not refuse the application because of those matters:

a) if the car parking for the building will be equal to, or greater than, the recommended minimum amount of car parking specified in Part 3J of the Apartment Design Guide.

Reference is therefore made to the *Apartment Design Guide 2015, Section 3J – Bicycle and Car Parking* document which nominates the following car parking requirements:

Objective 3J-1

Car parking is provided based on proximity to public transport in metropolitan Sydney and centres in regional areas.

For development in the following locations:

- on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or

- on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre

the minimum car parking requirements for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less.

The car parking needs for a development must be provided off street.

Comparison therefore needs to be drawn between the off-street car parking requirements for residential flat buildings outlined in the *Penrith DCP 2010* and also the *RMS Guidelines* to determine the *lesser* requirement. The relevant car parking rates outlined in the *RMS Guidelines* are reproduced on the following page:

RMS Guidelines - High Density Residential Flat Buildings in Metropolitan Regional (CBD) Centres

0.4 spaces per 1 bedroom unit

0.7 spaces per 2 bedroom unit

1.2 spaces per 3 bedroom unit

1 space per 7 units for visitor parking

Accordingly, the minimum off-street car parking requirement applicable to the residential component of the development is 216 spaces, comprising 177 residential spaces and 39 visitor spaces as set out below:

	Penrith DCP 2010	RMS Guidelines
Residents:	306 spaces	177 spaces
Visitors:	54 spaces	39 spaces
Total:	360 spaces	216 spaces
Lesser Car Parking Requirement: 216 spaces		

The total minimum off-street parking requirement applicable to the proposed development is therefore 303 spaces as set out on the following page:

Penrith DCP 2010 & Apartment Design Guide Parking Requirements

Residential apartments (272 units):	176 spaces (ADG/RMS)
Visitors:	39 spaces (ADG/RMS)
Serviced apartments (80 “keys” & 3 staff):	53 spaces (based on other LGA comparison rates)
Commercial suites (1,373m ²):	8 spaces* (DCP)
Retail shops (727m ²):	15 spaces* (DCP)
Car wash bay:	4 spaces (DCP)
Service bay:	8 spaces (DCP)
TOTAL MINIMUM REQUIRED:	303 spaces

* 60% of total requirement

The proposed development makes provision for a total of 338 off-street car parking spaces, thereby satisfying Council and *SEPP 65* requirements.

The geometric design layout of the proposed car parking facilities has been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1:2004* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6:2009* in respect of parking bay dimensions, ramp gradients, aisle widths and overhead clearances.

Off-Street Bicycle Parking Provisions

The off-street bicycle parking rates for the proposed development have been assessed using the *Cycling Aspects of Austroads Guides, Appendix H: Bicycle Parking Provision Rates* which specifies the following rates:

Flat

Residents:	1 space per 3 flats
Visitors:	1 space per 12 flats

Office

Staff:	1 space per 200m ²
Visitors:	1 space per 750m ² over 1,000m ²

Shop

Staff:	1 space per 300m ²
Customers:	1 space per 500m ² over 1,000m ²

Application of the above bicycle parking requirements to the various components of the development proposal yields an off-street bicycle parking requirement of 123 spaces.

The proposed development makes provision for a total of 142 off-street bicycle parking spaces in a secure Class 2 room on the ground floor level, thereby satisfying the *Austroads* bicycle parking rates.

Loading/Service Provisions

The proposed new mixed use building is expected to be serviced by a variety of commercial vehicles ranging from light “tradie” vehicles up to and including 11m long rigid trucks (including Council’s 10.5m long garbage truck, as per the image below). In this regard, 2 service vehicle bays and a dedicated truck loading bay are proposed to be provided on the ground floor level of the building.

2.3.2 Heavy Rigid Waste Collection Vehicle

Note: The following vehicle to be used for developments comprised of 80 or more dwellings. Alternate solutions which propose the use of the low entry 9.7m heavy rigid waste collection vehicle (section 2.3.1) will be reviewed in accordance with section 2.5.

Vehicle Classifications	Heavy Rigid Vehicle Dimensions
Overall Length (m)	10.5
Operational Length (m)	12.5
Design Width (m)	2.8
Design Height (m)	3.7
Swept Circle (m)	22.5
Clearance (travel height) (m)	4.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:16 (6.25%) in 7.0m of travel
Gross Weight (max tonnes)	28.0
Front Chassis Clearance	13°
Rear Chassis Clearance	16°

Table 2: Standard dimensions in accordance with AS 2890.2

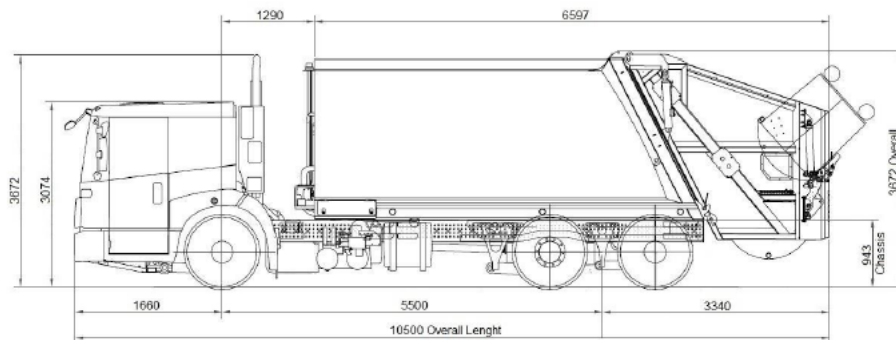


Figure 2: 10.5m Heavy Rigid Rear Load Waste Collection Vehicle specifications

The manoeuvring area has been designed to accommodate the swept turning path requirements of these 11m rigid trucks, allowing them to enter and exit the site in a forward direction at all times. Whilst it is acknowledged that the trucks require the use of the main vehicular circulation aisle to manoeuvre into the respective loading bays, the time required for the trucks to use the vehicular circulation aisle will be a matter of seconds. Driver visibility in the vicinity is excellent such that if cars are using the area, the truck driver will wait until the cars are clear. Cars must be given priority at all times.

Whilst it is also acknowledged that exiting trucks require the full width of Union Lane to turn out of the site, AS2890.2:2002 notes that trucks may be required to perform this manoeuvre when exiting a site. In this instance, traffic and pedestrian activity in Union Lane will be minimal and the width of the service driveway is such that excellent driver visibility will be provided. Similarly, the truck driver will exercise caution when exiting the site, waiting until all pedestrian and vehicular movements in the vicinity have cleared before proceeding.

The geometric design layout of the proposed loading facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of loading dock dimensions, overhead clearances and service area requirements for 11m rigid trucks

An indicative Loading Dock Management Plan is included in Appendix D.

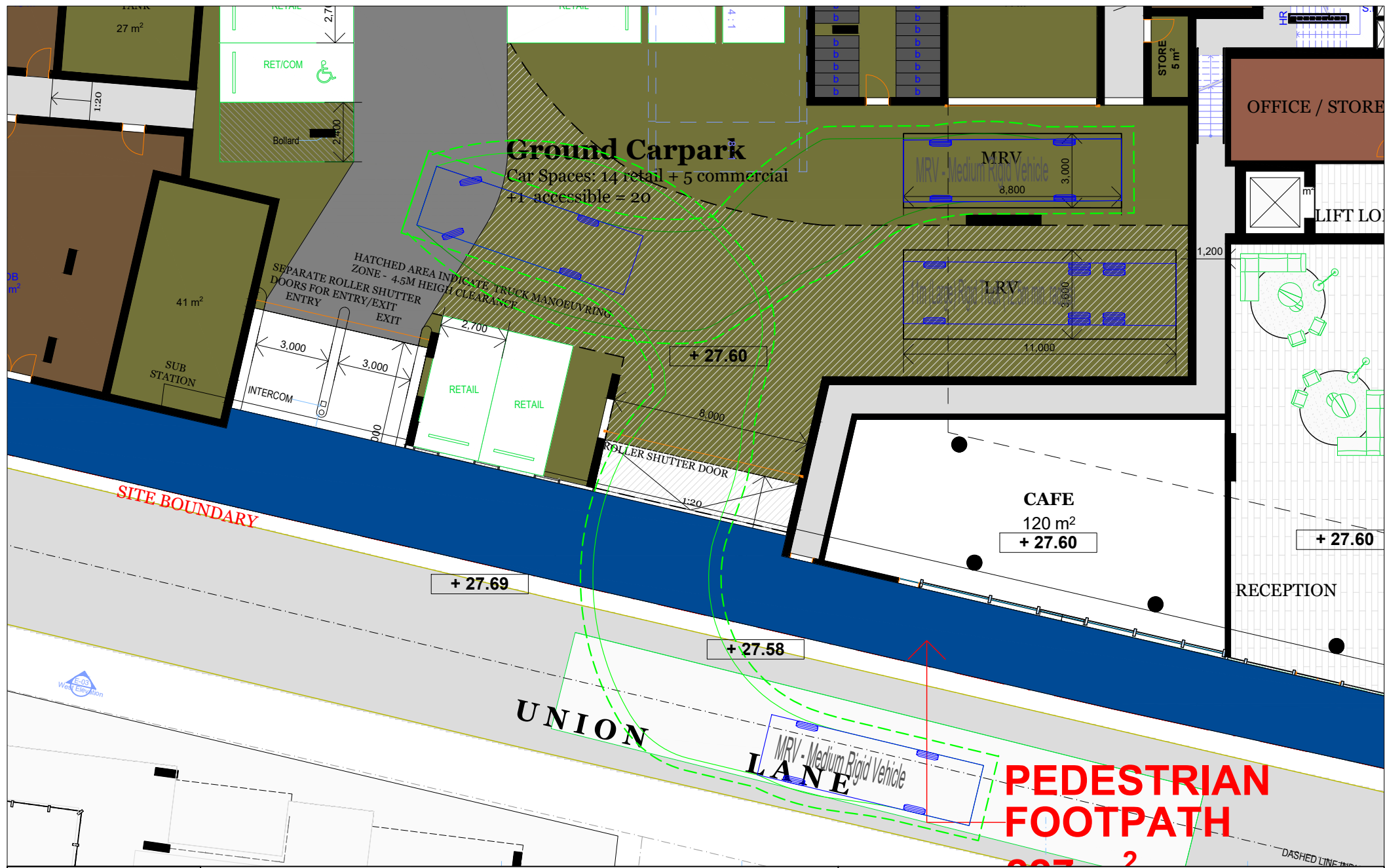
Conclusion

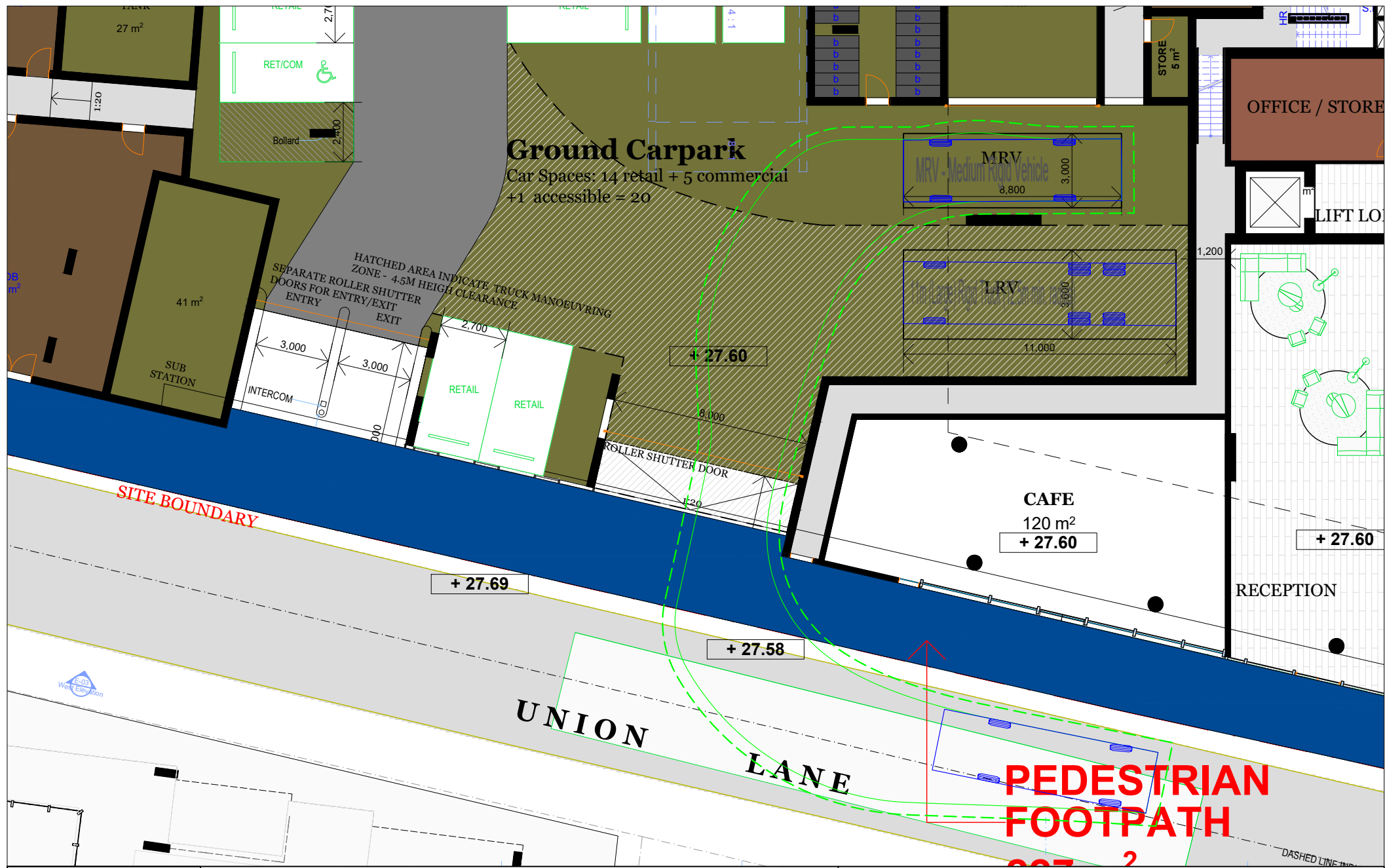
Based on the analysis and discussions presented within this report, the following conclusions are made:

- the proposed development involves the construction of a new residential development, comprising 272 residential apartments and 41 serviced apartments (80 “keys”) above 1,373m² of commercial suites, 727m² of retail shops and 338 off-street car parking spaces,

- the proposed development is expected to generate in the order of between 78 and 141 vehicle trips per hour during the weekday peak periods (*less* at other times), depending on the traffic generation rates used for the residential component
- the projected future traffic generation potential of the proposed development is consistent with the zoning expectations of the site and not expected to result in any unacceptable traffic implications, irrespective of the traffic generation rates used for the residential component
- whilst the development proposal includes a land dedication at the western end of the site in order to construct a new local road in the future (with the adjoining *TOGA* development), the site does *not* rely on this new road link from a traffic and site access perspective. There is sufficient capacity on the *existing* road network in the (unlikely) event the new road link does not proceed
- the off-street parking and loading provisions are generally in accordance with Council and *SEPP 65* requirements as well as the Australian Standards

In summary, it is therefore concluded that the proposed development will not have any unacceptable traffic, parking, loading or access implications.





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Sydney, Australia

PROJECT
HIGH STREET PENRITH

DRAWING TITLE
8.8m MRV
EXIT SWEEP TURNING PATH

ADDRESS
614-632 HIGH STREET
PENRITH

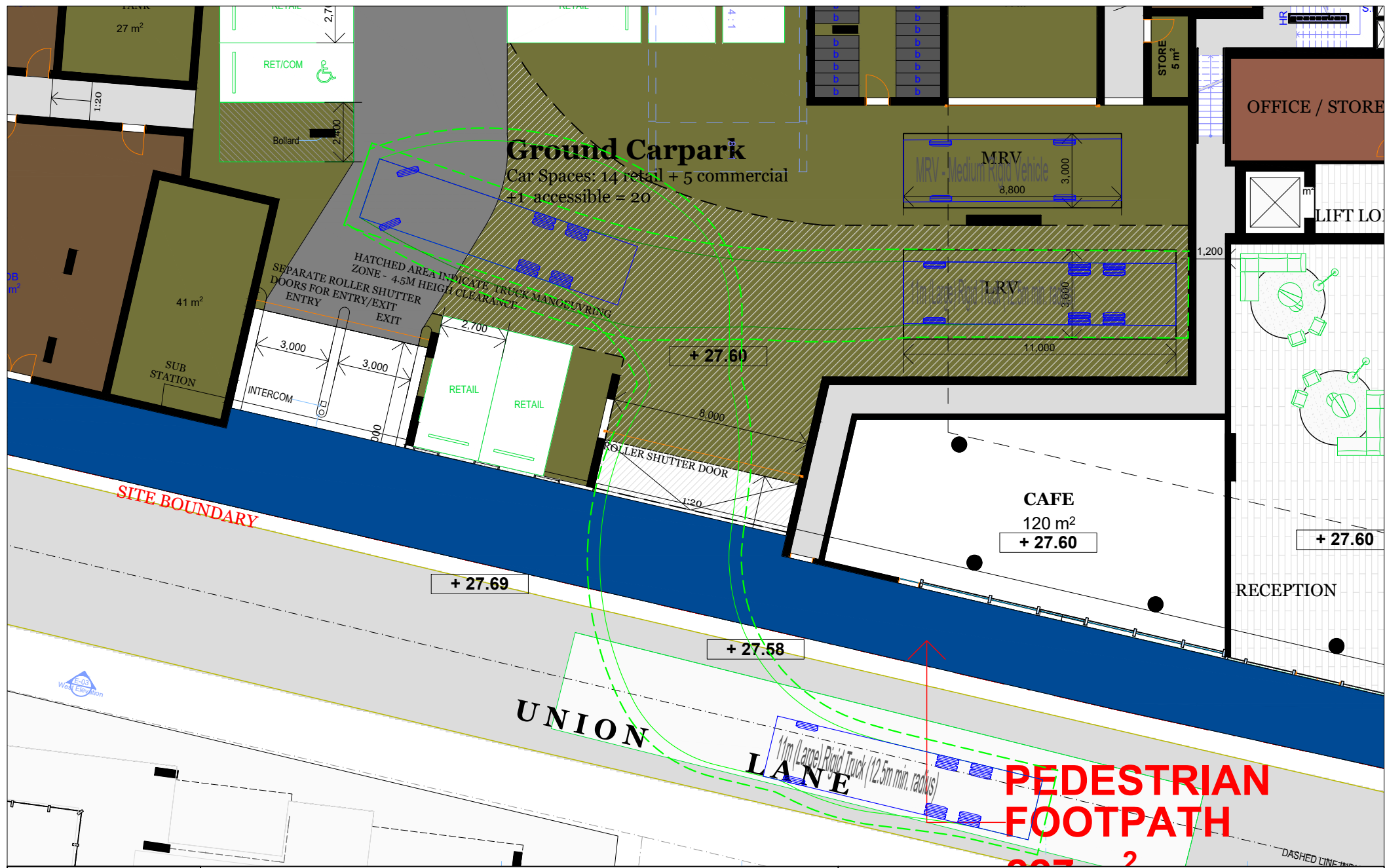
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2020-4-1
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Transport, Traffic and Parking Consultants





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PROJECT
HIGH STREET PENRITH

DRAWING TITLE
**11m RIGID TRUCK
ENTRY SWEEP TURNING PATH**

ADDRESS
614-632 HIGH STREET
PENRITH

PROJECT NO.
19363

REVIEWED
CP

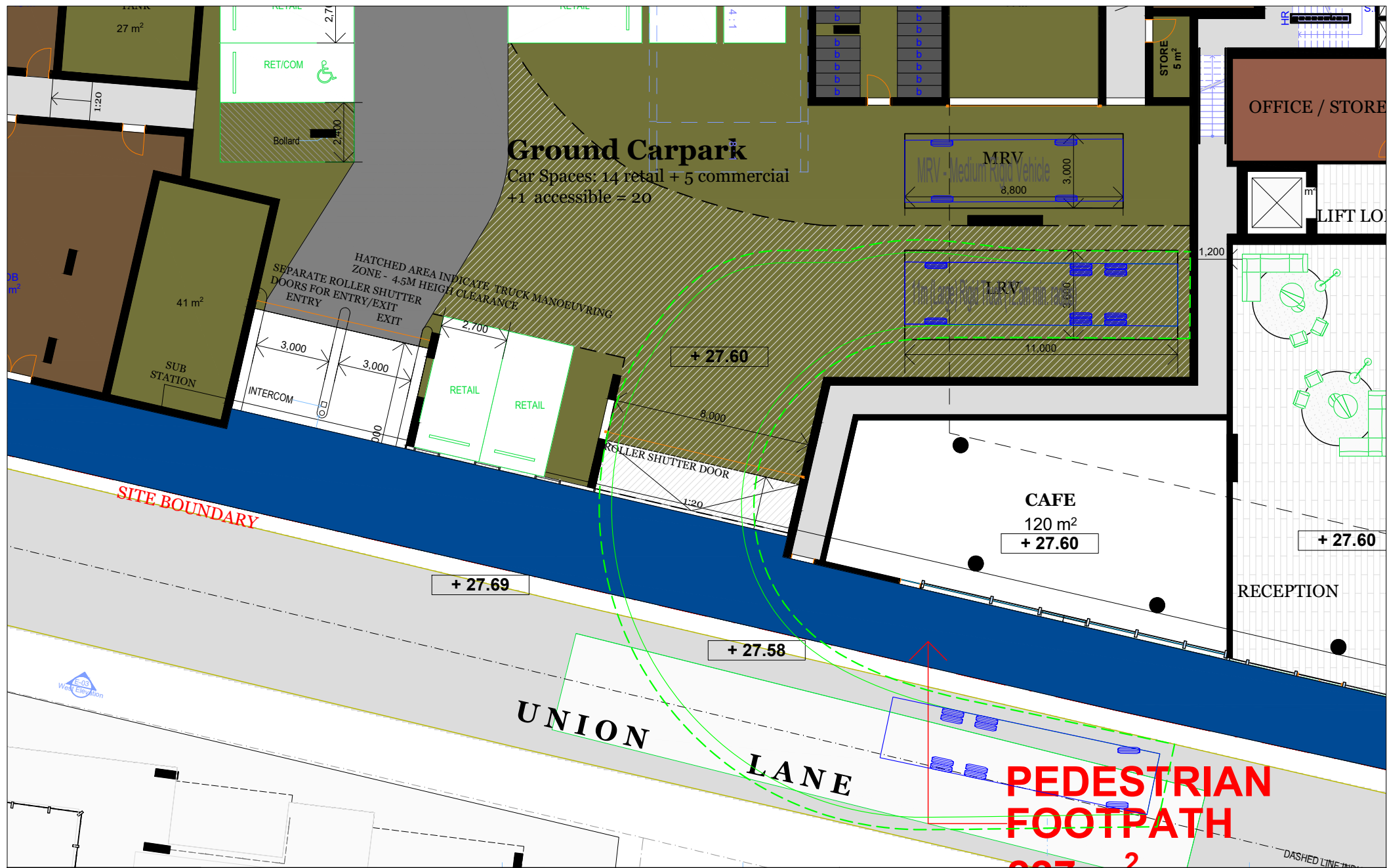
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PROJECT
HIGH STREET PENRITH

DRAWING TITLE
11m RIGID TRUCK
EXIT SWEEP TURNING PATH

ADDRESS
614-632 HIGH STREET
PENRITH

PROJECT NO.
19363
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CP

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APPENDIX A

ARCHITECTURAL PLANS

614-632 High Street Penrith
Yield Table - 01/04/2020

614-632 High Street Penrith

	Controls	Proposed
Site Area	4,715	
FSR	6.00	6.00
GFA	28,290	28,275

	Car Parking		Serviced Apartments			Residential Apartments			Subtotal	NLA Retail/ Com	NLA Serviced Apt	NSA	TOWER A COMM	TOWER B RES	Efficiency
			2B + 1Ba	2B Dual Key	3B Dual Key	1 Bed	2 Bed	3 Bed					GFA	GFA	
1 Ground	20									727				1191	61.0%
Mezzanine	51														0.0%
2 Level 1	89														0.0%
3 Level 2	89														0.0%
4 Level 3	89														0.0%
5 Level 4		Serviced Apartments		5					5	470	398		522	566	79.8%
6 Level 5				5					5	470	398		522	566	79.8%
7 Level 6			2	5					7	433	542		485	629	87.5%
8 Level 7				5	1				6		544			629	86.5%
9 Level 8				5	1				6		544			629	86.5%
10 Level 9				5	1				6		544			629	86.5%
11 Level 10				5	1				6		544			629	86.5%
12 Level 11		Technical Floor				2	4	1	7			498		567	87.8%
13 Level 12		Residential Apartments				3	4	1	8			548		623	88.0%
14 Level 13						3	4	1	8			548		623	88.0%
15 Level 14						3	4	1	8			548		623	88.0%
16 Level 15						3	4	1	8			548		623	88.0%
17 Level 16						3	4	1	8			548		623	88.0%
18 Level 17						3	4	1	8			548		623	88.0%
19 Level 18						3	4	1	8			548		623	88.0%
20 Level 19						3	4	1	8			548		623	88.0%
21 Level 20						3	4	1	8			548		623	88.0%
22 Level 21						3	4	1	8			548		623	88.0%
23 Level 22						3	4	1	8			548		623	88.0%
24 Level 23						3	4	1	8			548		623	88.0%
25 Level 24						3	4	1	8			548		623	88.0%
26 Level 25						3	4	1	8			548		623	88.0%
27 Level 26						3	4	1	8			548		623	88.0%
28 Level 27						3	4	1	8			548		623	88.0%
29 Level 28						3	4	1	8			548		623	88.0%
30 Level 29						3	4	1	8			548		623	88.0%
31 Level 30						3	4	1	8			548		623	88.0%
32 Level 31						3	4	1	8			548		623	88.0%
33 Level 32						3	4	1	8			548		623	88.0%
34 Level 33						3	4	1	8			548		623	88.0%
35 Level 34						3	4	1	8			548		623	88.0%
36 Level 35						3	4	1	8			548		623	88.0%
37 Level 36						3	4	1	8			548		623	88.0%
38 Level 37						3	4	1	8			548		623	88.0%
39 Level 38						3	4	1	8			548		623	88.0%
40 Level 39						3	4	1	8			548		623	88.0%
41 Level 40						2	4		6			406		472	86.0%
42 Level 41						2	4		6			406		472	86.0%
43 Level 42						6	2	1	9			572		668	85.6%
44 Level 43						2	3	2	7			529		611	86.6%
45 Level 44						4	2	1	7			464		540	85.9%
46 Level 45						2	3	1	6			439		504	87.1%
Roof															
Subtotal	338		2	35	4	104	134	34	313	2100	3514	18658	1529	26746	85.8%

Residential		1 Bed	2 Bed	3 Bed		
Proposed Mix		104	134	34		272
		38%	49%	13%		100%





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URBAN

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DKO

Project Name
Project Address
Client
High Street Penrith
614-632 High Street,
Penrith, NSW 2750
Urban Apartments

Project Number
Drawing Name
Scale
Date Commenced
Revision
00012012
Ground Floor Plan
1:200@A1
March 2019
Drawing Number
Revision
DA200
B

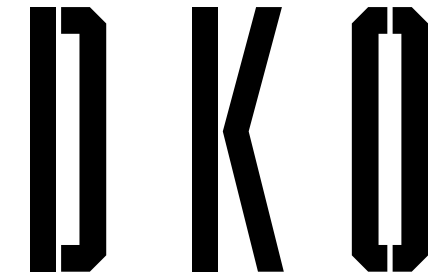


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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Mezzanine Floor Plan
Scale	1:200@A1
Date Commenced	March 2019
Drawing Number	DA201
Revision	B



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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Level 1 Carpark
Scale	1:200@A1
Date Commenced	March 2019
Drawing Number	DA202
Revision	B



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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Level 2 Carpark
Scale	1:200@A1
Date Commenced	March 2019
Drawing Number	DA203
Revision	B

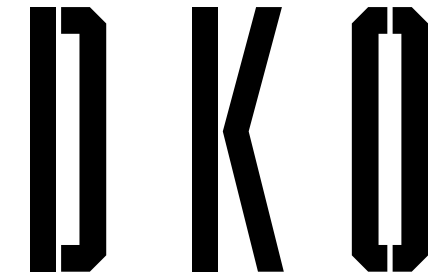


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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Level 3 Carpark
Scale	1:200@A1
Date Commenced	March 2019
Drawing Number	DA204
Revision	B



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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Level 4 Podium
Scale	1:200@A1
Date Commenced	March 2019
Revision	DA205 B



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Project Name
Project Address

High Street Penrith
614-632 High Street,
Penrith, NSW 2750

Project Number
Drawing Name

00012012
Level 5 Podium

Client

Urban Apartments

Scale
Date Commenced
Revision

1:200@A1
March 2019
DA206
B



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Project Name	High Street Penrith
Project Address	614-632 High Street, Penrith, NSW 2750
Client	Urban Apartments

Project Number	00012012
Drawing Name	Level 6 Podium
Scale	1:200@A1
Date Commenced	March 2019
Revision	DA207 B



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B	27/02/2020			DA



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Project Name
Project Address
Client
High Street Penrith
614-632 High Street,
Penrith, NSW 2750
Urban Apartments

Project Number
Drawing Name
Scale
Date Commenced
Revision
00012012
Level 7 Plan
1:200@A1
March 2019
DA208
B



NOTE:
Drawing shows Level 8 floor plan

Rev.	Date	By	Ckd	Description
B	27/03/2022 O			DA

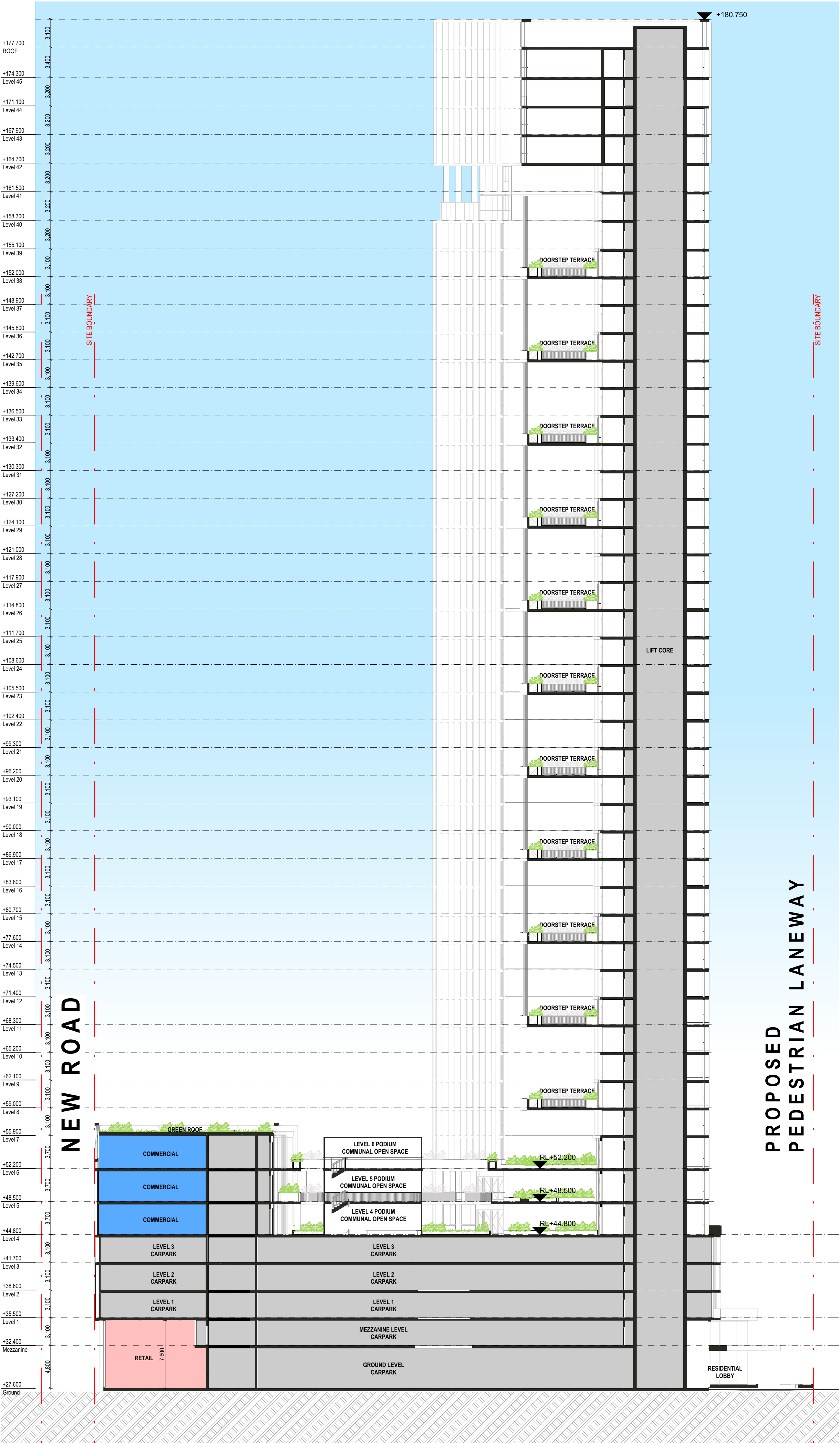
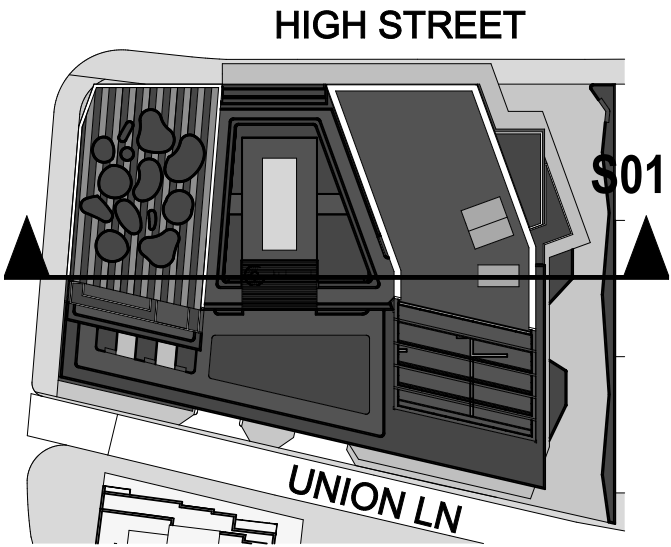


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Project Name	High Street Penrith	Project Number	00012012
Project Address	614-632 High Street, Penrith, NSW 2750	Drawing Name	Level 8 Plan
Client	Urban Apartments	Scale	1:200@A1
		Date Commenced	March 2019
		Drawing Number	DA209
		Revision	B

KEY MAP



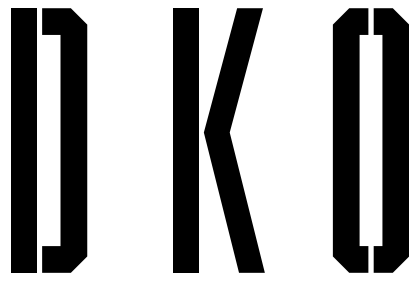
Rev.	Date	By	Ckd	Description
P6	1/11/2019			Draft DA
P7	5/11/2019	OS	SZ	Draft DA
A	28/11/2019			DA
B	27/03/2020			DA

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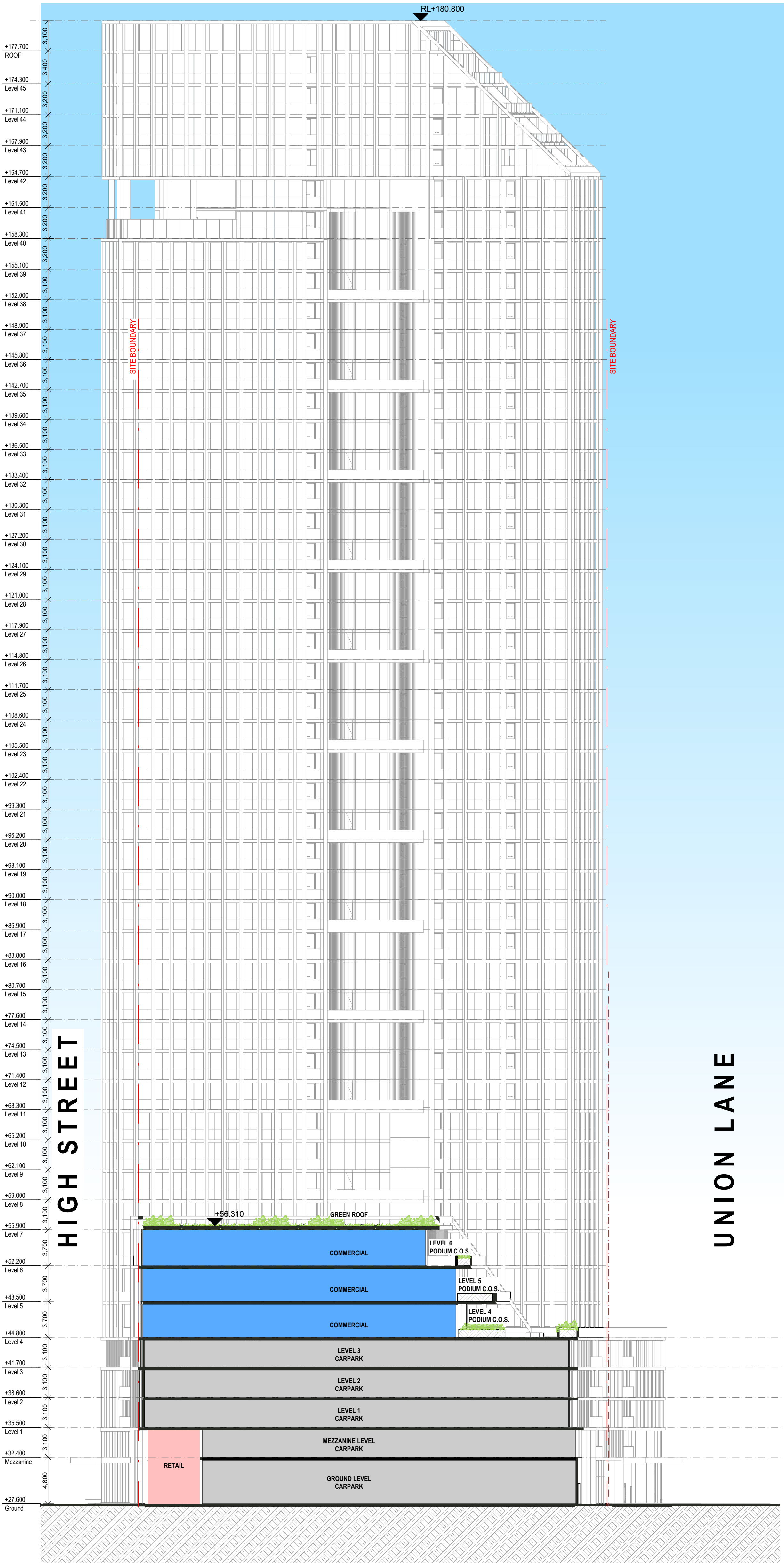
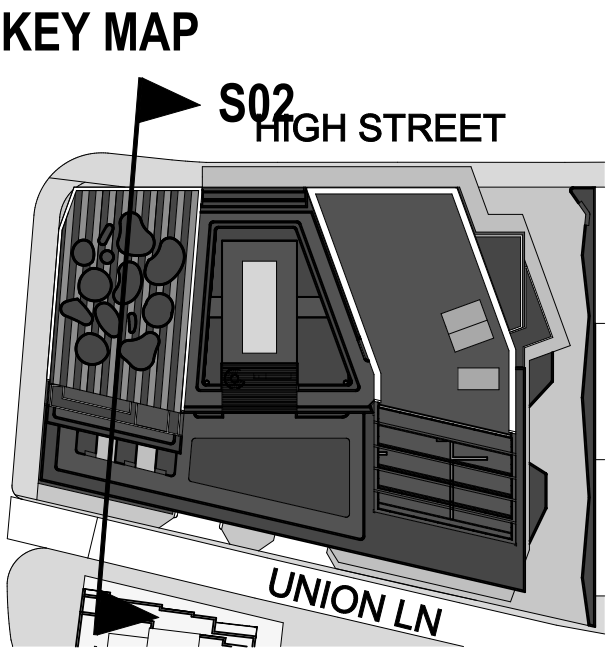


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Project Name High Street Penrith
Project Number 00012012
Project Address 614-632 High Street Penrith NSW 2750 Australia
Drawn By
Checked By
Date
Scale March 2019

Drawing Series Elevations & Sections
Drawing Name Sections - Sheet 1
Drawing Number DA304
Revision B



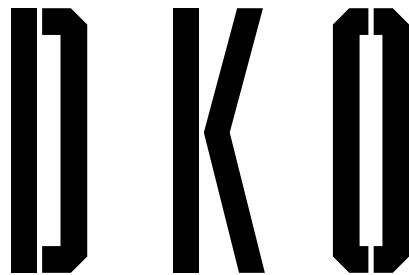
Builder/Contractor shall verify job dimensions before any job commences.
Figured dimensions take precedence over drawings and job dimensions.
All shop drawings shall be submitted to the Architect/Consultant, and manufacture shall not commence prior to return of inspected shop drawings by the Architect/Consultant.

Rev.	Date	By	Ckd	Description
P6	1/11/2019			Draft DA
P7	5/11/2019	OS	SZ	Draft DA
A	28/11/2019			DA
B	27/03/2020			DA

CLIENT



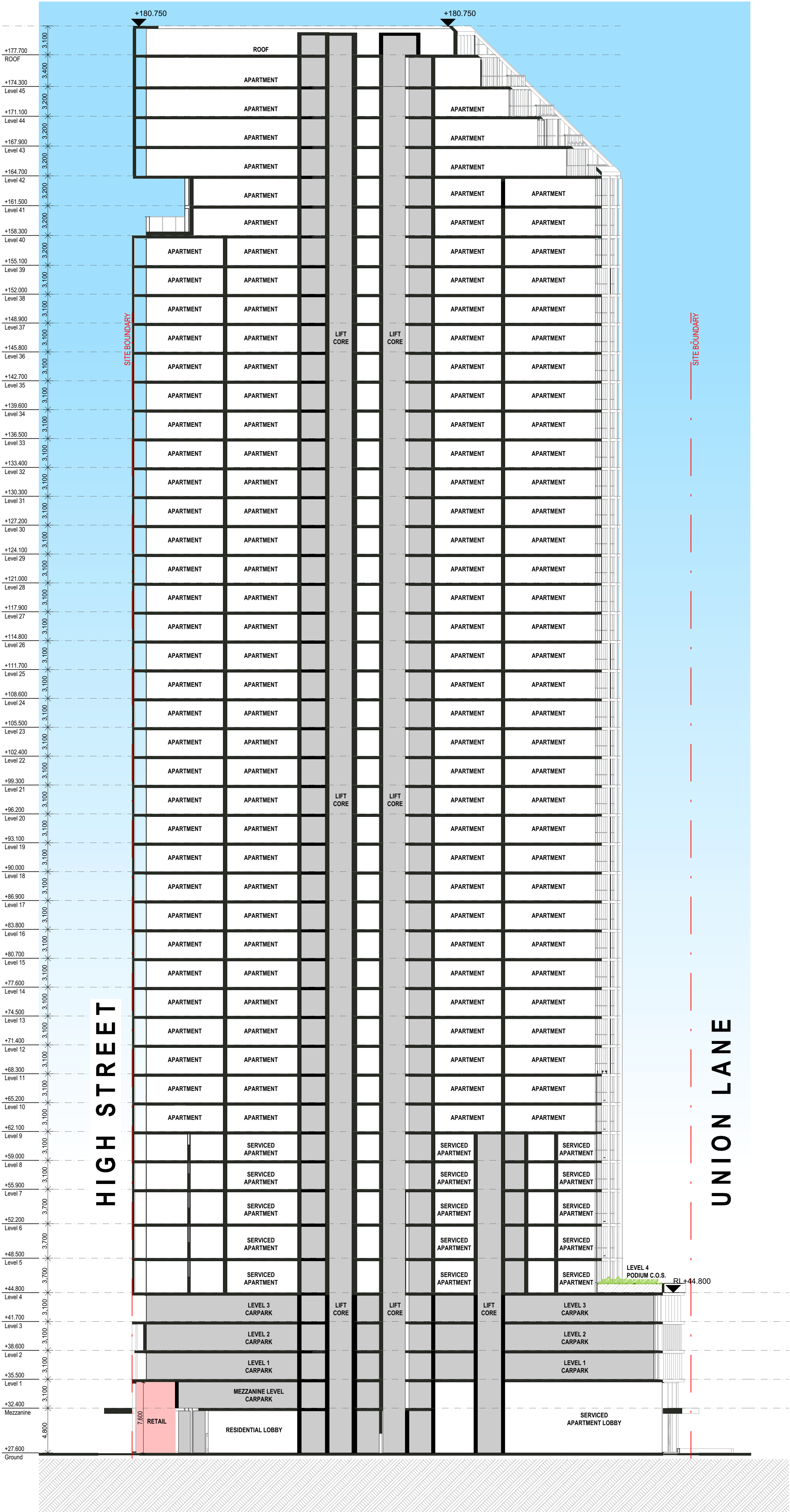
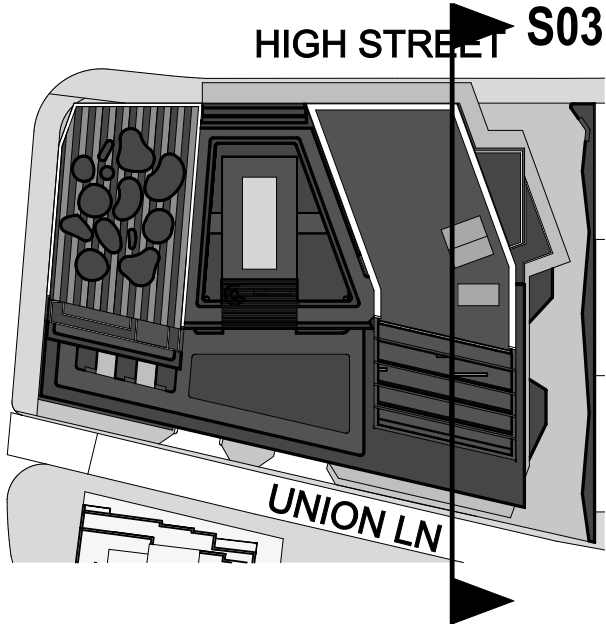
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Project Name High Street Penrith
Project Number 00012012
Project Address 614-632 High Street Penrith NSW 2750 Australia
Drawn By
Checked By
Date
Scale March 2019

Drawing Series Elevations & Sections
Drawing Name Sections - Sheet 2
Drawing Number DA305
Revision B

KEY MAP



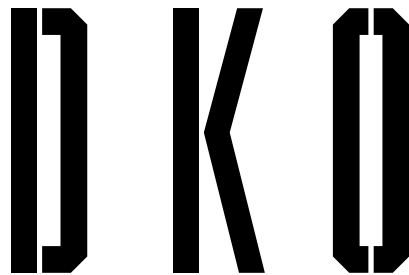
Rev.	Date	By	Ckd	Description
P6	1/11/2019			Draft DA
P7	5/11/2019	OS	SZ	Draft DA
A	28/11/2019			DA
B	27/03/2020			DA

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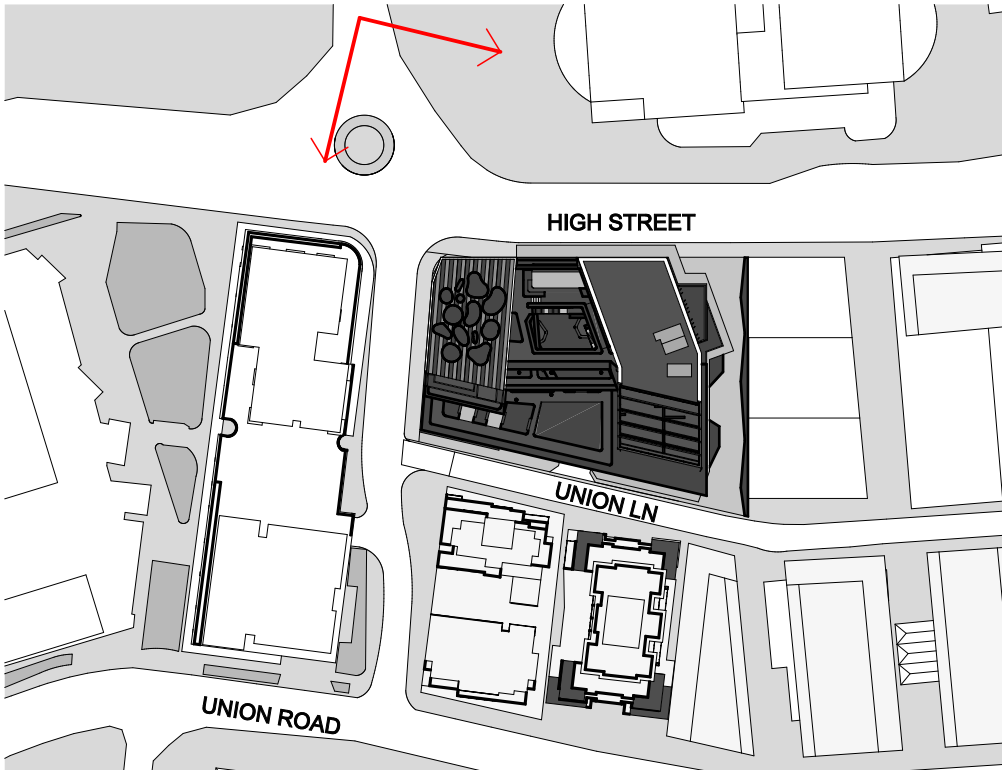


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Project Name High Street Penrith
Project Number 00012012
Project Address 614-632 High Street Penrith NSW 2750 Australia
Drawn By
Checked By
Date
Scale March 2019

Drawing Series Elevations & Sections
Drawing Name Sections - Sheet 3
Drawing Number DA306
Revision B



KEY PLAN



Builder/Contractor shall verify job dimensions before any job commences.
Figured dimensions take precedence over drawings and job dimensions.
All shop drawings shall be submitted to the Architect/Consultant, and manufacture shall not commence prior to return of inspected shop drawings by the Architect/Consultant.

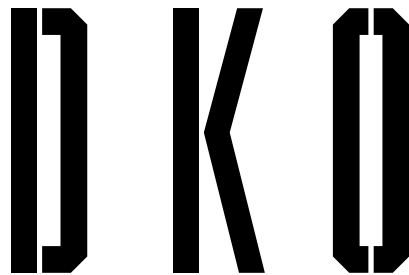
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Rev.	Date	By	Ckd	Description
P6	1/11/2019			Draft DA
P7	5/11/2019	OS	SZ	Draft DA
A	28/11/2019			DA
B	27/03/2020			DA

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Project Name High Street Penrith
Project Number 00012012
Project Address 614-632 High Street Penrith NSW 2750 Australia
Drawn By
Checked By
Date March 2019
Scale

Drawing Series Elevations & Sections
Drawing Name Streetscape Montage

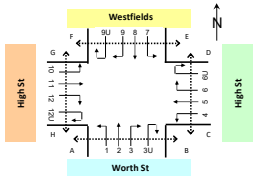
Drawing Number **DA307**
Revision **B**

APPENDIX B

TRAFFIC SURVEY DATA

Job No. : NS611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 1. High St / Worth St / Westfields

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: 15 mins Data



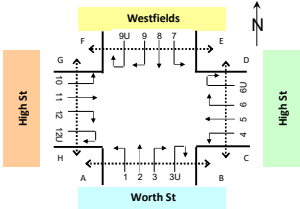
Classifications	Class 1	Class 2	Class 3
	Lights	Heavies	Buses

Approach	Worth St																High St															
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total
6:30 to 6:45	15	0	0	15	2	0	0	2	6	0	0	6	0	0	0	0	4	2	0	6	25	0	0	25	2	0	0	2	0	0	0	0
6:45 to 7:00	14	0	0	14	4	0	0	4	10	0	0	10	0	0	0	0	3	0	0	3	28	0	0	28	1	0	0	1	0	0	0	0
7:00 to 7:15	33	0	0	33	4	0	0	4	14	0	0	14	0	0	0	0	6	1	0	7	31	1	0	32	0	0	0	0	0	0	0	0
7:15 to 7:30	27	1	0	28	6	0	0	6	17	1	0	18	0	0	0	0	4	0	0	4	24	1	0	25	1	0	0	1	0	0	0	0
7:30 to 7:45	24	0	0	24	12	0	0	12	10	0	0	10	0	0	0	0	6	0	0	6	45	3	0	48	4	0	0	4	0	0	0	0
7:45 to 8:00	21	1	0	22	11	0	0	11	17	0	0	17	0	0	0	0	16	1	0	17	33	1	0	34	4	0	0	4	0	0	0	0
8:00 to 8:15	35	0	0	35	20	0	0	20	9	2	0	11	0	0	0	0	8	0	0	8	36	1	0	37	4	0	0	4	0	0	0	0
8:15 to 8:30	35	0	0	35	29	0	0	29	16	1	0	17	0	0	0	0	11	1	0	12	47	1	0	48	17	0	0	17	0	0	0	0
8:30 to 8:45	34	2	0	36	37	0	0	37	11	0	0	11	0	0	0	0	14	0	0	14	49	0	0	49	20	0	0	20	0	0	0	0
8:45 to 9:00	30	0	0	30	48	0	0	48	14	1	0	15	0	0	0	0	13	2	0	15	43	0	1	44	32	0	0	32	0	0	0	0
9:00 to 9:15	42	2	0	44	76	0	0	76	17	1	0	18	1	0	0	1	10	0	0	10	43	1	0	44	39	0	0	39	0	0	0	0
9:15 to 9:30	33	4	0	37	60	0	0	60	11	0	0	11	0	0	0	0	13	0	0	13	31	2	0	33	38	0	0	38	0	0	0	0
AM Totals	343	10	0	353	309	0	0	309	152	6	0	158	1	0	0	1	108	7	0	115	435	11	1	447	162	0	0	162	0	0	0	0
15:30 to 15:45	73	0	0	73	68	0	0	68	10	0	0	10	0	0	0	0	7	0	0	7	64	0	0	64	38	0	0	38	0	0	0	0
15:45 to 16:00	62	1	0	63	68	0	0	68	9	0	0	9	0	0	0	0	12	1	0	13	80	0	0	80	45	0	0	45	0	0	0	0
16:00 to 16:15	69	2	0	71	80	0	0	80	15	0	0	15	0	0	0	0	11	1	0	12	83	1	0	84	44	0	0	44	0	0	0	0
16:15 to 16:30	89	0	0	89	63	0	0	63	10	0	0	10	0	0	0	0	22	0	0	22	71	0	0	71	43	0	0	43	0	0	0	0
16:30 to 16:45	75	0	0	75	65	0	0	65	14	0	0	14	0	0	0	0	18	0	0	18	72	0	0	72	52	0	0	52	0	0	0	0
16:45 to 17:00	92	0	0	92	79	0	0	79	15	0	0	15	0	0	0	0	9	0	0	9	77	2	0	79	30	0	0	30	0	0	0	0
17:00 to 17:15	83	0	0	83	52	0	0	52	12	0	0	12	0	0	0	0	15	0	0	15	99	0	0	99	46	0	0	46	0	0	0	0
17:15 to 17:30	74	0	0	74	72	0	0	72	22	0	0	22	0	0	0	0	7	0	0	7	77	0	0	77	40	0	0	40	1	0	0	1
17:30 to 17:45	61	0	0	61	76	0	0	76	10	0	0	10	0	0	0	0	19	0	0	19	80	0	0	80	53	0	0	53	0	0	0	0
17:45 to 18:00	58	0	0	58	58	0	0	58	25	0	0	25	0	0	0	0	7	0	0	7	88	0	0	88	54	0	0	54	0	0	0	0
18:00 to 18:15	65	0	0	65	82	0	0	82	14	0	0	14	0	0	0	0	13	0	0	13	72	0	0	72	45	0	0	45	0	0	0	0
18:15 to 18:30	55	1	0	56	60	0	0	60	9	0	0	9	0	0	0	0	9	0	0	9	67	0	0	67	48	0	0	48	0	0	0	0
PM Totals	856	4	0	860	823	0	0	823	165	0	0	165	0	0	0	0	149	2	0	151	930	3	0	933	528	0	0	528	1	0	0	1

Approach	Westfields																High St																Crossing Pedestrians									
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)													
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total	
6:30 to 6:45	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	18	0	1	19	7	0	0	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
6:45 to 7:00	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	3	51	0	0	51	17	1	0	18	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2		
7:00 to 7:15	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	36	2	1	39	6	0	0	6	0	0	0	0	0	1	0	2	0	0	0	2	1	6	0			
7:15 to 7:30	1	0	0	1	0	0	0	0	2	0	0	2	0	0	0	0	5	61	4	2	67	15	0	0	15	0	0	0	0	0	1	0	3	3	1	4	0	4	0	12		
7:30 to 7:45	0	0	0	0	3	0	0	3	2	0	0	2	0	0	0	0	8	42	0	1	43	28	0	0	28	0	0	0	0	3	1	0	1	1	0	5	4	15				
7:45 to 8:00	1	0	0	1	5	0	0	5	1	0	0	1	0	0	0	0	8	55	0	2	57	33	0	0	33	1	0	0	1	4	1	0	3	0	2	16	2	28				
8:00 to 8:15	2	0	0	2	2	0	0	2	4	0	0	4	0	0	0	0	15	0	0	15	77	3	0	80	31	0	0	31	0	0	5	1	0	5	0	0	14	3	28			
8:15 to 8:30	4	0	0	4	3	0	0	3	3	0	0	3	0	0	0	0	21	0	0	21	62	0	0	62	33	0	0	33	0	0	5	0	0	8	0	2	10	10	35			
8:30 to 8:45	2	0	0	2	8	0	0	8	4	0	0	4	0	0	0	0	35	0	0	35	62	0	2	64	35	0	0	35	0	0	5	2	0	5	2	0	22	10	46			
8:45 to 9:00	1	0	0	1	7	0	0	7	4	0	0	4	0	0	0	0	36	0	0	36	68	0	1	69	39	0	0	39	0	0	10	6	1	3	2	0	14	12	48			
9:00 to 9:15	10	0	0	10	10	0	0	10	16	0	0	16	0	0	0	0	46	0	0	46	46	3	1	50	25	0	0	25	0	0	14	4	1	1	0	0	6	11	37			
9:15 to 9:30	7	0	0	7	16	0	0	16	26	0	0	26	0	0	0	0	68	4	5	73	30	0	2	30	0	0	30	0	0	10	8	0	0	0	0	17	15	50				
AM Totals	29	0	0	29	57	0	0	57	63	0	0	63	0	0	0	0	245	0	0	245	622	17	12	651	299	1	0	300	1	0	1	56	25	3	32	8	5	111	68	308		
15:30 to 15:45	35	0	0	35	57	0	0	57	60	0	0	60	0	0	0	0	56	55	2	0	57	17	0	0	17	0	0	0	0	12	7	0	0	2	0	12	16	49				
15:45 to 16:00	26	0	0	26	60	0	0	60	64	0	0	64	0	0	0	0	62	59	0	0	59	23	0	0	23	0	0	0	7	11	0	2	0	3	8	11	42					
16:00 to 16:15	38	0	0	38	57	0	0	57	50	0	0	50	0	0	0	0	77	55	1	1	57	23	0	0	23	0	0	0	4	12	6	6	3	1	10	15	47					
16:15 to 16:30	33	0	0	33	66	0	0	66	70	0	0	70	0	0	0	0	74	47	1	1	49	14	0	0	14	0	0	0	2	5	3	2	1	2	18	12	45					
16:30 to 16:45	43	0	0	43	83	0	0	83	60	0	0	60	0	0	0	0	59	55	0	1	56	11	0	0	11	0	0	0	2	6	6	1	0	0	11	11	37					
16:45 to 17:00	50	0	0	50	56	0	0	56	61	0	0	61	0	0	0	0	60	51	0	0	51	24	0	0	24	0	0	0	4	6	6	3	4	0	12	7	42					
17:00 to 17:15	19	0	0	19	47	0	0	47	61	0	0	61	0	0	0	0	70	70	0	0	60	18	1	0	18	0	0	0	3	15	5	1	2	1	8	17	52					
17:15 to 17:30	43	0	0	43	82	0	0	82	71	0	0	71	0	0	0	0	62	0	0	62	56	0	0	56	24	0	0	24	0	0	3	7	1	0	0	1	5	8	25			
17:30 to 17:45	46	0	0	46	69	0	0	69	65	0	0	65	0	0	0	0	60	0	0	60	44	0	1	45	20	0	0	20	0	0	1	7	1	3	1	3	4	14	34			
17:45 to 18:00	43	0	0	43	67	0	0	67	53	0	0	53	0	0	0	0	74	67	0	0	67	14	0	0	14	0	0	0	0	1	4	0	0	1	4	7	17					
18:00 to 18:15	29	0	0	29	56	0	0	56	70	0	0	70	0	0	0	0	72	0	0	72	48	0	0	48	20	0	0	20	0	0	1	3	1	2	2	0	7	5	21			
18:15 to 18:30	40	0	0	40	55	0	0	55	52	0	0	52	0	0	0	0	57	55	0	0	55	15	0	0	15	0	0	0	0	4	0	0	1	0	6	8	19					
PM Totals	445	0	0	445	757	0	0	757	737	0	0	737	0	0	0	0	783	0	0	783	651	4	5	660	223	1	0	224	0	0	0	39	84	33	20	16	12	105	131	440		

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 1. High St / Worth St / Westfields

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

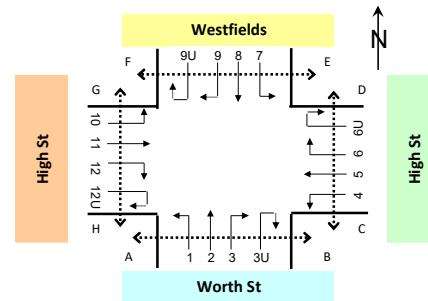


Approach	Worth St																High St															
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total
6:30 to 7:30	89	1	0	90	16	0	0	16	47	1	0	48	0	0	0	0	17	3	0	20	108	2	0	110	4	0	0	4	0	0	0	0
6:45 to 7:45	98	1	0	99	26	0	0	26	51	1	0	52	0	0	0	0	19	1	0	20	128	5	0	133	6	0	0	6	0	0	0	0
7:00 to 8:00	105	2	0	107	33	0	0	33	58	1	0	59	0	0	0	0	32	2	0	34	133	6	0	139	9	0	0	9	0	0	0	0
7:15 to 8:15	107	2	0	109	49	0	0	49	53	3	0	56	0	0	0	0	34	1	0	35	138	6	0	144	13	0	0	13	0	0	0	0
7:30 to 8:30	115	1	0	116	72	0	0	72	52	3	0	55	0	0	0	0	41	2	0	43	161	6	0	167	29	0	0	29	0	0	0	0
7:45 to 8:45	125	3	0	128	97	0	0	97	53	3	0	56	0	0	0	0	49	2	0	51	165	3	0	168	45	0	0	45	0	0	0	0
8:00 to 9:00	134	2	0	136	134	0	0	134	50	4	0	54	0	0	0	0	46	3	0	49	175	2	1	178	73	0	0	73	0	0	0	0
8:15 to 9:15	141	4	0	145	190	0	0	190	58	3	0	61	1	0	0	1	48	3	0	51	182	2	1	185	108	0	0	108	0	0	0	0
8:30 to 9:30	139	8	0	147	221	0	0	221	53	2	0	55	1	0	0	1	50	2	0	52	166	3	1	170	129	0	0	129	0	0	0	0
AM Totals	143	10	0	153	309	0	0	309	152	6	0	158	1	0	0	1	108	7	0	115	435	11	1	447	162	0	0	162	0	0	0	0
15:30 to 16:30	293	3	0	296	279	0	0	279	44	0	0	44	0	0	0	0	52	2	0	54	298	1	0	299	160	0	0	160	0	0	0	0
15:45 to 16:45	295	3	0	298	276	0	0	276	48	0	0	48	0	0	0	0	63	2	0	65	306	1	0	307	184	0	0	184	0	0	0	0
16:00 to 17:00	325	2	0	327	287	0	0	287	54	0	0	54	0	0	0	0	60	1	0	61	303	3	0	306	169	0	0	169	0	0	0	0
16:15 to 17:15	339	0	0	339	259	0	0	259	51	0	0	51	0	0	0	0	64	0	0	64	319	2	0	321	171	0	0	171	0	0	0	0
16:30 to 17:30	324	0	0	324	268	0	0	268	63	0	0	63	0	0	0	0	49	0	0	49	325	2	0	327	168	0	0	168	1	0	0	1
16:45 to 17:45	310	0	0	310	279	0	0	279	59	0	0	59	0	0	0	0	50	0	0	50	333	2	0	335	169	0	0	169	1	0	0	1
17:00 to 18:00	276	0	0	276	258	0	0	258	69	0	0	69	0	0	0	0	48	0	0	48	344	0	0	344	193	0	0	193	1	0	0	1
17:15 to 18:15	258	0	0	258	288	0	0	288	71	0	0	71	0	0	0	0	46	0	0	46	317	0	0	317	192	0	0	192	1	0	0	1
17:30 to 18:30	239	1	0	240	276	0	0	276	58	0	0	58	0	0	0	0	48	0	0	48	307	0	0	307	200	0	0	200	0	0	0	0
PM Totals	856	4	0	860	823	0	0	823	165	0	0	165	0	0	0	0	149	2	0	151	930	3	0	933	528	0	0	528	1	0	0	1

Approach	Westfields																High St																Crossing Pedestrians									
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)													
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total	
6:30 to 7:30	2	0	0	2	3	0	0	3	3	0	0	3	0	0	0	0	8	0	0	8	166	6	4	176	45	1	0	46	0	0	0	0	0	2	1	6	3	1	7	1	21	
6:45 to 7:45	2	0	0	2	4	0	0	4	5	0	0	5	0	0	0	0	16	0	0	16	190	6	4	200	66	1	0	67	0	0	0	0	3	3	0	7	4	1	12	5	35	
7:00 to 8:00	2	0	0	2	9	0	0	9	6	0	0	6	0	0	0	0	21	0	0	21	194	6	6	206	82	0	0	82	1	0	0	1	7	4	0	9	4	3	27	7	61	
7:15 to 8:15	4	0	0	4	10	0	0	10	9	0	0	9	0	0	0	0	36	0	0	36	235	7	5	247	107	0	0	107	1	0	0	1	12	4	0	12	4	3	39	9	83	
7:30 to 8:30	7	0	0	7	13	0	0	13	10	0	0	10	0	0	0	0	52	0	0	52	236	3	3	242	125	0	0	125	1	0	0	1	17	3	0	17	1	4	45	19	106	
7:45 to 8:45	9	0	0	9	18	0	0	18	12	0	0	12	0	0	0	0	79	0	0	79	256	3	4	263	132	0	0	132	1	0	0	1	19	4	0	21	2	4	62	25	137	
8:00 to 9:00	9	0	0	9	20	0	0	20	15	0	0	15	0	0	0	0	107	0	0	107	269	3	3	275	138	0	0	138	0	0	0	0	25	9	1	21	4	2	60	35	157	
8:15 to 9:15	17	0	0	17	28	0	0	28	27	0	0	27	0	0	0	0	138	0	0	138	238	3	4	245	132	0	0	132	0	0	0	0	34	12	2	17	4	2	52	43	166	
8:30 to 9:30	20	0	0	20	41	0	0	41	50	0	0	50	0	0	0	0	185	0	0	185	220	8	5	233	129	0	0	129	0	0	0	0	39	20	2	9	4	0	59	48	181	
AM Totals	29	0	0	29	57	0	0	57	63	0	0	63	0	0	0	0	245	0	0	245	622	17	12	651	299	1	0	300	1	0	0	1	56	25	3	32	8	5	111	68	308	
15:30 to 16:30	132	0	0	132	240	0	0	240	244	0	0	244	0	0	0	0	269	0	0	269	216	4	2	222	77	0	0	77	0	0	0	0	25	35	9	10	6	6	48	54	193	
15:45 to 16:45	140	0	0	140	266	0	0	266	244	0	0	244	0	0	0	0	272	0	0	272	216	2	3	221	71	0	0	71	0	0	0	0	15	34	15	11	4	6	47	49	181	
16:00 to 17:00	164	0	0	164	262	0	0	262	241	0	0	241	0	0	0	0	270	0	0	270	208	2	3	213	72	0	0	72	0	0	0	0	12	29	21	12	8	3	51	45	181	
16:15 to 17:15	145	0	0	145	252	0	0	252	252	0	0	252	0	0	0	0	263	0	0	263	212	1	3	216	67	1	0	68	0	0	0	0	11	32	20	7	7	3	49	47	176	
16:30 to 17:30	155	0	0	155	268	0	0	268	253	0	0	253	0	0	0	0	251	0	0	251	221	0	2	223	77	1	0	78	0	0	0	0	12	34	18	5	6	2	36	43	156	
16:45 to 17:45	158	0	0	158	254	0	0	254	258	0	0	258	0	0	0	0	252	0	0	252	210	0	2	212	86	1	0	87	0	0	0	0	11	35	13	7	7	5	29	46	153	
17:00 to 18:00	151	0	0	151	265	0	0	265	250	0	0	250	0	0	0	0	266	0	0	266	226	0	2	228	76	1	0	77	0	0	0	0	7	30	11	4	3	6	21	46	128	
17:15 to 18:15	161	0	0	161	276	0	0	276	259	0	0	259	0	0	0	0	268	0	0	268	215	0	1	216	78	0	0	78	0	0	0	0	5	18	7	5	3	5	20	34	97	
17:30 to 18:30	158	0	0	158	249	0	0	249	240	0	0	240	0	0	0	0	263	0	0	263	214	0	1	215	69	0	0	69	0	0	0	0	2	15	6	5	4	4	21	34	91	
PM Totals	445	0	0	445	757	0	0	757	737	0	0	737	0	0	0	0	783	0	0	783	651	4	5	660	223	1	0	224	0	0	0	0	39	84	33	20	16	12	105	131	440	

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 1. High St / Worth St / Westfields

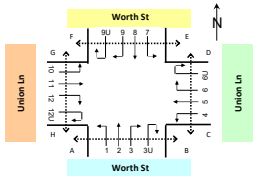
Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
 : Pedestrian Data



Direction	Pedestrians							
Time Period	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H
6:30 to 6:45	0	0	1	0	0	0	0	0
6:45 to 7:00	0	0	0	1	0	0	1	0
7:00 to 7:15	0	1	0	2	0	0	2	1
7:15 to 7:30	0	1	0	3	3	1	4	0
7:30 to 7:45	3	1	0	1	1	0	5	4
7:45 to 8:00	4	1	0	3	0	2	16	2
8:00 to 8:15	5	1	0	5	0	0	14	3
8:15 to 8:30	5	0	0	8	0	2	10	10
8:30 to 8:45	5	2	0	5	2	0	22	10
8:45 to 9:00	10	6	1	3	2	0	14	12
9:00 to 9:15	14	4	1	1	0	0	6	11
9:15 to 9:30	10	8	0	0	0	0	17	15
AM Totals	56	25	3	32	8	5	111	68
15:30 to 15:45	12	7	0	0	2	0	12	16
15:45 to 16:00	7	11	0	2	0	3	8	11
16:00 to 16:15	4	12	6	6	3	1	10	15
16:15 to 16:30	2	5	3	2	1	2	18	12
16:30 to 16:45	2	6	6	1	0	0	11	11
16:45 to 17:00	4	6	6	3	4	0	12	7
17:00 to 17:15	3	15	5	1	2	1	8	17
17:15 to 17:30	3	7	1	0	0	1	5	8
17:30 to 17:45	1	7	1	3	1	3	4	14
17:45 to 18:00	0	1	4	0	0	1	4	7
18:00 to 18:15	1	3	1	2	2	0	7	5
18:15 to 18:30	0	4	0	0	1	0	6	8
PM Totals	39	84	33	20	16	12	105	131

Job No. : NS611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 2. Worth St / Union Ln

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: 15 mins Data



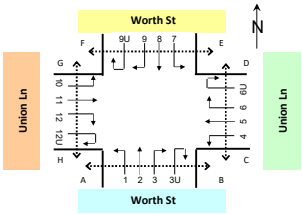
Classifications	Class 1	Class 2	Class 3
	Lights	Heavies	Buses

Approach	Worth St																Union Ln																
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)				
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	
6:30 to 6:45	1	0	0	1	18	0	0	18	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	5	0	0	5	0	0	0	0	
6:45 to 7:00	2	0	0	2	25	0	0	25	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	2	0	0	0	0	
7:00 to 7:15	2	0	0	2	47	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 to 7:30	8	1	0	9	47	3	0	50	0	0	0	0	0	0	0	0	3	2	0	5	2	2	0	0	2	0	0	2	0	0	0	0	
7:30 to 7:45	6	0	0	6	41	0	0	41	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	
7:45 to 8:00	5	0	0	5	43	0	0	43	0	0	0	0	0	0	0	0	5	0	0	5	1	1	0	2	2	0	0	2	0	0	0	0	
8:00 to 8:15	11	0	0	11	57	2	0	59	0	0	0	0	1	0	0	1	2	0	0	2	0	0	0	0	3	0	0	3	0	0	0	0	
8:15 to 8:30	9	0	0	9	69	1	0	70	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	3	0	0	3	0	0	0	0	
8:30 to 8:45	11	0	0	11	74	2	0	76	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	5	1	0	6	0	0	0	0	
8:45 to 9:00	12	0	0	12	86	0	0	86	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 to 9:15	13	0	0	13	129	3	0	132	0	0	0	0	1	0	0	1	3	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	
9:15 to 9:30	7	0	0	7	95	3	0	98	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	6	0	0	6	0	0	0	0	
AM Totals	87	1	0	88	731	14	0	745	0	0	0	0	2	0	0	2	37	2	0	39	3	1	0	4	32	1	0	33	0	0	0	0	
15:30 to 15:45	2	0	0	2	132	0	0	132	0	0	0	0	0	0	0	0	13	0	0	13	0	0	0	0	17	0	0	17	0	0	0	0	
15:45 to 16:00	2	0	0	2	142	1	0	143	0	0	0	0	0	0	0	0	7	0	0	7	0	0	0	0	7	1	0	8	0	0	0	0	
16:00 to 16:15	4	0	0	4	144	0	0	144	0	0	0	0	0	0	0	0	11	1	0	12	0	0	0	0	9	1	0	10	0	0	0	0	
16:15 to 16:30	0	0	0	0	152	0	0	152	0	0	0	0	0	0	0	0	8	1	0	9	2	0	0	0	2	21	0	0	21	0	0	0	0
16:30 to 16:45	4	0	0	4	132	0	0	132	0	0	0	0	0	0	0	0	15	0	0	15	0	0	0	0	16	0	0	16	0	0	0	0	
16:45 to 17:00	3	0	0	3	148	0	0	148	0	0	0	0	0	0	0	0	10	0	0	10	0	0	0	0	11	0	0	11	0	0	0	0	
17:00 to 17:15	4	0	0	4	135	0	0	135	0	0	0	0	0	0	0	0	26	0	0	26	1	0	0	1	13	0	0	13	0	0	0	0	
17:15 to 17:30	6	0	0	6	130	0	0	130	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	16	0	0	16	0	0	0	0	
17:30 to 17:45	2	0	0	2	145	0	0	145	0	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	9	0	0	9	0	0	0	0	
17:45 to 18:00	5	0	0	5	114	0	0	114	0	0	0	0	0	0	0	0	15	0	0	15	0	0	0	0	14	0	0	14	0	0	0	0	
18:00 to 18:15	7	0	0	7	129	0	0	129	0	0	0	0	0	0	0	0	17	0	0	17	0	0	0	0	25	0	0	25	0	0	0	0	
18:15 to 18:30	1	0	0	1	114	0	0	114	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	12	1	0	13	0	0	0	0	
PM Totals	40	0	0	40	1,617	1	0	1,618	0	0	0	0	0	0	0	0	154	2	0	156	3	0	0	3	170	3	0	173	0	0	0	0	

Approach	Worth St																Union Ln																Crossing Pedestrians									
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)													
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total	
6:30 to 6:45	0	0	0	0	14	0	0	14	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
6:45 to 7:00	0	0	0	0	18	3	0	21	1	0	0	1	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	9		
7:00 to 7:15	0	0	0	0	16	1	0	17	0	0	0	0	1	0	0	1	3	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	2	1	2	7		
7:15 to 7:30	0	0	0	0	14	0	0	14	3	0	0	3	1	0	0	1	2	0	0	2	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	1	0	0	0	1	3	
7:30 to 7:45	0	0	0	0	32	0	0	32	1	0	0	1	4	0	0	4	1	0	0	1	0	0	0	3	0	0	3	0	0	0	0	0	3	4	0	8	0	2	6	1	24	
7:45 to 8:00	0	0	0	0	52	0	0	52	4	0	0	4	0	0	0	0	2	1	0	3	0	0	0	0	1	0	1	0	0	0	0	0	3	0	0	4	0	3	4	1	15	
8:00 to 8:15	0	0	0	0	38	1	0	39	3	0	0	3	0	0	0	0	5	0	0	5	0	0	0	0	2	0	0	2	0	0	0	0	5	0	0	5	1	1	7	2	21	
8:15 to 8:30	0	0	0	0	42	1	0	43	5	0	0	5	3	0	0	3	5	0	0	5	0	0	0	0	2	0	0	2	0	0	0	0	3	0	0	3	0	7	7	0	20	
8:30 to 8:45	0	0	0	0	56	0	0	56	3	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	4	0	3	6	0	3	9	1	26	
8:45 to 9:00	0	0	0	0	52	0	0	52	4	0	0	4	0	0	0	0	6	0	0	6	0	0	0	0	1	0	0	1	0	0	0	0	2	2	4	1	2	0	15	0	26	
9:00 to 9:15	0	0	0	0	44	0	0	44	4	0	0	4	0	0	0	0	4	0	0	4	0	0	0	0	2	0	0	2	0	0	0	0	0	1	1	1	1	0	12	1	17	
9:15 to 9:30	0	0	0	0	53	0	0	53	3	0	0	3	1	0	0	1	4	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	4	2	3	5	2	19	
AM Totals	0	0	0	0	431	6	0	437	32	0	0	32	10	0	0	10	39	2	0	41	0	0	0	0	17	1	0	18	0	0	0	0	21	9	13	39	6	23	66	11	188	
15:30 to 15:45	0	0	0	0	79	0	0	79	1	0	0	1	0	0	0	0	5	0	0	5	0	0	0	0	1	1	0	2	0	0	0	0	0	1	6	3	1	0	0	2	10	23
15:45 to 16:00	0	0	0	0	95	1	0	96	2	0	0	2	1	0	0	1	4	0	0	4	0	0	0	0	2	0	0	2	0	0	0	0	4	2	0	2	0	0	5	4	17	
16:00 to 16:15	0	0	0	0	88	1	0	89	2	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2	4	2	0	0	0	6	8	22	
16:15 to 16:30	0	0	0	0	100	0	0	100	1	0	0	1	1	0	0	1	3	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	8	6	16	
16:30 to 16:45	0	0	0	0	109	0	0	109	1	0	0	1	0	0	0	0	10	0	0	10	0	0	0	0	6	6	0	6	0	0	0	0	1	4	1	1	3	0	4	10	24	
16:45 to 17:00	0	0	0	0	92	0	0	92	1	0	0	1	0	0	0	0	10	0	0	10	0	0	0	0	6	6	0	6	0	0	0	0	0	2	2	1	0	0	0	2	9	
17:00 to 17:15	0	0	0	0	76	0	0	76	1	0	0	1	0	0	0	0	16	0	0	16	0	0	0	0	4	0	4	0	0	0	0	0	0	2	3	0	0	0	2	12	19	
17:15 to 17:30	0	0	0	0	110	1	0	111	3	0	0	3	1	0	0	1	9	0	0	9	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	1	5	6	
17:30 to 17:45	0	0	0	0	97	0	0	97	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	2	1	0	1	11	16	
17:45 to 18:00	0	0	0	0	97	0	0	97	1	0	0	1	1	0	0	1	5	0	0	5	0	0	0	0	4	0	0	4	0	0	0	0	2	0	3	1	0	0	3	12		
18:00 to 18:15	0	0	0	0	89	0	0	89	2	0	0	2	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	7	10	
18:15 to 18:30	0	0	0	0	77	0	0	77	1	0	0	1	1	0	0	1	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	7	11	
PM Totals	0	0	0	0	1109	3	0	1,112	16	0	0	16	6	0	0	6	73	0	0	73	0	0	0	0	30	1	0	31	0	0	0	0	10	23	17	9	4	0	39	80	155	

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 2. Worth St / Union Ln

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

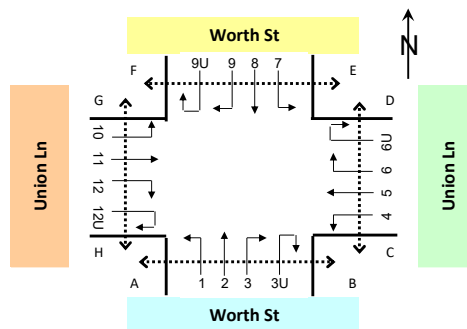


Approach	Worth St																Union Ln															
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total
6:30 to 7:30	13	1	0	14	137	3	0	140	0	0	0	0	0	0	0	0	7	0	0	7	2	0	0	2	9	0	0	9	0	0	0	0
6:45 to 7:45	18	1	0	19	160	3	0	163	0	0	0	0	0	0	0	0	6	0	0	6	2	0	0	2	5	0	0	5	0	0	0	0
7:00 to 8:00	21	1	0	22	178	3	0	181	0	0	0	0	0	0	0	0	10	0	0	10	3	1	0	4	5	0	0	5	0	0	0	0
7:15 to 8:15	30	1	0	31	188	5	0	193	0	0	0	0	1	0	0	1	12	0	0	12	3	1	0	4	8	0	0	8	0	0	0	0
7:30 to 8:30	31	0	0	31	210	3	0	213	0	0	0	0	1	0	0	1	12	1	0	13	1	1	0	2	9	0	0	9	0	0	0	0
7:45 to 8:45	36	0	0	36	243	5	0	248	0	0	0	0	1	0	0	1	12	2	0	14	1	1	0	2	13	1	0	14	0	0	0	0
8:00 to 9:00	43	0	0	43	286	5	0	291	0	0	0	0	1	0	0	1	10	2	0	12	0	0	0	0	11	1	0	12	0	0	0	0
8:15 to 9:15	45	0	0	45	358	6	0	364	0	0	0	0	1	0	0	1	11	2	0	13	0	0	0	0	11	1	0	12	0	0	0	0
8:30 to 9:30	43	0	0	43	384	8	0	392	0	0	0	0	1	0	0	1	18	1	0	19	0	0	0	0	14	1	0	15	0	0	0	0
AM Totals	87	1	0	88	731	14	0	745	0	0	0	0	2	0	0	2	37	2	0	39	3	1	0	4	32	1	0	33	0	0	0	0
15:30 to 16:30	8	0	0	8	570	1	0	571	0	0	0	0	0	0	0	0	39	2	0	41	2	0	0	2	54	2	0	56	0	0	0	0
15:45 to 16:45	10	0	0	10	570	1	0	571	0	0	0	0	0	0	0	0	41	2	0	43	2	0	0	2	53	2	0	55	0	0	0	0
16:00 to 17:00	11	0	0	11	576	0	0	576	0	0	0	0	0	0	0	0	44	2	0	46	2	0	0	2	57	1	0	58	0	0	0	0
16:15 to 17:15	11	0	0	11	567	0	0	567	0	0	0	0	0	0	0	0	59	1	0	60	3	0	0	3	61	0	0	61	0	0	0	0
16:30 to 17:30	17	0	0	17	545	0	0	545	0	0	0	0	0	0	0	0	62	0	0	62	1	0	0	1	56	0	0	56	0	0	0	0
16:45 to 17:45	15	0	0	15	558	0	0	558	0	0	0	0	0	0	0	0	64	0	0	64	1	0	0	1	49	0	0	49	0	0	0	0
17:00 to 18:00	17	0	0	17	524	0	0	524	0	0	0	0	0	0	0	0	69	0	0	69	1	0	0	1	52	0	0	52	0	0	0	0
17:15 to 18:15	20	0	0	20	518	0	0	518	0	0	0	0	0	0	0	0	60	0	0	60	0	0	0	0	64	0	0	64	0	0	0	0
17:30 to 18:30	15	0	0	15	502	0	0	502	0	0	0	0	0	0	0	0	53	0	0	53	0	0	0	0	60	1	0	61	0	0	0	0
PM Totals	40	0	0	40	1,617	1	0	1,618	0	0	0	0	0	0	0	0	154	2	0	156	3	0	0	3	170	3	0	173	0	0	0	0

Approach	Worth St																Union Ln																Crossing Pedestrians									
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)													
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total	
6:30 to 7:30	0	0	0	0	62	4	0	66	5	0	0	5	2	0	0	2	9	0	0	9	0	0	0	0	4	0	0	4	0	0	0	0	0	2	3	7	0	4	1	3	20	
6:45 to 7:45	0	0	0	0	80	4	0	84	5	0	0	5	6	0	0	6	9	0	0	9	0	0	0	0	7	0	0	7	0	0	0	0	3	6	2	15	0	6	7	4	43	
7:00 to 8:00	0	0	0	0	114	1	0	115	8	0	0	8	6	0	0	6	8	1	0	9	0	0	0	0	7	1	0	8	0	0	0	0	6	5	0	15	0	7	11	5	49	
7:15 to 8:15	0	0	0	0	136	1	0	137	11	0	0	11	5	0	0	5	10	1	0	11	0	0	0	0	8	1	0	9	0	0	0	0	11	5	0	18	1	6	17	5	63	
7:30 to 8:30	0	0	0	0	164	2	0	166	13	0	0	13	7	0	0	7	13	1	0	14	0	0	0	0	7	1	0	8	0	0	0	0	14	4	0	20	1	13	24	4	80	
7:45 to 8:45	0	0	0	0	188	2	0	190	15	0	0	15	3	0	0	3	15	1	0	16	0	0	0	0	7	1	0	8	0	0	0	0	15	0	3	18	1	14	27	4	82	
8:00 to 9:00	0	0	0	0	188	2	0	190	15	0	0	15	3	0	0	3	19	0	0	19	0	0	0	0	8	0	0	8	0	0	0	0	14	2	7	15	3	11	38	3	93	
8:15 to 9:15	0	0	0	0	194	1	0	195	16	0	0	16	3	0	0	3	18	0	0	18	0	0	0	0	8	0	0	8	0	0	0	0	9	3	8	11	3	10	43	2	89	
8:30 to 9:30	0	0	0	0	205	0	0	205	14	0	0	14	1	0	0	1	17	1	0	18	0	0	0	0	6	0	0	6	0	0	0	0	7	3	10	12	5	6	41	4	88	
AM Totals	0	0	0	0	431	6	0	437	32	0	0	32	10	0	0	10	39	2	0	41	0	0	0	0	17	1	0	18	0	0	0	0	21	9	13	39	6	23	66	11	188	
15:30 to 16:30	0	0	0	0	362	2	0	364	6	0	0	6	2	0	0	2	13	0	0	13	0	0	0	0	5	1	0	6	0	0	0	0	7	13	6	3	0	0	21	28	79	
15:45 to 16:45	0	0	0	0	392	2	0	394	6	0	0	6	2	0	0	2	18	0	0	18	0	0	0	0	10	0	0	10	0	0	0	0	7	11	4	3	3	0	23	28	79	
16:00 to 17:00	0	0	0	0	389	1	0	390	5	0	0	5	1	0	0	1	24	0	0	24	0	0	0	0	14	0	0	14	0	0	0	0	3	11	6	2	3	0	20	26	71	
16:15 to 17:15	0	0	0	0	377	0	0	377	4	0	0	4	1	0	0	1	39	0	0	39	0	0	0	0	17	0	0	17	0	0	0	0	1	9	7	2	3	0	16	30	68	
16:30 to 17:30	0	0	0	0	387	1	0	388	6	0	0	6	1	0	0	1	45	0	0	45	0	0	0	0	19	0	0	19	0	0	0	0	1	8	6	2	3	0	9	29	58	
16:45 to 17:45	0	0	0	0	375	1	0	376	5	0	0	5	2	0	0	2	36	0	0	36	0	0	0	0	15	0	0	15	0	0	0	0	0	4	6	3	1	0	6	30	50	
17:00 to 18:00	0	0	0	0	380	1	0	381	5	0	0	5	3	0	0	3	31	0	0	31	0	0	0	0	13	0	0	13	0	0	0	0	2	2	7	3	1	0	7	31	53	
17:15 to 18:15	0	0	0	0	393	1	0	394	6	0	0	6	3	0	0	3	20	0	0	20	0	0	0	0	9	0	0	9	0	0	0	0	2	1	5	4	1	0	7	21	41	
17:30 to 18:30	0	0	0	0	360	0	0	360	4	0	0	4	3	0	0	3	15	0	0	15	0	0	0	0	6	0	0	6	0	0	0	0	2	2	5	4	1	0	9	23	46	
PM Totals	0	0	0	0	1,109	3	0	1,112	16	0	0	16	6	0	0	6	73	0	0	73	0	0	0	0	30	1	0	31	0	0	0	0	10	23	17	9	4	0	39	80	182	

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 2. Worth St / Union Ln

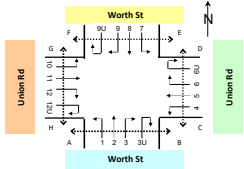
Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: Pedestrian Data



Direction	Pedestrians							
Time Period	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H
6:30 to 6:45	0	0	1	0	0	0	0	0
6:45 to 7:00	0	1	2	4	0	2	0	0
7:00 to 7:15	0	0	0	2	0	2	1	2
7:15 to 7:30	0	1	0	1	0	0	0	1
7:30 to 7:45	3	4	0	8	0	2	6	1
7:45 to 8:00	3	0	0	4	0	3	4	1
8:00 to 8:15	5	0	0	5	1	1	7	2
8:15 to 8:30	3	0	0	3	0	7	7	0
8:30 to 8:45	4	0	3	6	0	3	9	1
8:45 to 9:00	2	2	4	1	2	0	15	0
9:00 to 9:15	0	1	1	1	1	0	12	1
9:15 to 9:30	1	0	2	4	2	3	5	2
AM Totals	21	9	13	39	6	23	66	11
15:30 to 15:45	1	6	3	1	0	0	2	10
15:45 to 16:00	4	2	0	2	0	0	5	4
16:00 to 16:15	2	4	2	0	0	0	6	8
16:15 to 16:30	0	1	1	0	0	0	8	6
16:30 to 16:45	1	4	1	1	3	0	4	10
16:45 to 17:00	0	2	2	1	0	0	2	2
17:00 to 17:15	0	2	3	0	0	0	2	12
17:15 to 17:30	0	0	0	0	0	0	1	5
17:30 to 17:45	0	0	1	2	1	0	1	11
17:45 to 18:00	2	0	3	1	0	0	3	3
18:00 to 18:15	0	1	1	1	0	0	2	2
18:15 to 18:30	0	1	0	0	0	0	3	7
PM Totals	10	23	17	9	4	0	39	80

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 3. Union Rd / Worth St

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: 15 mins Data



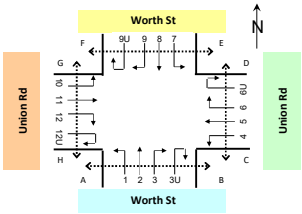
Classifications	Class 1	Class 2	Class 3
	Lights	Heavies	Buses

Approach	Worth St																Union Rd															
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total
6:30 to 6:45	5	1	0	6	2	0	0	2	1	0	0	1	0	0	0	0	2	0	0	2	9	0	0	9	0	0	0	0	0	0	0	0
6:45 to 7:00	3	0	0	3	4	0	0	4	4	0	0	4	0	0	0	0	3	0	0	3	3	0	0	3	8	0	0	8	0	0	0	0
7:00 to 7:15	5	0	0	5	2	0	0	2	3	0	0	3	0	0	0	0	1	0	0	1	12	1	0	13	22	0	0	22	0	0	0	0
7:15 to 7:30	8	0	0	8	4	0	0	4	2	0	0	2	0	0	0	0	1	0	0	1	4	0	0	4	22	2	0	24	0	0	0	0
7:30 to 7:45	4	0	0	4	6	0	0	6	4	0	0	4	0	0	0	0	1	0	0	1	7	0	0	7	20	0	0	20	0	0	0	0
7:45 to 8:00	3	0	0	3	4	0	0	4	4	0	0	4	0	0	0	0	1	0	0	1	7	0	0	7	22	0	0	22	0	0	0	0
8:00 to 8:15	3	0	0	3	4	1	0	5	4	0	0	4	0	0	0	0	2	1	0	3	10	1	0	11	40	0	0	40	0	0	0	0
8:15 to 8:30	5	0	0	5	11	0	0	11	5	0	0	5	0	0	0	0	5	0	0	5	4	1	0	5	40	0	0	40	0	0	0	0
8:30 to 8:45	1	0	0	1	5	0	0	5	3	0	0	3	0	0	0	0	4	0	0	4	4	1	0	5	43	2	0	45	0	0	0	0
8:45 to 9:00	3	0	0	3	5	0	0	5	7	0	0	7	0	0	0	0	7	0	0	7	9	0	0	9	44	0	0	44	0	0	0	0
9:00 to 9:15	2	0	0	2	5	0	0	5	16	0	0	16	0	0	0	0	12	0	0	12	11	0	0	11	72	1	0	73	0	0	0	0
9:15 to 9:30	2	0	0	2	5	1	0	6	4	0	0	4	0	0	0	0	12	0	0	12	10	0	0	10	55	2	0	57	0	0	0	0
AM Totals	44	1	0	45	57	2	0	59	57	0	0	57	0	0	0	0	49	1	0	50	83	4	0	87	397	7	0	404	0	0	0	0
15:30 to 15:45	1	0	0	1	8	0	0	8	5	0	0	5	0	0	0	0	7	0	0	7	10	0	0	10	94	0	0	94	0	0	0	0
15:45 to 16:00	3	0	0	3	2	0	0	2	5	1	0	6	0	0	0	0	9	0	0	9	15	0	0	15	100	1	0	101	0	0	0	0
16:00 to 16:15	2	0	0	2	9	0	0	9	3	0	0	3	0	0	0	0	4	0	0	4	13	0	0	13	87	1	0	88	0	0	0	0
16:15 to 16:30	5	0	0	5	9	0	0	9	4	0	0	4	0	0	0	0	7	0	0	7	20	0	0	20	108	0	0	108	0	0	0	0
16:30 to 16:45	5	0	0	5	5	0	0	5	4	0	0	4	0	0	0	0	7	0	0	7	16	0	0	16	94	0	0	94	0	0	0	0
16:45 to 17:00	6	0	0	6	3	0	0	3	3	0	0	3	0	0	0	0	7	0	0	7	22	0	0	22	106	0	0	106	0	0	0	0
17:00 to 17:15	5	0	0	5	4	0	0	4	3	0	0	3	0	0	0	0	9	0	0	9	30	0	0	30	105	0	0	105	0	0	0	0
17:15 to 17:30	7	1	0	8	8	0	0	8	5	0	0	5	0	0	0	0	3	0	0	3	14	0	0	14	88	0	0	88	0	0	0	0
17:30 to 17:45	6	0	0	6	6	0	0	6	2	0	0	2	0	0	0	0	7	0	0	7	18	0	0	18	89	0	0	89	0	0	0	0
17:45 to 18:00	5	0	0	5	7	0	0	7	4	0	0	4	0	0	0	0	2	0	0	2	23	0	0	23	69	0	0	69	0	0	0	0
18:00 to 18:15	0	0	0	0	5	0	0	5	4	0	0	4	0	0	0	0	6	0	0	6	18	0	0	18	81	0	0	81	0	0	0	0
18:15 to 18:30	0	0	0	0	1	0	0	1	2	0	0	2	0	0	0	0	4	0	0	4	19	0	0	19	79	0	0	79	0	0	0	0
PM Totals	45	1	0	46	67	0	0	67	44	1	0	45	0	0	0	0	72	0	0	72	218	1,100	0	218	1,100	2	0	1,102	0	0	0	0

Approach	Worth St																Union Rd																Crossing Pedestrians										
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 10 (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)														
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total		
6:30 to 6:45	10	0	0	10	1	0	0	1	5	0	0	5	0	0	0	0	8	12	1	0	13	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	3	1	0	1	0	0	7
6:45 to 7:00	14	3	0	17	0	0	0	0	3	0	0	3	0	0	0	0	15	0	0	15	37	0	0	37	2	0	0	2	0	0	0	0	0	1	1	3	1	0	1	0	0	7	
7:00 to 7:15	11	1	0	12	0	0	0	0	7	0	0	7	0	0	0	0	25	30	0	0	30	4	0	0	34	0	0	0	4	0	0	0	0	0	0	1	1	0	0	0	0	2	
7:15 to 7:30	13	0	0	13	0	0	0	0	3	0	0	3	0	0	0	0	28	2	0	30	36	0	0	36	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	1	5		
7:30 to 7:45	24	0	0	24	2	0	0	2	8	0	0	8	0	0	0	0	21	66	0	0	66	2	0	0	68	0	0	0	2	0	0	0	0	0	0	1	6	5	0	0	12		
7:45 to 8:00	48	1	0	49	2	0	0	2	8	1	0	9	0	0	0	0	24	0	0	24	91	1	0	92	3	0	0	3	0	0	0	0	0	0	0	3	0	0	1	0	4		
8:00 to 8:15	35	1	0	36	3	0	0	3	6	0	0	6	0	0	0	0	25	84	1	0	85	3	0	0	88	0	0	0	3	0	0	0	0	0	0	2	2	1	3	0	8		
8:15 to 8:30	37	1	0	38	1	0	0	1	8	0	0	8	0	0	0	0	27	1	0	28	104	3	0	107	4	0	0	4	0	0	0	0	2	1	0	1	0	2	2	10			
8:30 to 8:45	44	1	0	45	5	0	0	5	11	0	0	11	0	0	0	0	37	1	0	38	84	1	0	85	1	0	0	1	0	0	0	0	0	2	0	3	0	0	2	1	8		
8:45 to 9:00	39	0	0	39	7	0	0	7	5	0	0	5	0	0	0	0	49	78	1	0	79	10	0	0	10	0	0	0	0	0	0	0	1	0	4	1	0	6	1	13			
9:00 to 9:15	34	0	0	34	7	0	0	7	5	0	0	5	0	0	0	0	65	2	0	67	65	3	0	68	8	1	0	9	0	0	0	0	0	0	7	1	2	9	0	19			
9:15 to 9:30	50	0	0	50	5	0	0	5	11	0	0	11	0	0	0	0	41	59	2	0	61	4	0	0	65	4	0	0	4	0	0	0	1	0	0	4	0	4	2	1	12		
AM Totals	329	8	0	337	33	0	0	33	80	1	0	81	0	0	0	0	365	6	0	371	746	13	0	759	41	2	0	43	0	0	0	0	4	5	6	34	10	11	25	6	103		
15:30 to 15:45	49	0	0	49	1	0	0	1	34	0	0	34	0	0	0	0	31	0	0	31	56	0	0	56	4	1	0	5	0	0	0	0	0	0	0	2	1	1	0	5	2	7	
15:45 to 16:00	58	1	0	59	3	0	0	3	43	0	0	43	0	0	0	0	37	0	0	37	44	1	0	45	3	0	0	3	0	0	0	0	0	0	0	2	0	0	0	2	3	7	
16:00 to 16:15	54	1	0	55	3	0	0	3	42	1	0	43	0	0	0	0	52	0	0	52	34	1	0	35	5	0	0	5	0	0	0	0	2	1	5	2	1	0	3	6	20		
16:15 to 16:30	62	0	0	62	3	0	0	3	44	0	0	44	0	0	0	0	32	0	0	32	39	0	0	39	2	0	0	2	0	0	0	0	0	0	4	0	0	0	5	2	11		
16:30 to 16:45	62	1	0	63	7	0	0	7	50	0	0	50	0	0	0	0	41	0	0	41	44	0	0	44	3	0	0	3	0	0	0	2	0	0	0	2	0	2	4	10			
16:45 to 17:00	64	0	0	64	3	0	0	3	42	0	0	42	0	0	0	0	31	0	0	31	42	1	0	43	2	0	0	2	0	0	0	0	3	0	2	1	1	0	1	0	8		
17:00 to 17:15	48	0	0	48	2	0	0	2	46	0	0	46	0	0	0	0	36	0	0	36	36	1	0	37	3	0	0	3	0	0	0	1	1	4	0	2	1	1	11	21			
17:15 to 17:30	57	0	0	57	4	1	0	5	67	0	0	67	0	0	0	0	34	0	0	34	33	0	0	33	5	0	0	5	0	0	0	0	0	0	5	0	2	1	0	6	14		
17:30 to 17:45	50	0	0	50	3	0	0	3	54	0	0	54	0	0	0	0	52	0	0	52	38	0	0	38	6	0	0	6	0	0	0	1	1	0	2	1	1	0	2	6	13		
17:45 to 18:00	59	0	0	59	3	0	0	3	59	0	0	59	0	0	0	0	39	0	0	39	39	0	0	39	1	0	0	1	0	0	0	1	0	0	0	6	1	1	1	10			
18:00 to 18:15	58	0	0	58	3	0	0	3	41	0	0	41	0	0	0	0	47	0	0	47	33	0	0	33	1	0	0	1	0	0	0	0	1	1	0	0	1	1	2	6			
18:15 to 18:30	49	0	0	49	2	0	0	2	31	0	0	31	0	0	0	0	32	0	0	32	35	0	0	35	4	0	0	4	0	0	0	0	0	1	1	1	0	2	5	10			
PM Totals	670	3	0	673	37	1	0	38	553	1	0	554	0	0	0	0	425	0	0	425	473	4	0	477	39	1	0	40	0	0	0	10	1	26	10	15	4	21	48	130			

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 3. Union Rd / Worth St

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

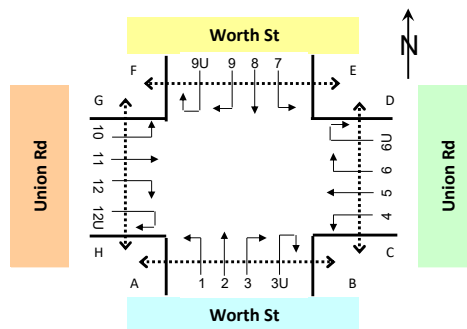


Approach	Worth St																Union Rd															
Direction	Direction 1 (Left Turn)				Direction 2 (Through)				Direction 3 (Right Turn)				Direction 3U (U Turn)				Direction 4 (Left Turn)				Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total	Lights	Heavies	Buses	Total
6:30 to 7:30	21	1	0	22	12	0	0	12	10	0	0	10	0	0	0	0	5	0	0	5	21	1	0	22	61	2	0	63	0	0	0	0
6:45 to 7:45	20	0	0	20	16	0	0	16	13	0	0	13	0	0	0	0	6	0	0	6	26	1	0	27	72	2	0	74	0	0	0	0
7:00 to 8:00	20	0	0	20	16	0	0	16	13	0	0	13	0	0	0	0	4	0	0	4	30	1	0	31	86	2	0	88	0	0	0	0
7:15 to 8:15	18	0	0	18	18	1	0	19	14	0	0	14	0	0	0	0	5	1	0	6	28	1	0	29	104	2	0	106	0	0	0	0
7:30 to 8:30	15	0	0	15	25	1	0	26	17	0	0	17	0	0	0	0	9	1	0	10	28	2	0	30	122	0	0	122	0	0	0	0
7:45 to 8:45	12	0	0	12	24	1	0	25	16	0	0	16	0	0	0	0	12	1	0	13	25	3	0	28	145	2	0	147	0	0	0	0
8:00 to 9:00	12	0	0	12	25	1	0	26	19	0	0	19	0	0	0	0	18	1	0	19	27	3	0	30	167	2	0	169	0	0	0	0
8:15 to 9:15	11	0	0	11	26	0	0	26	31	0	0	31	0	0	0	0	28	0	0	28	28	2	0	30	199	3	0	202	0	0	0	0
8:30 to 9:30	8	0	0	8	20	1	0	21	30	0	0	30	0	0	0	0	35	0	0	35	34	1	0	35	214	5	0	219	0	0	0	0
AM Totals	44	1	0	45	57	2	0	59	57	0	0	57	0	0	0	0	49	1	0	50	83	4	0	87	397	7	0	404	0	0	0	0
15:30 to 16:30	11	0	0	11	28	0	0	28	17	1	0	18	0	0	0	0	27	0	0	27	58	0	0	58	389	2	0	391	0	0	0	0
15:45 to 16:45	15	0	0	15	25	0	0	25	16	1	0	17	0	0	0	0	27	0	0	27	64	0	0	64	389	2	0	391	0	0	0	0
16:00 to 17:00	18	0	0	18	26	0	0	26	14	0	0	14	0	0	0	0	25	0	0	25	71	0	0	71	395	1	0	396	0	0	0	0
16:15 to 17:15	21	0	0	21	21	0	0	21	14	0	0	14	0	0	0	0	30	0	0	30	88	0	0	88	413	0	0	413	0	0	0	0
16:30 to 17:30	23	1	0	24	20	0	0	20	15	0	0	15	0	0	0	0	26	0	0	26	82	0	0	82	393	0	0	393	0	0	0	0
16:45 to 17:45	24	1	0	25	21	0	0	21	13	0	0	13	0	0	0	0	26	0	0	26	84	0	0	84	388	0	0	388	0	0	0	0
17:00 to 18:00	23	1	0	24	25	0	0	25	14	0	0	14	0	0	0	0	21	0	0	21	85	0	0	85	351	0	0	351	0	0	0	0
17:15 to 18:15	18	1	0	19	26	0	0	26	15	0	0	15	0	0	0	0	18	0	0	18	73	0	0	73	327	0	0	327	0	0	0	0
17:30 to 18:30	11	0	0	11	19	0	0	19	12	0	0	12	0	0	0	0	19	0	0	19	78	0	0	78	318	0	0	318	0	0	0	0
PM Totals	45	1	0	46	67	0	0	67	44	1	0	45	0	0	0	0	72	0	0	72	218	0	0	218	1,100	2	0	1,102	0	0	0	0

Approach	Worth St																Union Rd																Crossing Pedestrians									
Direction	Direction 7 (Left Turn)				Direction 8 (Through)				Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)				Direction 12 (Right Turn)				Direction 12U (U Turn)													
Time Period	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	Lghts	Heavies	Buses	Total	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H	Total	
6:30 to 7:30	48	4	0	52	1	0	0	1	18	0	0	18	0	0	0	0	76	2	0	78	115	1	0	116	6	1	0	7	0	0	0	0	1	1	5	4	1	2	0	1	15	
6:45 to 7:45	62	4	0	66	2	0	0	2	21	0	0	21	0	0	0	0	89	2	0	91	169	0	0	169	8	0	0	8	0	0	0	0	1	1	5	10	6	2	0	1	26	
7:00 to 8:00	96	2	0	98	4	0	0	4	26	1	0	27	0	0	0	0	98	2	0	100	223	1	0	224	9	0	0	9	0	0	0	0	0	0	2	12	6	1	1	1	23	
7:15 to 8:15	120	2	0	122	7	0	0	7	25	1	0	26	0	0	0	0	98	2	0	100	277	2	0	279	8	0	0	8	0	0	0	0	0	0	1	13	8	2	4	1	29	
7:30 to 8:30	144	3	0	147	8	0	0	8	30	1	0	31	0	0	0	0	97	1	0	98	345	5	0	350	12	0	0	12	0	0	0	0	2	1	1	12	7	3	6	2	34	
7:45 to 8:45	164	4	0	168	11	0	0	11	33	1	0	34	0	0	0	0	113	2	0	115	363	6	0	369	11	0	0	11	0	0	0	0	2	3	0	9	2	3	8	3	30	
8:00 to 9:00	155	3	0	158	16	0	0	16	30	0	0	30	0	0	0	0	138	2	0	140	350	6	0	356	18	0	0	18	0	0	0	0	2	4	0	10	3	3	13	4	39	
8:15 to 9:15	154	2	0	156	20	0	0	20	29	0	0	29	0	0	0	0	178	4	0	182	331	8	0	339	23	1	0	24	0	0	0	0	2	4	0	15	2	4	19	4	50	
8:30 to 9:30	167	1	0	168	24	0	0	24	32	0	0	32	0	0	0	0	192	3	0	195	286	7	0	293	23	1	0	24	0	0	0	0	1	3	0	18	2	6	19	3	52	
AM Totals	399	8	0	367	33	0	0	33	80	1	0	81	0	0	0	0	365	6	0	371	746	13	0	759	41	2	0	43	0	0	0	0	4	5	6	34	10	11	25	6	101	
15:30 to 16:30	223	2	0	225	10	0	0	10	163	1	0	164	0	0	0	0	153	0	0	153	173	2	0	175	14	1	0	15	0	0	0	0	2	1	11	5	2	0	11	13	45	
15:45 to 16:45	236	3	0	239	16	0	0	16	179	1	0	180	0	0	0	0	162	0	0	162	161	2	0	163	13	0	0	13	0	0	0	0	4	1	9	6	1	0	12	15	48	
16:00 to 17:00	242	2	0	244	16	0	0	16	178	1	0	179	0	0	0	0	156	0	0	156	159	2	0	161	12	0	0	12	0	0	0	0	7	1	11	5	2	0	11	12	49	
16:15 to 17:15	236	1	0	237	15	0	0	15	182	0	0	182	0	0	0	0	140	0	0	140	161	2	0	163	10	0	0	10	0	0	0	0	6	1	10	3	3	1	9	17	50	
16:30 to 17:30	231	1	0	232	16	1	0	17	205	0	0	205	0	0	0	0	142	0	0	142	155	2	0	157	13	0	0	13	0	0	0	0	6	1	11	3	5	2	4	21	53	
16:45 to 17:45	219	0	0	219	12	1	0	13	209	0	0	209	0	0	0	0	153	0	0	153	149	2	0	155	16	0	0	16	0	0	0	0	5	1	13	2	6	2	4	23	56	
17:00 to 18:00	214	0	0	214	12	1	0	13	226	0	0	226	0	0	0	0	161	0	0	161	146	1	0	147	15	0	0	15	0	0	0	0	3	1	11	1	11	3	4	24	58	
17:15 to 18:15	224	0	0	224	13	1	0	14	221	0	0	221	0	0	0	0	172	0	0	172	143	0	0	143	13	0	0	13	0	0	0	0	2	1	8	1	9	3	4	15	43	
17:30 to 18:30	216	0	0	216	11	0	0	11	185	0	0	185	0	0	0	0	170	0	0	170	145	0	0	145	12	0	0	12	0	0	0	0	2	1	4	2	8	2	6	14	39	
PM Totals	670	3	0	673	37	1	0	38	553	1	0	554	0	0	0	0	465	0	0	465	473	4	0	477	39	1	0	40	0	0	0	0	10	3	26	10	15	4	21	48	137	

Job No. : N5611
Client : Varga Traffic Planning
Suburb : Penrith
Location : 3. Union Rd / Worth St

Day/Date : Thu, 13th February 2020
Weather : Fine
Description : Classified Intersection Count
 : Pedestrian Data



Direction	Pedestrians							
Time Period	B to A	A to B	D to C	C to D	F to E	E to F	H to G	G to H
6:30 to 6:45	0	0	1	0	0	0	0	0
6:45 to 7:00	1	1	3	1	0	1	0	0
7:00 to 7:15	0	0	1	1	0	0	0	0
7:15 to 7:30	0	0	0	2	1	1	0	1
7:30 to 7:45	0	0	1	6	5	0	0	0
7:45 to 8:00	0	0	0	3	0	0	1	0
8:00 to 8:15	0	0	0	2	2	1	3	0
8:15 to 8:30	2	1	0	1	0	2	2	2
8:30 to 8:45	0	2	0	3	0	0	2	1
8:45 to 9:00	0	1	0	4	1	0	6	1
9:00 to 9:15	0	0	0	7	1	2	9	0
9:15 to 9:30	1	0	0	4	0	4	2	1
AM Totals	4	5	6	34	10	11	25	6
15:30 to 15:45	0	0	2	1	1	0	1	2
15:45 to 16:00	0	0	0	2	0	0	2	3
16:00 to 16:15	2	1	5	2	1	0	3	6
16:15 to 16:30	0	0	4	0	0	0	5	2
16:30 to 16:45	2	0	0	2	0	0	2	4
16:45 to 17:00	3	0	2	1	1	0	1	0
17:00 to 17:15	1	1	4	0	2	1	1	11
17:15 to 17:30	0	0	5	0	2	1	0	6
17:30 to 17:45	1	0	2	1	1	0	2	6
17:45 to 18:00	1	0	0	0	6	1	1	1
18:00 to 18:15	0	1	1	0	0	1	1	2
18:15 to 18:30	0	0	1	1	1	0	2	5
PM Totals	10	3	26	10	15	4	21	48

APPENDIX C

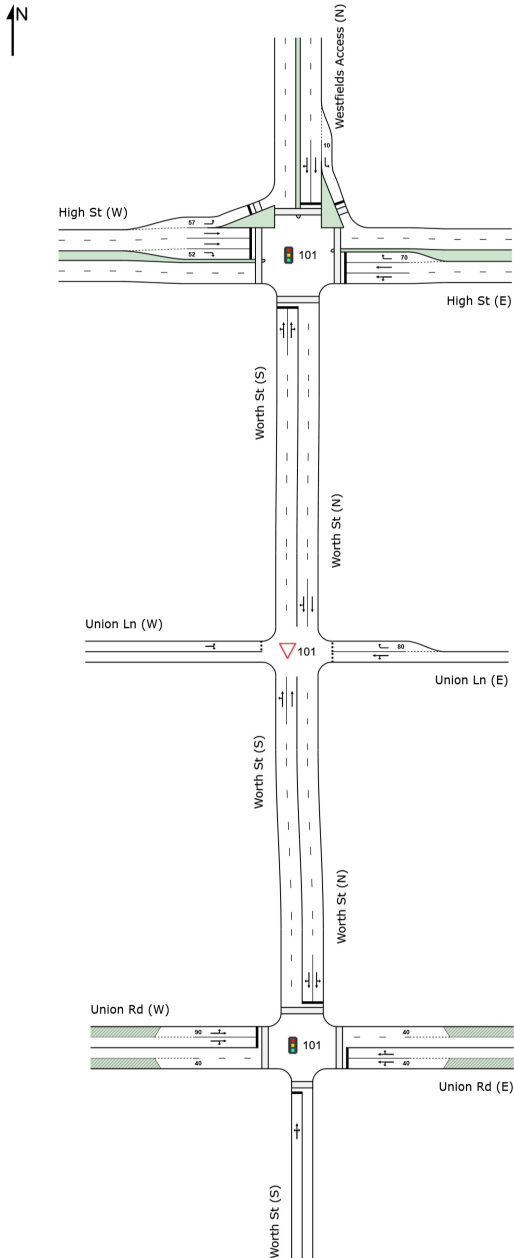
SIDRA MOVEMENT SUMMARIES




NETWORK LAYOUT

Network: N101 [Existing Network AM 2020]

Existing Network AM 2020

Network Category: (None)



SITES IN NETWORK		
Site ID	CCG ID	Site Name
 101	NA	HIG_WORX AM 2020
 101	NA	WOR_UNIX AM 2020
 101	NA	UNI_WORX AM 2020

SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: VARGA TRAFFIC PLANNING | Created: Wednesday, 1 April 2020 7:41:31 AM

Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Existing Network 2020.sip8

MOVEMENT SUMMARY

 Site: 101 [HIG_WORX AM 2020]

 Network: N101 [Existing Network AM 2020]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	147	5.4	147	5.4	0.403	25.4	LOS B	4.2	30.3	0.89	0.78	0.89	21.1
2	T1	221	0.0	221	0.0	0.403	26.2	LOS B	4.2	30.3	0.95	0.81	0.95	13.6
3	R2	55	3.6	55	3.6	0.403	34.3	LOS C	3.9	27.5	1.00	0.82	1.00	15.4
Approach		423	2.4	423	2.4	0.403	27.0	LOS B	4.2	30.3	0.94	0.80	0.94	16.6
East: High St (E)														
4	L2	52	3.8	52	3.8	0.195	24.5	LOS B	1.7	12.4	0.78	0.68	0.78	14.7
5	T1	170	2.4	170	2.4	0.195	19.9	LOS B	1.8	12.7	0.78	0.64	0.78	25.4
6	R2	129	0.0	129	0.0	0.194	13.6	LOS A	1.3	9.4	0.65	0.70	0.65	23.5
Approach		351	1.7	351	1.7	0.195	18.2	LOS B	1.8	12.7	0.73	0.67	0.73	23.4
North: Westfields Access (N)														
7	L2	20	0.0	20	0.0	0.027	14.1	LOS A	0.2	1.5	0.61	0.63	0.61	24.9
8	T1	41	0.0	41	0.0	0.077	20.6	LOS B	0.6	4.5	0.77	0.58	0.77	11.3
9	R2	50	0.0	50	0.0	0.221	32.6	LOS C	1.0	6.7	0.90	0.74	0.90	17.6
Approach		111	0.0	111	0.0	0.221	24.9	LOS B	1.0	6.7	0.80	0.66	0.80	16.9
West: High St (W)														
10	L2	185	0.0	185	0.0	0.389	26.0	LOS B	3.2	22.1	0.84	0.77	0.84	19.7
11	T1	233	5.6	233	5.6	0.206	20.0	LOS B	1.8	13.5	0.78	0.63	0.78	25.8
12	R2	129	0.0	129	0.0	0.192	13.6	LOS A	1.3	9.4	0.65	0.70	0.65	24.5
Approach		547	2.4	547	2.4	0.389	20.5	LOS B	3.2	22.1	0.77	0.69	0.77	23.2
All Vehicles		1432	2.0	1432	2.0	0.403	22.2	LOS B	4.2	30.3	0.81	0.72	0.81	20.7

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	59	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	11	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P3B	North Slip/Bypass Lane Crossing	6	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	107	29.4	LOS C	0.2	0.2	0.92	0.92
P4B	West Slip/Bypass Lane Crossing	59	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		246	29.3	LOS C			0.92	0.92

MOVEMENT SUMMARY

 Site: 101 [HIG_WORX PM 2020]

 Network: N101 [Existing Network PM 2020]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	324	0.0	324	0.0	0.330	19.5	LOS B	8.1	56.8	0.69	0.75	0.69	23.7
2	T1	268	0.0	268	0.0	0.330	20.8	LOS B	8.1	56.8	0.78	0.72	0.78	16.0
3	R2	63	0.0	63	0.0	0.330	26.7	LOS B	7.1	49.8	0.80	0.71	0.80	18.8
Approach		655	0.0	655	0.0	0.330	20.8	LOS B	8.1	56.8	0.73	0.73	0.73	20.3
East: High St (E)														
4	L2	49	0.0	49	0.0	0.415	45.0	LOS D	5.5	38.5	0.90	0.75	0.90	9.1
5	T1	327	0.6	327	0.6	0.415	40.4	LOS C	5.5	39.0	0.90	0.75	0.90	17.1
6	R2	168	0.0	168	0.0	0.442	35.5	LOS C	4.4	30.7	0.86	0.76	0.86	13.4
Approach		544	0.4	544	0.4	0.442	39.3	LOS C	5.5	39.0	0.88	0.75	0.88	15.4
North: Westfields Access (N)														
7	L2	155	0.0	155	0.0	0.283	13.5	LOS A	2.1	15.0	0.49	0.65	0.49	25.5
8	T1	268	0.0	268	0.0	0.399	15.0	LOS B	4.8	33.8	0.57	0.48	0.57	14.3
9	R2	253	0.0	253	0.0	0.717	37.5	LOS C	7.8	54.4	0.89	0.87	0.95	16.0
Approach		676	0.0	676	0.0	0.717	23.1	LOS B	7.8	54.4	0.67	0.67	0.69	17.3
West: High St (W)														
10	L2	251	0.0	251	0.0	0.710	50.8	LOS D	8.3	58.0	0.98	0.86	1.03	12.8
11	T1	223	0.9	223	0.9	0.245	38.5	LOS C	3.1	22.0	0.85	0.68	0.85	17.8
12	R2	78	1.3	78	1.3	0.247	34.2	LOS C	1.9	13.6	0.85	0.73	0.85	13.8
Approach		552	0.5	552	0.5	0.710	43.5	LOS D	8.3	58.0	0.91	0.77	0.93	14.8
All Vehicles		2427	0.2	2427	0.2	0.717	30.7	LOS C	8.3	58.0	0.79	0.73	0.80	16.6

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

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

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

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

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	46	51.8	LOS E	0.1	0.1	0.95	0.95	
P2	East Full Crossing	23	51.7	LOS E	0.1	0.1	0.95	0.95	
P3	North Full Crossing	8	51.7	LOS E	0.0	0.0	0.95	0.95	
P3B	North Slip/Bypass Lane Crossing	6	51.7	LOS E	0.0	0.0	0.95	0.95	
P4	West Full Crossing	79	51.8	LOS E	0.2	0.2	0.95	0.95	
P4B	West Slip/Bypass Lane Crossing	59	51.8	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		221	51.8	LOS E			0.95	0.95	

MOVEMENT SUMMARY

Site: 101 [WOR_UNIX AM 2020]

Network: N101 [Existing Network AM 2020]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	43	0.0	43	0.0	0.113	4.3	LOS A	0.0	0.0	0.00	0.11	0.00	46.0
2	T1	392	2.0	392	2.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	46.5
Approach		435	1.8	435	1.8	0.113	0.4	NA	0.0	0.0	0.00	0.05	0.00	46.3
East: Union Ln (E)														
4	L2	19	5.3	19	5.3	0.018	5.0	LOS A	0.0	0.2	0.21	0.50	0.21	43.7
5	T1	1	0.0	1	0.0	0.018	8.3	LOS A	0.0	0.2	0.21	0.50	0.21	45.0
6	R2	15	6.7	15	6.7	0.034	10.4	LOS A	0.1	0.4	0.57	0.72	0.57	39.0
Approach		35	5.7	35	5.7	0.034	7.4	LOS A	0.1	0.4	0.36	0.59	0.36	41.6
North: Worth St (N)														
8	T1	205	0.0	205	0.0	0.060	0.2	LOS A	0.1	0.4	0.05	0.03	0.05	45.6
9	R2	14	0.0	14	0.0	0.060	6.2	LOS A	0.1	0.4	0.11	0.08	0.11	44.5
Approach		219	0.0	219	0.0	0.060	0.6	NA	0.1	0.4	0.05	0.04	0.05	45.4
West: Union Ln (W)														
10	L2	18	5.6	18	5.6	0.029	5.3	LOS A	0.0	0.3	0.30	0.54	0.30	34.2
12	R2	6	0.0	6	0.0	0.029	10.3	LOS A	0.0	0.3	0.30	0.54	0.30	34.2
Approach		24	4.2	24	4.2	0.029	6.5	LOS A	0.0	0.3	0.30	0.54	0.30	34.2
All Vehicles		713	1.5	713	1.5	0.113	1.0	NA	0.1	0.4	0.04	0.09	0.04	44.1

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

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

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

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

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

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

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

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Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Existing Network 2020.sip8

MOVEMENT SUMMARY

Site: 101 [WOR_UNIX PM 2020]

Network: N101 [Existing Network PM 2020]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Worth St (S)														
1	L2	17	0.0	17	0.0	0.208	4.3	LOS A	0.0	0.0	0.00	0.04	0.00	47.3
2	T1	545	0.0	545	0.0	0.208	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	48.8
Approach		562	0.0	562	0.0	0.208	0.1	NA	0.0	0.0	0.00	0.02	0.00	48.6
East: Union Ln (E)														
4	L2	62	0.0	62	0.0	0.090	5.3	LOS A	0.1	0.7	0.29	0.53	0.29	43.3
5	T1	1	0.0	1	0.0	0.090	12.5	LOS A	0.1	0.7	0.29	0.53	0.29	44.8
6	R2	56	1.8	56	1.8	0.264	17.9	LOS B	0.3	2.2	0.75	0.92	0.84	33.6
Approach		119	0.8	119	0.8	0.264	11.3	LOS A	0.3	2.2	0.50	0.71	0.55	38.2
North: Worth St (N)														
8	T1	388	0.3	388	0.3	0.158	0.1	LOS A	0.0	0.2	0.02	0.01	0.02	48.4
9	R2	6	0.0	6	0.0	0.158	7.1	LOS A	0.0	0.2	0.04	0.02	0.04	46.5
Approach		394	0.3	394	0.3	0.158	0.2	NA	0.0	0.2	0.02	0.01	0.02	48.3
West: Union Ln (W)														
10	L2	45	0.0	45	0.0	0.172	5.6	LOS A	0.2	1.2	0.43	0.62	0.43	30.5
12	R2	19	0.0	19	0.0	0.172	17.1	LOS B	0.2	1.2	0.43	0.62	0.43	30.5
Approach		64	0.0	64	0.0	0.172	9.0	LOS A	0.2	1.2	0.43	0.62	0.43	30.5
All Vehicles		1139	0.2	1139	0.2	0.264	1.8	NA	0.3	2.2	0.08	0.12	0.09	41.7

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

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

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

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

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

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

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

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Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Existing Network 2020.sip8

MOVEMENT SUMMARY

 Site: 101 [UNI_WORX AM 2020]

 Network: N101 [Existing Network AM 2020]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	8	0.0	8	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.7
2	T1	21	4.8	21	4.8	0.368	35.1	LOS C	1.3	8.9	0.98	0.74	24.7
3	R2	30	0.0	30	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.6
Approach		59	1.7	59	1.7	0.368	38.0	LOS C	1.3	8.9	0.98	0.74	30.5
East: Union Rd (E)													
4	L2	35	0.0	35	0.0	0.076	14.8	LOS B	0.8	5.5	0.56	0.56	42.3
5	T1	35	2.9	35	2.9	0.076	10.2	LOS A	0.8	5.5	0.56	0.56	42.7
6	R2	219	2.3	219	2.3	0.550	22.7	LOS B	3.7	26.3	0.82	0.80	31.0
Approach		289	2.1	289	2.1	0.550	20.3	LOS B	3.7	26.3	0.76	0.74	34.6
North: Worth St (N)													
7	L2	168	0.6	168	0.6	0.530	34.1	LOS C	3.4	24.2	0.98	0.80	27.2
8	T1	24	0.0	24	0.0	0.172	27.5	LOS B	1.0	7.2	0.89	0.71	29.0
9	R2	32	0.0	32	0.0	0.172	31.8	LOS C	1.0	7.2	0.89	0.71	28.7
Approach		224	0.4	224	0.4	0.530	33.1	LOS C	3.4	24.2	0.96	0.78	27.6
West: Union Rd (W)													
10	L2	195	1.5	195	1.5	0.143	7.3	LOS A	1.2	8.2	0.31	0.62	41.8
11	T1	293	2.4	293	2.4	0.354	12.1	LOS A	4.1	29.6	0.66	0.58	42.7
12	R2	24	4.2	24	4.2	0.354	16.7	LOS B	4.1	29.6	0.66	0.58	42.2
Approach		512	2.1	512	2.1	0.354	10.5	LOS A	4.1	29.6	0.53	0.60	42.5
All Vehicles		1084	1.8	1084	1.8	0.550	19.3	LOS B	4.1	29.6	0.70	0.68	36.4

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91

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 [UNI_WORX PM 2020]

 Network: N101 [Existing Network PM 2020]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows	Arrival Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed			
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec	Vehicles veh	Distance m					km/h
South: Worth St (S)														
1	L2	24	0.0	24	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	0.78	1.08	26.3
2	T1	20	5.0	20	5.0	0.605	62.3	LOS E	2.2	15.3	1.00	0.78	1.08	18.1
3	R2	15	0.0	15	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	0.78	1.08	26.2
Approach		59	1.7	59	1.7	0.605	65.3	LOS E	2.2	15.3	1.00	0.78	1.08	24.0
East: Union Rd (E)														
4	L2	26	0.0	26	0.0	0.093	14.8	LOS B	1.5	10.7	0.45	0.44	0.45	42.9
5	T1	82	0.0	82	0.0	0.093	10.2	LOS A	1.5	10.7	0.45	0.44	0.45	43.3
6	R2	393	0.0	393	0.0	0.661	22.8	LOS B	9.1	63.9	0.72	0.80	0.72	31.0
Approach		501	0.0	501	0.0	0.661	20.3	LOS B	9.1	63.9	0.67	0.72	0.67	34.4
North: Worth St (N)														
7	L2	232	0.4	232	0.4	0.655	51.5	LOS D	7.4	52.0	0.96	0.82	0.97	22.1
8	T1	17	5.9	17	5.9	0.624	46.6	LOS D	7.1	50.1	0.97	0.82	0.97	22.5
9	R2	205	0.0	205	0.0	0.624	50.9	LOS D	7.1	50.1	0.97	0.82	0.97	22.3
Approach		454	0.4	454	0.4	0.655	51.1	LOS D	7.4	52.0	0.97	0.82	0.97	22.2
West: Union Rd (W)														
10	L2	142	0.0	142	0.0	0.091	6.2	LOS A	0.8	5.6	0.18	0.58	0.18	42.9
11	T1	157	1.3	157	1.3	0.153	10.7	LOS A	2.5	17.8	0.47	0.41	0.47	43.5
12	R2	13	0.0	13	0.0	0.153	15.2	LOS B	2.5	17.8	0.47	0.41	0.47	42.9
Approach		312	0.6	312	0.6	0.153	8.8	LOS A	2.5	17.8	0.34	0.49	0.34	43.3
All Vehicles		1326	0.4	1326	0.4	0.661	30.1	LOS C	9.1	63.9	0.71	0.70	0.71	30.4

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		53	51.7	LOS E			0.95	0.95

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

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

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

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP AM 2020]

 Network: N101 [Proposed Network AM 2020 (Sydney average rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	183	4.4	183	4.4	0.412	24.0	LOS B	4.6	33.0	0.87	0.78	0.87	21.6
2	T1	221	0.0	221	0.0	0.412	25.6	LOS B	4.6	33.0	0.95	0.81	0.95	13.8
3	R2	61	3.3	61	3.3	0.412	33.5	LOS C	4.1	29.2	1.00	0.83	1.00	15.7
Approach		465	2.2	465	2.2	0.412	26.0	LOS B	4.6	33.0	0.93	0.80	0.93	17.2
East: High St (E)														
4	L2	57	3.5	57	3.5	0.221	26.3	LOS B	1.8	13.3	0.81	0.70	0.81	13.9
5	T1	170	2.4	170	2.4	0.221	21.6	LOS B	1.9	13.6	0.81	0.66	0.81	24.3
6	R2	129	0.0	129	0.0	0.196	14.1	LOS A	1.4	9.6	0.67	0.70	0.67	23.1
Approach		356	1.7	356	1.7	0.221	19.6	LOS B	1.9	13.6	0.76	0.68	0.76	22.4
North: Westfields Access (N)														
7	L2	20	0.0	20	0.0	0.026	13.1	LOS A	0.2	1.4	0.58	0.62	0.58	25.9
8	T1	41	0.0	41	0.0	0.074	19.7	LOS B	0.6	4.4	0.76	0.57	0.76	11.6
9	R2	50	0.0	50	0.0	0.222	32.7	LOS C	1.0	6.7	0.90	0.74	0.90	17.6
Approach		111	0.0	111	0.0	0.222	24.4	LOS B	1.0	6.7	0.79	0.65	0.79	17.1
West: High St (W)														
10	L2	185	0.0	185	0.0	0.423	27.8	LOS B	3.3	23.0	0.87	0.78	0.87	19.0
11	T1	233	5.6	233	5.6	0.228	21.7	LOS B	1.9	14.1	0.82	0.65	0.82	24.7
12	R2	137	0.0	137	0.0	0.207	14.1	LOS A	1.5	10.3	0.67	0.71	0.67	24.0
Approach		555	2.3	555	2.3	0.423	21.9	LOS B	3.3	23.0	0.80	0.71	0.80	22.4
All Vehicles		1487	2.0	1487	2.0	0.423	22.8	LOS B	4.6	33.0	0.83	0.73	0.83	20.4

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

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

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

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

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	
P2	East Full Crossing	61	29.3	LOS C	0.1	0.1	0.92	0.92	
P3	North Full Crossing	54	29.3	LOS C	0.1	0.1	0.92	0.92	
P3B	North Slip/Bypass Lane Crossing	56	29.3	LOS C	0.1	0.1	0.92	0.92	
P4	West Full Crossing	157	29.4	LOS C	0.3	0.3	0.92	0.92	
P4B	West Slip/Bypass Lane Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP PM 2020]

 Network: N101 [Proposed Network PM 2020 (Sydney average rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	341	0.0	341	0.0	0.349	19.5	LOS B	8.5	59.2	0.68	0.75	0.68	23.8
2	T1	268	0.0	268	0.0	0.349	21.9	LOS B	8.5	59.2	0.79	0.73	0.79	15.5
3	R2	67	0.0	67	0.0	0.349	28.0	LOS B	7.3	51.3	0.82	0.73	0.82	18.1
Approach		676	0.0	676	0.0	0.349	21.3	LOS B	8.5	59.2	0.74	0.74	0.74	20.1
East: High St (E)														
4	L2	55	0.0	55	0.0	0.474	48.1	LOS D	5.8	40.7	0.93	0.78	0.93	8.6
5	T1	327	0.6	327	0.6	0.474	43.5	LOS D	5.9	41.3	0.93	0.77	0.93	16.2
6	R2	168	0.0	168	0.0	0.391	33.0	LOS C	4.1	29.0	0.84	0.76	0.84	14.0
Approach		550	0.4	550	0.4	0.474	40.8	LOS C	5.9	41.3	0.90	0.77	0.90	15.0
North: Westfields Access (N)														
7	L2	155	0.0	155	0.0	0.251	12.2	LOS A	2.0	13.9	0.46	0.64	0.46	26.8
8	T1	268	0.0	268	0.0	0.402	16.1	LOS B	5.0	35.1	0.59	0.50	0.59	13.5
9	R2	253	0.0	253	0.0	0.769	43.7	LOS D	8.5	59.8	0.93	0.92	1.06	14.4
Approach		676	0.0	676	0.0	0.769	25.6	LOS B	8.5	59.8	0.69	0.69	0.74	16.2
West: High St (W)														
10	L2	251	0.0	251	0.0	0.786	56.5	LOS E	8.9	62.2	1.00	0.92	1.14	11.8
11	T1	223	0.9	223	0.9	0.276	41.4	LOS C	3.2	22.9	0.88	0.70	0.88	16.9
12	R2	86	1.2	86	1.2	0.234	32.1	LOS C	2.0	14.2	0.83	0.74	0.83	14.4
Approach		560	0.5	560	0.5	0.786	46.8	LOS D	8.9	62.2	0.93	0.81	0.99	14.0
All Vehicles		2462	0.2	2462	0.2	0.786	32.6	LOS C	8.9	62.2	0.80	0.75	0.83	16.0

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	96	51.9	LOS E	0.3	0.3	0.95	0.95
P2	East Full Crossing	73	51.8	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	58	51.8	LOS E	0.2	0.2	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	56	51.8	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	129	51.9	LOS E	0.4	0.4	0.95	0.95
P4B	West Slip/Bypass Lane Crossing	109	51.9	LOS E	0.3	0.3	0.95	0.95

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP AM 2020]

Network: N101 [Proposed Network AM 2020 (Sydney average rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Worth St (S)														
1	L2	71	0.0	71	0.0	0.121	4.3	LOS A	0.0	0.0	0.00	0.17	0.00	44.9
2	T1	392	2.0	392	2.0	0.121	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	45.1
Approach		463	1.7	463	1.7	0.121	0.7	NA	0.0	0.0	0.00	0.08	0.00	45.0
East: Union Ln (E)														
4	L2	19	5.3	19	5.3	0.018	5.1	LOS A	0.0	0.2	0.22	0.50	0.22	43.6
5	T1	1	0.0	1	0.0	0.018	8.7	LOS A	0.0	0.2	0.22	0.50	0.22	45.0
6	R2	15	6.7	15	6.7	0.037	11.4	LOS A	0.1	0.4	0.59	0.74	0.59	38.3
Approach		35	5.7	35	5.7	0.037	7.9	LOS A	0.1	0.4	0.38	0.60	0.38	41.2
North: Worth St (N)														
8	T1	205	0.0	205	0.0	0.066	0.3	LOS A	0.1	0.7	0.08	0.06	0.08	43.2
9	R2	27	0.0	27	0.0	0.066	6.4	LOS A	0.1	0.7	0.21	0.15	0.21	42.3
Approach		232	0.0	232	0.0	0.066	1.0	NA	0.1	0.7	0.09	0.07	0.09	42.9
West: Union Ln (W)														
10	L2	60	1.7	60	1.7	0.107	5.2	LOS A	0.2	1.2	0.31	0.56	0.31	33.5
12	R2	24	0.0	24	0.0	0.107	11.2	LOS A	0.2	1.2	0.31	0.56	0.31	33.5
Approach		84	1.2	84	1.2	0.107	6.9	LOS A	0.2	1.2	0.31	0.56	0.31	33.5
All Vehicles		814	1.4	814	1.4	0.121	1.7	NA	0.2	1.2	0.07	0.15	0.07	41.6

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

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

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

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

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

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

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

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Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Proposed Network 2020 (Sydney average rates).sip8

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP PM 2020]

Network: N101 [Proposed Network PM 2020 (Sydney average rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	50	0.0	50	0.0	0.226	4.3	LOS A	0.0	0.0	0.00	0.10	0.00	46.2
2	T1	545	0.0	545	0.0	0.226	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	47.0
Approach		595	0.0	595	0.0	0.226	0.4	NA	0.0	0.0	0.00	0.05	0.00	46.8
East: Union Ln (E)														
4	L2	62	0.0	62	0.0	0.096	5.4	LOS A	0.1	0.7	0.30	0.54	0.30	43.3
5	T1	1	0.0	1	0.0	0.096	13.3	LOS A	0.1	0.7	0.30	0.54	0.30	44.7
6	R2	56	1.8	56	1.8	0.292	19.5	LOS B	0.3	2.4	0.77	0.93	0.89	32.7
Approach		119	0.8	119	0.8	0.292	12.1	LOS A	0.3	2.4	0.52	0.72	0.57	37.6
North: Worth St (N)														
8	T1	388	0.3	388	0.3	0.178	0.3	LOS A	0.1	0.7	0.06	0.03	0.06	45.3
9	R2	20	0.0	20	0.0	0.178	7.3	LOS A	0.1	0.7	0.12	0.06	0.12	44.5
Approach		408	0.2	408	0.2	0.178	0.6	NA	0.1	0.7	0.06	0.03	0.06	45.1
West: Union Ln (W)														
10	L2	66	0.0	66	0.0	0.283	5.6	LOS A	0.3	1.9	0.43	0.63	0.44	29.8
12	R2	29	0.0	29	0.0	0.283	18.5	LOS B	0.3	1.9	0.43	0.63	0.44	29.8
Approach		95	0.0	95	0.0	0.283	9.5	LOS A	0.3	1.9	0.43	0.63	0.44	29.8
All Vehicles		1217	0.2	1217	0.2	0.292	2.3	NA	0.3	2.4	0.11	0.15	0.11	40.3

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

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

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

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

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

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

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

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Project: Z:\DATA\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Proposed Network 2020 (Sydney average rates).sip8

MOVEMENT SUMMARY

 Site: 101 [UNI_WORP AM 2020]

 Network: N101 [Proposed Network AM 2020 (Sydney average rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	8	0.0	8	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.7
2	T1	21	4.8	21	4.8	0.368	35.1	LOS C	1.3	8.9	0.98	0.74	24.7
3	R2	30	0.0	30	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.6
Approach		59	1.7	59	1.7	0.368	38.0	LOS C	1.3	8.9	0.98	0.74	30.5
East: Union Rd (E)													
4	L2	35	0.0	35	0.0	0.076	14.8	LOS B	0.8	5.5	0.56	0.56	42.3
5	T1	35	2.9	35	2.9	0.076	10.2	LOS A	0.8	5.5	0.56	0.56	42.7
6	R2	234	2.1	234	2.1	0.593	23.2	LOS B	4.0	28.7	0.84	0.84	30.8
Approach		304	2.0	304	2.0	0.593	20.7	LOS B	4.0	28.7	0.77	0.75	34.3
North: Worth St (N)													
7	L2	183	0.5	183	0.5	0.577	34.4	LOS C	3.8	26.5	0.99	0.81	27.1
8	T1	24	0.0	24	0.0	0.182	27.6	LOS B	1.1	7.6	0.89	0.71	29.0
9	R2	35	0.0	35	0.0	0.182	31.9	LOS C	1.1	7.6	0.89	0.71	28.7
Approach		242	0.4	242	0.4	0.577	33.3	LOS C	3.8	26.5	0.96	0.79	27.5
West: Union Rd (W)													
10	L2	208	1.4	208	1.4	0.152	7.3	LOS A	1.2	8.8	0.31	0.62	41.8
11	T1	293	2.4	293	2.4	0.354	12.1	LOS A	4.1	29.6	0.66	0.58	42.7
12	R2	24	4.2	24	4.2	0.354	16.7	LOS B	4.1	29.6	0.66	0.58	42.2
Approach		525	2.1	525	2.1	0.354	10.4	LOS A	4.1	29.6	0.52	0.60	42.5
All Vehicles		1130	1.7	1130	1.7	0.593	19.5	LOS B	4.1	29.6	0.71	0.69	36.2

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91

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 [UNI_WORP PM 2020]

 Network: N101 [Proposed Network PM 2020 (Sydney average rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	24	0.0	24	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	1.08	26.3
2	T1	20	5.0	20	5.0	0.605	62.3	LOS E	2.2	15.3	1.00	1.08	18.1
3	R2	15	0.0	15	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	1.08	26.2
Approach		59	1.7	59	1.7	0.605	65.3	LOS E	2.2	15.3	1.00	1.08	24.0
East: Union Rd (E)													
4	L2	26	0.0	26	0.0	0.092	14.3	LOS A	1.5	10.5	0.44	0.44	43.2
5	T1	82	0.0	82	0.0	0.092	9.8	LOS A	1.5	10.5	0.44	0.44	43.5
6	R2	417	0.0	417	0.0	0.699	22.7	LOS B	9.9	69.1	0.74	0.74	31.0
Approach		525	0.0	525	0.0	0.699	20.3	LOS B	9.9	69.1	0.68	0.68	34.3
North: Worth St (N)													
7	L2	237	0.4	237	0.4	0.701	53.4	LOS D	7.7	54.1	0.97	1.00	21.7
8	T1	17	5.9	17	5.9	0.669	48.0	LOS D	7.4	52.3	0.98	1.00	22.2
9	R2	210	0.0	210	0.0	0.669	52.3	LOS D	7.4	52.3	0.98	1.00	22.0
Approach		464	0.4	464	0.4	0.701	52.7	LOS D	7.7	54.1	0.98	1.00	21.9
West: Union Rd (W)													
10	L2	151	0.0	151	0.0	0.096	6.2	LOS A	0.9	6.0	0.18	0.18	42.9
11	T1	157	1.3	157	1.3	0.151	10.2	LOS A	2.5	17.4	0.46	0.46	43.7
12	R2	13	0.0	13	0.0	0.151	14.8	LOS B	2.5	17.4	0.46	0.46	43.2
Approach		321	0.6	321	0.6	0.151	8.5	LOS A	2.5	17.4	0.33	0.49	43.4
All Vehicles		1369	0.4	1369	0.4	0.701	30.4	LOS C	9.9	69.1	0.71	0.71	30.2

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

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

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

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

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

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

Movement Performance - Pedestrians							
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate
		ped/h	sec		Pedestrian ped	Distance m	
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95
All Pedestrians		53	51.7	LOS E			0.95

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

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

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

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP AM 2020]

 Network: N101 [Proposed
Network AM 2020 (Council RFB
rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	201	4.0	201	4.0	0.426	23.9	LOS B	4.8	34.7	0.87	0.78	0.87	21.6
2	T1	221	0.0	221	0.0	0.426	25.8	LOS B	4.8	34.7	0.95	0.81	0.95	13.7
3	R2	64	3.1	64	3.1	0.426	33.7	LOS C	4.3	30.1	1.00	0.83	1.00	15.6
Approach		486	2.1	486	2.1	0.426	26.0	LOS B	4.8	34.7	0.92	0.80	0.92	17.3
East: High St (E)														
4	L2	56	3.6	56	3.6	0.220	26.3	LOS B	1.8	13.2	0.81	0.70	0.81	13.9
5	T1	170	2.4	170	2.4	0.220	21.6	LOS B	1.9	13.5	0.81	0.66	0.81	24.3
6	R2	129	0.0	129	0.0	0.196	14.1	LOS A	1.4	9.6	0.67	0.70	0.67	23.1
Approach		355	1.7	355	1.7	0.220	19.6	LOS B	1.9	13.5	0.76	0.68	0.76	22.5
North: Westfields Access (N)														
7	L2	20	0.0	20	0.0	0.026	13.1	LOS A	0.2	1.4	0.58	0.62	0.58	25.9
8	T1	41	0.0	41	0.0	0.074	19.7	LOS B	0.6	4.4	0.76	0.57	0.76	11.6
9	R2	50	0.0	50	0.0	0.227	32.7	LOS C	1.0	6.7	0.90	0.74	0.90	17.6
Approach		111	0.0	111	0.0	0.227	24.4	LOS B	1.0	6.7	0.79	0.65	0.79	17.1
West: High St (W)														
10	L2	185	0.0	185	0.0	0.423	27.8	LOS B	3.3	23.0	0.87	0.78	0.87	19.0
11	T1	233	5.6	233	5.6	0.228	21.7	LOS B	1.9	14.1	0.82	0.65	0.82	24.7
12	R2	140	0.0	140	0.0	0.212	14.1	LOS A	1.5	10.5	0.67	0.71	0.67	23.9
Approach		558	2.3	558	2.3	0.423	21.8	LOS B	3.3	23.0	0.80	0.71	0.80	22.4
All Vehicles		1510	1.9	1510	1.9	0.426	22.9	LOS B	4.8	34.7	0.83	0.73	0.83	20.4

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

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

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

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

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate		
		ped/h	sec		Pedestrian ped	Distance m			
P1	South Full Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	
P2	East Full Crossing	61	29.3	LOS C	0.1	0.1	0.92	0.92	
P3	North Full Crossing	54	29.3	LOS C	0.1	0.1	0.92	0.92	
P3B	North Slip/Bypass Lane Crossing	56	29.3	LOS C	0.1	0.1	0.92	0.92	
P4	West Full Crossing	157	29.4	LOS C	0.3	0.3	0.92	0.92	
P4B	West Slip/Bypass Lane Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP PM 2020]

 Network: N101 [Proposed Network PM 2020 (Council RFB rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue	Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	354	0.0	354	0.0	0.356	19.1	LOS B	8.5	59.6	0.67	0.74	0.67	24.0
2	T1	268	0.0	268	0.0	0.356	21.3	LOS B	8.5	59.6	0.77	0.72	0.77	15.7
3	R2	69	0.0	69	0.0	0.356	27.3	LOS B	7.3	50.9	0.80	0.71	0.80	18.4
Approach		691	0.0	691	0.0	0.356	20.8	LOS B	8.5	59.6	0.72	0.73	0.72	20.4
East: High St (E)														
4	L2	60	0.0	60	0.0	0.481	48.1	LOS D	5.9	41.3	0.93	0.78	0.93	8.5
5	T1	327	0.6	327	0.6	0.481	43.6	LOS D	6.0	41.9	0.93	0.77	0.93	16.2
6	R2	168	0.0	168	0.0	0.391	33.0	LOS C	4.1	29.0	0.84	0.76	0.84	14.0
Approach		555	0.4	555	0.4	0.481	40.9	LOS C	6.0	41.9	0.90	0.77	0.90	14.9
North: Westfields Access (N)														
7	L2	155	0.0	155	0.0	0.251	12.2	LOS A	2.0	14.0	0.46	0.64	0.46	26.8
8	T1	268	0.0	268	0.0	0.402	16.1	LOS B	5.0	35.1	0.59	0.50	0.59	13.5
9	R2	253	0.0	253	0.0	0.779	44.9	LOS D	8.7	60.9	0.94	0.93	1.08	14.2
Approach		676	0.0	676	0.0	0.779	26.0	LOS B	8.7	60.9	0.69	0.69	0.74	16.0
West: High St (W)														
10	L2	251	0.0	251	0.0	0.786	56.5	LOS E	8.9	62.2	1.00	0.92	1.14	11.8
11	T1	223	0.9	223	0.9	0.276	41.4	LOS C	3.2	22.9	0.88	0.70	0.88	16.9
12	R2	94	1.1	94	1.1	0.257	32.4	LOS C	2.2	15.6	0.85	0.75	0.85	14.3
Approach		568	0.5	568	0.5	0.786	46.6	LOS D	8.9	62.2	0.93	0.81	0.99	14.0
All Vehicles		2490	0.2	2490	0.2	0.786	32.6	LOS C	8.9	62.2	0.80	0.75	0.83	16.0

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	96	51.9	LOS E	0.3	0.3	0.95	0.95
P2	East Full Crossing	73	51.8	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	58	51.8	LOS E	0.2	0.2	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	56	51.8	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	129	51.9	LOS E	0.4	0.4	0.95	0.95
P4B	West Slip/Bypass Lane Crossing	109	51.9	LOS E	0.3	0.3	0.95	0.95

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP AM 2020]

Network: N101 [Proposed
Network AM 2020 (Council RFB
rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	79	0.0	79	0.0	0.123	4.3	LOS A	0.0	0.0	0.00	0.18	0.00	44.6
2	T1	392	2.0	392	2.0	0.123	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	44.9
Approach		471	1.7	471	1.7	0.123	0.7	NA	0.0	0.0	0.00	0.09	0.00	44.8
East: Union Ln (E)														
4	L2	19	5.3	19	5.3	0.018	5.1	LOS A	0.0	0.2	0.22	0.50	0.22	43.6
5	T1	1	0.0	1	0.0	0.018	8.8	LOS A	0.0	0.2	0.22	0.50	0.22	45.0
6	R2	15	6.7	15	6.7	0.039	11.8	LOS A	0.1	0.4	0.60	0.76	0.60	37.9
Approach		35	5.7	35	5.7	0.039	8.1	LOS A	0.1	0.4	0.38	0.61	0.38	41.1
North: Worth St (N)														
8	T1	205	0.0	205	0.0	0.067	0.3	LOS A	0.1	0.7	0.08	0.06	0.08	42.9
9	R2	29	0.0	29	0.0	0.067	6.4	LOS A	0.1	0.7	0.22	0.17	0.22	41.9
Approach		234	0.0	234	0.0	0.067	1.1	NA	0.1	0.7	0.10	0.07	0.10	42.6
West: Union Ln (W)														
10	L2	81	1.2	81	1.2	0.146	5.2	LOS A	0.2	1.7	0.31	0.57	0.31	33.3
12	R2	33	0.0	33	0.0	0.146	11.5	LOS A	0.2	1.7	0.31	0.57	0.31	33.3
Approach		114	0.9	114	0.9	0.146	7.0	LOS A	0.2	1.7	0.31	0.57	0.31	33.3
All Vehicles		854	1.3	854	1.3	0.146	2.0	NA	0.2	1.7	0.08	0.17	0.08	40.9

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

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

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [WOR_UNIP PM 2020]

Network: N101 [Proposed
Network PM 2020 (Council RFB
rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	80	0.0	80	0.0	0.233	4.3	LOS A	0.0	0.0	0.00	0.15	0.00	45.3
2	T1	545	0.0	545	0.0	0.233	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	45.8
Approach		625	0.0	625	0.0	0.233	0.6	NA	0.0	0.0	0.00	0.07	0.00	45.6
East: Union Ln (E)														
4	L2	62	0.0	62	0.0	0.108	5.4	LOS A	0.1	0.7	0.30	0.54	0.30	43.3
5	T1	1	0.0	1	0.0	0.108	14.1	LOS A	0.1	0.7	0.30	0.54	0.30	44.7
6	R2	56	1.8	56	1.8	0.305	20.7	LOS B	0.4	2.5	0.78	0.95	0.91	32.0
Approach		119	0.8	119	0.8	0.305	12.7	LOS A	0.4	2.5	0.53	0.73	0.59	37.2
North: Worth St (N)														
8	T1	388	0.3	388	0.3	0.204	0.4	LOS A	0.2	1.1	0.09	0.04	0.09	42.9
9	R2	33	0.0	33	0.0	0.204	7.5	LOS A	0.2	1.1	0.20	0.10	0.20	43.0
Approach		421	0.2	421	0.2	0.204	1.0	NA	0.2	1.1	0.10	0.05	0.10	42.9
West: Union Ln (W)														
10	L2	81	0.0	81	0.0	0.354	6.6	LOS A	0.4	2.7	0.43	0.65	0.49	28.3
12	R2	34	0.0	34	0.0	0.354	20.6	LOS B	0.4	2.7	0.43	0.65	0.49	28.3
Approach		115	0.0	115	0.0	0.354	10.7	LOS A	0.4	2.7	0.43	0.65	0.49	28.3
All Vehicles		1280	0.2	1280	0.2	0.354	2.7	NA	0.4	2.7	0.12	0.18	0.13	39.1

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

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

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [UNI_WORP AM 2020]

 Network: N101 [Proposed Network AM 2020 (Council RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	8	0.0	8	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.7
2	T1	21	4.8	21	4.8	0.368	35.1	LOS C	1.3	8.9	0.98	0.74	24.7
3	R2	30	0.0	30	0.0	0.368	39.6	LOS C	1.3	8.9	0.98	0.74	32.6
Approach		59	1.7	59	1.7	0.368	38.0	LOS C	1.3	8.9	0.98	0.74	30.5
East: Union Rd (E)													
4	L2	35	0.0	35	0.0	0.076	14.8	LOS B	0.8	5.5	0.56	0.56	42.3
5	T1	35	2.9	35	2.9	0.076	10.2	LOS A	0.8	5.5	0.56	0.56	42.7
6	R2	238	2.1	238	2.1	0.605	23.4	LOS B	4.1	29.5	0.84	0.81	30.7
Approach		308	1.9	308	1.9	0.605	20.9	LOS B	4.1	29.5	0.78	0.75	34.2
North: Worth St (N)													
7	L2	190	0.5	190	0.5	0.599	34.6	LOS C	3.9	27.7	0.99	0.82	27.0
8	T1	24	0.0	24	0.0	0.188	27.6	LOS B	1.1	7.9	0.89	0.71	28.9
9	R2	37	0.0	37	0.0	0.188	31.9	LOS C	1.1	7.9	0.89	0.71	28.6
Approach		251	0.4	251	0.4	0.599	33.6	LOS C	3.9	27.7	0.97	0.79	27.4
West: Union Rd (W)													
10	L2	212	1.4	212	1.4	0.155	7.4	LOS A	1.3	9.0	0.31	0.63	41.7
11	T1	293	2.4	293	2.4	0.354	12.1	LOS A	4.1	29.6	0.66	0.58	42.7
12	R2	24	4.2	24	4.2	0.354	16.7	LOS B	4.1	29.6	0.66	0.58	42.2
Approach		529	2.1	529	2.1	0.354	10.4	LOS A	4.1	29.6	0.52	0.60	42.5
All Vehicles		1147	1.7	1147	1.7	0.605	19.7	LOS B	4.1	29.6	0.71	0.69	36.0

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91

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 [UNI_WORP PM 2020]

 Network: N101 [Proposed Network PM 2020 (Council RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	24	0.0	24	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	0.78	26.3
2	T1	20	5.0	20	5.0	0.605	62.3	LOS E	2.2	15.3	1.00	0.78	18.1
3	R2	15	0.0	15	0.0	0.605	66.9	LOS E	2.2	15.3	1.00	0.78	26.2
Approach		59	1.7	59	1.7	0.605	65.3	LOS E	2.2	15.3	1.00	0.78	24.0
East: Union Rd (E)													
4	L2	26	0.0	26	0.0	0.091	13.9	LOS A	1.5	10.3	0.43	0.42	43.4
5	T1	82	0.0	82	0.0	0.091	9.3	LOS A	1.5	10.3	0.43	0.42	43.8
6	R2	439	0.0	439	0.0	0.731	22.5	LOS B	10.6	73.9	0.74	0.81	31.1
Approach		547	0.0	547	0.0	0.731	20.1	LOS B	10.6	73.9	0.68	0.74	34.4
North: Worth St (N)													
7	L2	240	0.4	240	0.4	0.745	55.9	LOS D	8.2	57.8	1.00	0.87	21.1
8	T1	17	5.9	17	5.9	0.708	50.2	LOS D	7.7	54.2	1.00	0.86	21.7
9	R2	212	0.0	212	0.0	0.708	54.5	LOS D	7.7	54.2	1.00	0.86	21.5
Approach		469	0.4	469	0.4	0.745	55.1	LOS D	8.2	57.8	1.00	0.87	21.3
West: Union Rd (W)													
10	L2	159	0.0	159	0.0	0.102	6.2	LOS A	0.9	6.4	0.18	0.58	42.9
11	T1	157	1.3	157	1.3	0.149	9.8	LOS A	2.4	17.0	0.45	0.40	43.9
12	R2	13	0.0	13	0.0	0.149	14.3	LOS A	2.4	17.0	0.45	0.40	43.4
Approach		329	0.6	329	0.6	0.149	8.2	LOS A	2.4	17.0	0.32	0.49	43.6
All Vehicles		1404	0.4	1404	0.4	0.745	30.9	LOS C	10.6	73.9	0.72	0.74	30.0

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

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

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

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

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

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

Movement Performance - Pedestrians							
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95
All Pedestrians		53	51.7	LOS E			0.95

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

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

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

MOVEMENT SUMMARY

 Site: 101 [HIG_WORX AM 2030]

 Network: N101 [Existing Network AM 2030]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	179	4.5	179	4.5	0.491	26.1	LOS B	5.3	37.8	0.91	0.80	0.91	20.8
2	T1	269	0.0	269	0.0	0.491	26.8	LOS B	5.3	37.8	0.96	0.82	0.96	13.4
3	R2	67	3.0	67	3.0	0.491	34.8	LOS C	4.7	33.2	1.00	0.83	1.00	15.3
Approach		515	1.9	515	1.9	0.491	27.6	LOS B	5.3	37.8	0.95	0.81	0.95	16.3
East: High St (E)														
4	L2	63	3.2	63	3.2	0.237	24.8	LOS B	2.1	15.2	0.79	0.69	0.79	14.6
5	T1	207	1.9	207	1.9	0.237	20.2	LOS B	2.2	15.6	0.79	0.66	0.79	25.2
6	R2	157	0.0	157	0.0	0.245	13.7	LOS A	1.7	11.6	0.66	0.71	0.66	23.4
Approach		427	1.4	427	1.4	0.245	18.5	LOS B	2.2	15.6	0.75	0.68	0.75	23.3
North: Westfields Access (N)														
7	L2	24	0.0	24	0.0	0.033	14.2	LOS A	0.3	1.8	0.62	0.64	0.62	24.9
8	T1	50	0.0	50	0.0	0.094	20.7	LOS B	0.8	5.5	0.78	0.59	0.78	11.2
9	R2	61	0.0	61	0.0	0.318	35.3	LOS C	1.2	8.6	0.94	0.75	0.94	16.7
Approach		135	0.0	135	0.0	0.318	26.1	LOS B	1.2	8.6	0.82	0.67	0.82	16.4
West: High St (W)														
10	L2	225	0.0	225	0.0	0.486	27.5	LOS B	4.0	28.2	0.88	0.79	0.88	19.1
11	T1	284	4.6	284	4.6	0.250	20.3	LOS B	2.3	16.6	0.80	0.64	0.80	25.6
12	R2	157	0.0	157	0.0	0.242	13.7	LOS A	1.7	11.6	0.66	0.71	0.66	24.3
Approach		666	2.0	666	2.0	0.486	21.2	LOS B	4.0	28.2	0.79	0.71	0.79	22.8
All Vehicles		1743	1.7	1743	1.7	0.491	22.8	LOS B	5.3	37.8	0.83	0.73	0.83	20.4

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	59	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	11	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P3B	North Slip/Bypass Lane Crossing	6	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	107	29.4	LOS C	0.2	0.2	0.92	0.92
P4B	West Slip/Bypass Lane Crossing	59	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		246	29.3	LOS C			0.92	0.92

MOVEMENT SUMMARY

 Site: 101 [HIG_WORX PM 2030]

 Network: N101 [Existing Network PM 2030]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	395	0.0	395	0.0	0.415	18.8	LOS B	9.3	65.0	0.65	0.74	0.65	24.2
2	T1	327	0.0	327	0.0	0.415	18.9	LOS B	9.3	65.0	0.71	0.68	0.71	16.9
3	R2	77	0.0	77	0.0	0.415	24.6	LOS B	7.8	54.3	0.73	0.67	0.73	19.8
Approach		799	0.0	799	0.0	0.415	19.4	LOS B	9.3	65.0	0.69	0.71	0.69	21.1
East: High St (E)														
4	L2	60	0.0	60	0.0	0.471	44.1	LOS D	6.7	47.0	0.90	0.77	0.90	9.3
5	T1	399	0.5	399	0.5	0.471	39.5	LOS C	6.8	47.6	0.90	0.76	0.90	17.3
6	R2	205	0.0	205	0.0	0.591	40.8	LOS C	5.4	37.7	0.91	0.89	1.13	12.1
Approach		664	0.3	664	0.3	0.591	40.3	LOS C	6.8	47.6	0.90	0.80	0.97	15.2
North: Westfields Access (N)														
7	L2	189	0.0	189	0.0	0.382	14.7	LOS B	2.8	19.7	0.53	0.67	0.53	24.5
8	T1	327	0.0	327	0.0	0.487	15.5	LOS B	6.1	42.8	0.59	0.51	0.59	13.9
9	R2	308	0.0	308	0.0	1.049	141.6	LOS F	20.3	141.8	1.00	1.41	1.99	5.5
Approach		824	0.0	824	0.0	1.049	62.5	LOS E	20.3	141.8	0.73	0.88	1.10	8.1
West: High St (W)														
10	L2	306	0.0	306	0.0	1.039	126.0	LOS F	17.4	122.1	1.00	1.33	1.89	6.1
11	T1	272	0.7	272	0.7	0.278	37.3	LOS C	3.8	26.5	0.85	0.69	0.85	18.1
12	R2	95	1.1	95	1.1	0.348	35.5	LOS C	2.4	17.0	0.88	0.75	0.88	13.4
Approach		673	0.4	673	0.4	1.039	77.3	LOS F	17.4	122.1	0.92	0.99	1.33	9.5
All Vehicles		2960	0.2	2960	0.2	1.049	49.3	LOS D	20.3	141.8	0.80	0.84	1.01	11.8

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

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

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

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

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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	46	51.8	LOS E	0.1	0.1	0.95	0.95	
P2	East Full Crossing	23	51.7	LOS E	0.1	0.1	0.95	0.95	
P3	North Full Crossing	8	51.7	LOS E	0.0	0.0	0.95	0.95	
P3B	North Slip/Bypass Lane Crossing	6	51.7	LOS E	0.0	0.0	0.95	0.95	
P4	West Full Crossing	79	51.8	LOS E	0.2	0.2	0.95	0.95	
P4B	West Slip/Bypass Lane Crossing	59	51.8	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		221	51.8	LOS E			0.95	0.95	

MOVEMENT SUMMARY

Site: 101 [WOR_UNIX AM 2030]

Network: N101 [Existing Network AM 2030]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	52	0.0	52	0.0	0.138	4.3	LOS A	0.0	0.0	0.00	0.11	0.00	46.0
2	T1	478	1.7	478	1.7	0.138	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	46.5
Approach		530	1.5	530	1.5	0.138	0.4	NA	0.0	0.0	0.00	0.05	0.00	46.4
East: Union Ln (E)														
4	L2	23	4.3	23	4.3	0.022	5.1	LOS A	0.0	0.3	0.23	0.50	0.23	43.6
5	T1	1	0.0	1	0.0	0.022	9.9	LOS A	0.0	0.3	0.23	0.50	0.23	44.9
6	R2	18	5.6	18	5.6	0.049	12.4	LOS A	0.1	0.5	0.62	0.79	0.62	37.4
Approach		42	4.8	42	4.8	0.049	8.4	LOS A	0.1	0.5	0.40	0.62	0.40	40.8
North: Worth St (N)														
8	T1	250	0.0	250	0.0	0.073	0.2	LOS A	0.1	0.5	0.06	0.03	0.06	44.9
9	R2	17	0.0	17	0.0	0.073	6.7	LOS A	0.1	0.5	0.14	0.08	0.14	44.1
Approach		267	0.0	267	0.0	0.073	0.7	NA	0.1	0.5	0.07	0.04	0.07	44.8
West: Union Ln (W)														
10	L2	22	4.5	22	4.5	0.039	5.5	LOS A	0.1	0.4	0.35	0.56	0.35	33.2
12	R2	7	0.0	7	0.0	0.039	12.4	LOS A	0.1	0.4	0.35	0.56	0.35	33.2
Approach		29	3.4	29	3.4	0.039	7.1	LOS A	0.1	0.4	0.35	0.56	0.35	33.2
All Vehicles		868	1.3	868	1.3	0.138	1.1	NA	0.1	0.5	0.05	0.09	0.05	43.6

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

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

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

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

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

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

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

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Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, 1 April 2020 7:33:40 AM

Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Existing Network 2030.sip8

MOVEMENT SUMMARY

Site: 101 [WOR_UNIX PM 2030]

Network: N101 [Existing Network PM 2030]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Worth St (S)														
1	L2	21	0.0	21	0.0	0.211	4.3	LOS A	0.2	1.6	0.00	0.03	0.00	47.5
2	T1	664	0.0	664	0.0	0.211	0.0	LOS A	0.2	1.6	0.00	0.02	0.00	48.7
Approach		685	0.0	685	0.0	0.211	0.1	NA	0.2	1.6	0.00	0.02	0.00	48.6
East: Union Ln (E)														
4	L2	75	0.0	75	0.0	0.145	5.6	LOS A	0.1	0.9	0.33	0.56	0.33	43.1
5	T1	1	0.0	1	0.0	0.145	17.0	LOS B	0.1	0.9	0.33	0.56	0.33	44.6
6	R2	68	1.5	68	1.5	0.501	30.9	LOS C	0.6	4.1	0.85	1.03	1.18	27.2
Approach		144	0.7	144	0.7	0.501	17.6	LOS B	0.6	4.1	0.58	0.78	0.73	33.8
North: Worth St (N)														
8	T1	473	0.2	473	0.2	0.126	0.1	LOS A	1.5	10.4	0.02	0.01	0.02	48.0
9	R2	7	0.0	7	0.0	0.126	8.0	LOS A	1.3	9.2	0.05	0.02	0.05	46.2
Approach		480	0.2	480	0.2	0.126	0.2	NA	1.5	10.4	0.02	0.01	0.02	48.0
West: Union Ln (W)														
10	L2	55	0.0	55	0.0	0.353	8.3	LOS A	0.3	2.2	0.58	0.77	0.69	25.4
12	R2	23	0.0	23	0.0	0.353	26.0	LOS B	0.3	2.2	0.58	0.77	0.69	25.4
Approach		78	0.0	78	0.0	0.353	13.5	LOS A	0.3	2.2	0.58	0.77	0.69	25.4
All Vehicles		1387	0.1	1387	0.1	0.501	2.7	NA	1.5	10.4	0.10	0.14	0.12	38.5

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

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

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

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

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

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

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

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Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Existing Network 2030.sip8

MOVEMENT SUMMARY

 Site: 101 [UNI_WORX AM 2030]

 Network: N101 [Existing Network AM 2030]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Queue	Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	10	0.0	10	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.6
2	T1	25	4.0	25	4.0	0.442	35.4	LOS C	1.5	10.8	0.99	0.75	0.99	24.6
3	R2	36	0.0	36	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.5
Approach		71	1.4	71	1.4	0.442	38.3	LOS C	1.5	10.8	0.99	0.75	0.99	30.4
East: Union Rd (E)														
4	L2	43	0.0	43	0.0	0.091	14.3	LOS A	0.9	6.6	0.55	0.56	0.55	42.6
5	T1	43	2.3	43	2.3	0.091	9.8	LOS A	0.9	6.6	0.55	0.56	0.55	42.9
6	R2	267	1.9	267	1.9	0.746	29.7	LOS C	5.6	40.0	0.92	0.92	1.09	27.8
Approach		353	1.7	353	1.7	0.746	25.4	LOS B	5.6	40.0	0.83	0.83	0.96	32.1
North: Worth St (N)														
7	L2	205	0.5	205	0.5	0.705	37.0	LOS C	4.5	31.3	1.00	0.86	1.10	26.2
8	T1	29	0.0	29	0.0	0.228	28.9	LOS C	1.3	9.1	0.91	0.72	0.91	28.5
9	R2	39	0.0	39	0.0	0.228	33.2	LOS C	1.3	9.1	0.91	0.72	0.91	28.2
Approach		273	0.4	273	0.4	0.705	35.6	LOS C	4.5	31.3	0.98	0.83	1.05	26.7
West: Union Rd (W)														
10	L2	238	1.3	238	1.3	0.174	7.4	LOS A	1.5	10.3	0.31	0.63	0.31	41.7
11	T1	357	2.0	357	2.0	0.418	12.0	LOS A	5.1	36.5	0.68	0.60	0.68	42.8
12	R2	29	3.4	29	3.4	0.418	16.6	LOS B	5.1	36.5	0.68	0.60	0.68	42.2
Approach		624	1.8	624	1.8	0.418	10.4	LOS A	5.1	36.5	0.54	0.61	0.54	42.5
All Vehicles		1321	1.4	1321	1.4	0.746	21.1	LOS B	5.6	40.0	0.73	0.72	0.78	35.5

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91

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 [UNI_WORX PM 2030]

 Network: N101 [Existing Network PM 2030]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	29	0.0	29	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	1.21	26.0
2	T1	24	4.2	24	4.2	0.727	63.9	LOS E	2.6	18.8	1.00	0.85	1.21	17.8
3	R2	18	0.0	18	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	1.21	25.9
Approach		71	1.4	71	1.4	0.727	67.0	LOS E	2.6	18.8	1.00	0.85	1.21	23.7
East: Union Rd (E)														
4	L2	32	0.0	32	0.0	0.111	14.0	LOS A	1.8	12.7	0.43	0.43	0.43	43.3
5	T1	100	0.0	100	0.0	0.111	9.5	LOS A	1.8	12.7	0.43	0.43	0.43	43.7
6	R2	479	0.0	479	0.0	0.864	40.4	LOS C	16.4	115.1	0.84	0.94	1.03	24.0
Approach		611	0.0	611	0.0	0.864	33.9	LOS C	16.4	115.1	0.75	0.83	0.90	28.5
North: Worth St (N)														
7	L2	282	0.4	282	0.4	0.875	62.6	LOS E	8.5	60.0	1.00	0.95	1.22	19.8
8	T1	21	4.8	21	4.8	0.838	56.4	LOS D	8.5	60.0	1.00	0.94	1.21	20.4
9	R2	250	0.0	250	0.0	0.838	60.7	LOS E	8.5	60.0	1.00	0.94	1.21	20.2
Approach		553	0.4	553	0.4	0.875	61.5	LOS E	8.5	60.0	1.00	0.94	1.21	20.0
West: Union Rd (W)														
10	L2	173	0.0	173	0.0	0.110	6.2	LOS A	1.0	7.0	0.18	0.59	0.18	42.9
11	T1	191	1.0	191	1.0	0.181	10.0	LOS A	3.0	21.2	0.46	0.41	0.46	43.8
12	R2	16	0.0	16	0.0	0.181	14.6	LOS B	3.0	21.2	0.46	0.41	0.46	43.3
Approach		380	0.5	380	0.5	0.181	8.4	LOS A	3.0	21.2	0.33	0.49	0.33	43.5
All Vehicles		1615	0.3	1615	0.3	0.875	38.8	LOS C	16.4	115.1	0.75	0.79	0.89	27.3

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		53	51.7	LOS E			0.95	0.95

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

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

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

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP AM 2030]

 Network: N101 [Existing
Network AM 2030 (Sydney
average RFB rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	215	3.7	215	3.7	0.497	24.8	LOS B	5.7	40.5	0.89	0.80	0.89	21.3
2	T1	269	0.0	269	0.0	0.497	26.1	LOS B	5.7	40.5	0.96	0.82	0.96	13.6
3	R2	73	2.7	73	2.7	0.497	34.0	LOS C	5.0	35.0	1.00	0.84	1.00	15.5
Approach		557	1.8	557	1.8	0.497	26.6	LOS B	5.7	40.5	0.94	0.82	0.94	16.9
East: High St (E)														
4	L2	68	2.9	68	2.9	0.254	25.7	LOS B	2.2	15.9	0.81	0.70	0.81	14.1
5	T1	207	1.9	207	1.9	0.254	21.1	LOS B	2.3	16.3	0.81	0.67	0.81	24.6
6	R2	157	0.0	157	0.0	0.251	14.5	LOS A	1.7	12.0	0.70	0.72	0.70	22.8
Approach		432	1.4	432	1.4	0.254	19.4	LOS B	2.3	16.3	0.77	0.69	0.77	22.6
North: Westfields Access (N)														
7	L2	24	0.0	24	0.0	0.033	13.7	LOS A	0.3	1.8	0.60	0.63	0.60	25.4
8	T1	50	0.0	50	0.0	0.090	19.9	LOS B	0.8	5.4	0.76	0.58	0.76	11.6
9	R2	61	0.0	61	0.0	0.319	35.3	LOS C	1.2	8.6	0.94	0.75	0.94	16.7
Approach		135	0.0	135	0.0	0.319	25.7	LOS B	1.2	8.6	0.81	0.67	0.81	16.5
West: High St (W)														
10	L2	225	0.0	225	0.0	0.501	28.4	LOS B	4.1	28.7	0.89	0.80	0.89	18.7
11	T1	284	4.6	284	4.6	0.262	21.1	LOS B	2.3	17.0	0.81	0.66	0.81	25.0
12	R2	165	0.0	165	0.0	0.262	14.4	LOS A	1.8	12.7	0.68	0.72	0.68	23.8
Approach		674	1.9	674	1.9	0.501	21.9	LOS B	4.1	28.7	0.81	0.72	0.81	22.3
All Vehicles		1798	1.6	1798	1.6	0.501	23.0	LOS B	5.7	40.5	0.84	0.74	0.84	20.3

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

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

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

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


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

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

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	
P2	East Full Crossing	61	29.3	LOS C	0.1	0.1	0.92	0.92	
P3	North Full Crossing	54	29.3	LOS C	0.1	0.1	0.92	0.92	
P3B	North Slip/Bypass Lane Crossing	56	29.3	LOS C	0.1	0.1	0.92	0.92	
P4	West Full Crossing	157	29.4	LOS C	0.3	0.3	0.92	0.92	
P4B	West Slip/Bypass Lane Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92	

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP PM 2030]

 Network: N101 [Existing
Network PM 2030 (Sydney
average RFB rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
South: Worth St (S)														
1	L2	412	0.0	412	0.0	0.419	17.5	LOS B	9.3	65.0	0.63	0.73	0.63	25.1
2	T1	327	0.0	327	0.0	0.419	17.9	LOS B	9.3	65.0	0.66	0.65	0.66	17.5
3	R2	81	0.0	81	0.0	0.419	23.6	LOS B	7.3	51.2	0.67	0.63	0.67	20.4
Approach		820	0.0	820	0.0	0.419	18.3	LOS B	9.3	65.0	0.65	0.69	0.65	21.9
East: High St (E)														
4	L2	66	0.0	66	0.0	0.495	45.1	LOS D	6.9	48.3	0.91	0.78	0.91	9.1
5	T1	399	0.5	399	0.5	0.495	40.5	LOS C	7.0	49.0	0.91	0.77	0.91	17.0
6	R2	205	0.0	205	0.0	0.608	41.8	LOS C	5.5	38.2	0.92	0.90	1.15	11.9
Approach		670	0.3	670	0.3	0.608	41.4	LOS C	7.0	49.0	0.91	0.81	0.99	14.8
North: Westfields Access (N)														
7	L2	189	0.0	189	0.0	0.377	14.2	LOS A	2.7	19.2	0.52	0.67	0.52	24.9
8	T1	327	0.0	327	0.0	0.480	14.9	LOS B	6.0	42.0	0.58	0.50	0.58	14.3
9	R2	308	0.0	308	0.0	1.047	140.8	LOS F	20.3	141.8	1.00	1.40	1.98	5.5
Approach		824	0.0	824	0.0	1.047	61.8	LOS E	20.3	141.8	0.72	0.88	1.09	8.2
West: High St (W)														
10	L2	306	0.0	306	0.0	1.073	149.3	LOS F	19.1	133.9	1.00	1.42	2.06	5.2
11	T1	272	0.7	272	0.7	0.288	38.2	LOS C	3.8	26.9	0.86	0.69	0.86	17.9
12	R2	103	1.0	103	1.0	0.392	36.5	LOS C	2.7	18.8	0.89	0.75	0.89	13.1
Approach		681	0.4	681	0.4	1.073	87.8	LOS F	19.1	133.9	0.93	1.03	1.40	8.5
All Vehicles		2995	0.2	2995	0.2	1.073	51.2	LOS D	20.3	141.8	0.79	0.84	1.02	11.4

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	96	51.9	LOS E	0.3	0.3	0.95	0.95
P2	East Full Crossing	73	51.8	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	58	51.8	LOS E	0.2	0.2	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	56	51.8	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	129	51.9	LOS E	0.4	0.4	0.95	0.95
P4B	West Slip/Bypass Lane Crossing	109	51.9	LOS E	0.3	0.3	0.95	0.95

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP AM 2030]

Network: N101 [Existing
Network AM 2030 (Sydney
average RFB rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Worth St (S)														
1	L2	80	0.0	80	0.0	0.149	4.3	LOS A	0.0	0.0	0.00	0.16	0.00	45.0
2	T1	478	1.7	478	1.7	0.149	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	45.4
Approach		558	1.4	558	1.4	0.149	0.6	NA	0.0	0.0	0.00	0.08	0.00	45.3
East: Union Ln (E)														
4	L2	23	4.3	23	4.3	0.022	5.2	LOS A	0.0	0.3	0.25	0.51	0.25	43.5
5	T1	1	0.0	1	0.0	0.022	10.5	LOS A	0.0	0.3	0.25	0.51	0.25	44.9
6	R2	18	5.6	18	5.6	0.054	13.6	LOS A	0.1	0.6	0.66	0.83	0.66	36.5
Approach		42	4.8	42	4.8	0.054	8.9	LOS A	0.1	0.6	0.42	0.64	0.42	40.3
North: Worth St (N)														
8	T1	250	0.0	250	0.0	0.081	0.4	LOS A	0.1	0.8	0.09	0.06	0.09	42.6
9	R2	30	0.0	30	0.0	0.081	6.9	LOS A	0.1	0.8	0.24	0.15	0.24	41.9
Approach		280	0.0	280	0.0	0.081	1.1	NA	0.1	0.8	0.11	0.07	0.11	42.4
West: Union Ln (W)														
10	L2	64	1.6	64	1.6	0.133	5.4	LOS A	0.2	1.5	0.36	0.59	0.36	32.3
12	R2	25	0.0	25	0.0	0.133	13.6	LOS A	0.2	1.5	0.36	0.59	0.36	32.3
Approach		89	1.1	89	1.1	0.133	7.7	LOS A	0.2	1.5	0.36	0.59	0.36	32.3
All Vehicles		969	1.1	969	1.1	0.149	1.8	NA	0.2	1.5	0.08	0.15	0.08	41.3

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

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

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

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

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

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

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

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Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, 1 April 2020 7:18:39 AM

Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Proposed Network 2030 (Sydney average rates).sip8

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP PM 2030]

Network: N101 [Existing
Network PM 2030 (Sydney
average RFB rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	54	0.0	54	0.0	0.215	4.3	LOS A	0.1	0.6	0.00	0.07	0.00	46.7
2	T1	664	0.0	664	0.0	0.215	0.0	LOS A	0.1	0.6	0.00	0.04	0.00	47.1
Approach		718	0.0	718	0.0	0.215	0.3	NA	0.1	0.6	0.00	0.04	0.00	47.0
East: Union Ln (E)														
4	L2	75	0.0	75	0.0	0.147	5.7	LOS A	0.1	0.9	0.35	0.57	0.35	43.1
5	T1	1	0.0	1	0.0	0.147	18.0	LOS B	0.1	0.9	0.35	0.57	0.35	44.6
6	R2	68	1.5	68	1.5	0.486	31.5	LOS C	0.6	4.2	0.86	1.03	1.18	26.9
Approach		144	0.7	144	0.7	0.486	18.0	LOS B	0.6	4.2	0.59	0.79	0.74	33.6
North: Worth St (N)														
8	T1	473	0.2	473	0.2	0.135	0.3	LOS A	1.8	12.9	0.06	0.02	0.06	44.8
9	R2	21	0.0	21	0.0	0.135	8.3	LOS A	1.5	10.8	0.15	0.06	0.15	44.1
Approach		494	0.2	494	0.2	0.135	0.7	NA	1.8	12.9	0.07	0.03	0.07	44.7
West: Union Ln (W)														
10	L2	76	0.0	76	0.0	0.508	11.8	LOS A	0.6	3.9	0.58	0.85	0.88	22.1
12	R2	33	0.0	33	0.0	0.508	31.2	LOS C	0.6	3.9	0.58	0.85	0.88	22.1
Approach		109	0.0	109	0.0	0.508	17.7	LOS B	0.6	3.9	0.58	0.85	0.88	22.1
All Vehicles		1465	0.1	1465	0.1	0.508	3.5	NA	1.8	12.9	0.12	0.17	0.16	36.7

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

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

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

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

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

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

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

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Organisation: VARGA TRAFFIC PLANNING | Processed: Wednesday, 1 April 2020 7:18:42 AM

Project: Z:\DATA\Data\Jobs01\Jobs\19work\19363C_614-632HighStPenrith\SIDRA\200305\Proposed Network 2030 (Sydney average rates).sip8

MOVEMENT SUMMARY

 Site: 101 [UNI_WORP AM 2030]

 Network: N101 [Existing
Network AM 2030 (Sydney
average RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	10	0.0	10	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.6
2	T1	25	4.0	25	4.0	0.442	35.4	LOS C	1.5	10.8	0.99	0.75	0.99	24.6
3	R2	36	0.0	36	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.5
Approach		71	1.4	71	1.4	0.442	38.3	LOS C	1.5	10.8	0.99	0.75	0.99	30.4
East: Union Rd (E)														
4	L2	43	0.0	43	0.0	0.091	14.3	LOS A	0.9	6.6	0.55	0.56	0.55	42.6
5	T1	43	2.3	43	2.3	0.091	9.8	LOS A	0.9	6.6	0.55	0.56	0.55	42.9
6	R2	282	1.8	282	1.8	0.795	33.3	LOS C	6.4	45.8	0.95	0.97	1.20	26.4
Approach		368	1.6	368	1.6	0.795	28.3	LOS B	6.4	45.8	0.85	0.88	1.05	30.8
North: Worth St (N)														
7	L2	220	0.5	220	0.5	0.756	38.1	LOS C	4.9	34.3	1.00	0.89	1.15	25.8
8	T1	29	0.0	29	0.0	0.239	28.9	LOS C	1.4	9.5	0.91	0.73	0.91	28.4
9	R2	42	0.0	42	0.0	0.239	33.2	LOS C	1.4	9.5	0.91	0.73	0.91	28.1
Approach		291	0.3	291	0.3	0.756	36.5	LOS C	4.9	34.3	0.98	0.85	1.09	26.4
West: Union Rd (W)														
10	L2	251	1.2	251	1.2	0.183	7.4	LOS A	1.5	10.9	0.32	0.63	0.32	41.7
11	T1	357	2.0	357	2.0	0.418	12.0	LOS A	5.1	36.5	0.68	0.60	0.68	42.8
12	R2	29	3.4	29	3.4	0.418	16.6	LOS B	5.1	36.5	0.68	0.60	0.68	42.2
Approach		637	1.7	637	1.7	0.418	10.4	LOS A	5.1	36.5	0.53	0.61	0.53	42.5
All Vehicles		1367	1.4	1367	1.4	0.795	22.2	LOS B	6.4	45.8	0.74	0.74	0.82	34.9

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91


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 [UNI_WORP PM 2030]

 Network: N101 [Existing
Network PM 2030 (Sydney
average RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Queue	Back of	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	29	0.0	29	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	1.21	26.0
2	T1	24	4.2	24	4.2	0.727	63.9	LOS E	2.6	18.8	1.00	0.85	1.21	17.8
3	R2	18	0.0	18	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	1.21	25.9
Approach		71	1.4	71	1.4	0.727	67.0	LOS E	2.6	18.8	1.00	0.85	1.21	23.7
East: Union Rd (E)														
4	L2	32	0.0	32	0.0	0.111	14.0	LOS A	1.8	12.7	0.43	0.43	0.43	43.3
5	T1	100	0.0	100	0.0	0.111	9.5	LOS A	1.8	12.7	0.43	0.43	0.43	43.7
6	R2	503	0.0	503	0.0	0.916	55.3	LOS D	20.5	143.8	0.89	1.02	1.20	20.1
Approach		635	0.0	635	0.0	0.916	46.0	LOS D	20.5	143.8	0.79	0.90	1.04	24.6
North: Worth St (N)														
7	L2	287	0.3	287	0.3	0.891	64.3	LOS E	8.5	60.0	1.00	0.96	1.25	19.5
8	T1	21	4.8	21	4.8	0.853	57.8	LOS E	8.5	60.0	1.00	0.96	1.24	20.1
9	R2	255	0.0	255	0.0	0.853	62.1	LOS E	8.5	60.0	1.00	0.96	1.24	19.9
Approach		563	0.4	563	0.4	0.891	63.0	LOS E	8.5	60.0	1.00	0.96	1.24	19.7
West: Union Rd (W)														
10	L2	182	0.0	182	0.0	0.116	6.2	LOS A	1.1	7.4	0.18	0.59	0.18	42.9
11	T1	191	1.0	191	1.0	0.181	10.0	LOS A	3.0	21.2	0.46	0.41	0.46	43.8
12	R2	16	0.0	16	0.0	0.181	14.6	LOS B	3.0	21.2	0.46	0.41	0.46	43.3
Approach		389	0.5	389	0.5	0.181	8.4	LOS A	3.0	21.2	0.33	0.49	0.33	43.5
All Vehicles		1658	0.3	1658	0.3	0.916	43.9	LOS D	20.5	143.8	0.76	0.82	0.95	25.8

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		53	51.7	LOS E			0.95	0.95

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

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

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

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP AM 2030]

 Network: N101 [Proposed
Network AM 2030 (Council RFB
rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	233	3.4	233	3.4	0.511	24.8	LOS B	5.9	42.3	0.90	0.80	0.90	21.2
2	T1	269	0.0	269	0.0	0.511	26.2	LOS B	5.9	42.3	0.96	0.83	0.96	13.5
3	R2	76	2.6	76	2.6	0.511	34.1	LOS C	5.1	35.9	1.00	0.84	1.00	15.5
Approach		578	1.7	578	1.7	0.511	26.7	LOS B	5.9	42.3	0.94	0.82	0.94	17.0
East: High St (E)														
4	L2	67	3.0	67	3.0	0.266	26.6	LOS B	2.3	16.2	0.83	0.71	0.83	13.8
5	T1	207	1.9	207	1.9	0.266	22.0	LOS B	2.3	16.6	0.83	0.68	0.83	24.1
6	R2	157	0.0	157	0.0	0.247	14.4	LOS A	1.7	12.0	0.70	0.72	0.70	22.8
Approach		431	1.4	431	1.4	0.266	19.9	LOS B	2.3	16.6	0.78	0.70	0.78	22.3
North: Westfields Access (N)														
7	L2	24	0.0	24	0.0	0.032	13.1	LOS A	0.2	1.7	0.59	0.63	0.59	25.8
8	T1	50	0.0	50	0.0	0.090	19.9	LOS B	0.8	5.4	0.76	0.58	0.76	11.6
9	R2	61	0.0	61	0.0	0.327	35.4	LOS C	1.2	8.6	0.94	0.75	0.94	16.7
Approach		135	0.0	135	0.0	0.327	25.7	LOS B	1.2	8.6	0.81	0.67	0.81	16.6
West: High St (W)														
10	L2	225	0.0	225	0.0	0.522	29.3	LOS C	4.2	29.3	0.91	0.80	0.91	18.4
11	T1	284	4.6	284	4.6	0.276	22.0	LOS B	2.4	17.4	0.83	0.67	0.83	24.5
12	R2	168	0.0	168	0.0	0.262	14.3	LOS A	1.8	12.9	0.68	0.72	0.68	23.8
Approach		677	1.9	677	1.9	0.522	22.6	LOS B	4.2	29.3	0.82	0.73	0.82	22.0
All Vehicles		1821	1.6	1821	1.6	0.522	23.5	LOS B	5.9	42.3	0.85	0.75	0.85	20.0

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92
P2	East Full Crossing	61	29.3	LOS C	0.1	0.1	0.92	0.92
P3	North Full Crossing	54	29.3	LOS C	0.1	0.1	0.92	0.92
P3B	North Slip/Bypass Lane Crossing	56	29.3	LOS C	0.1	0.1	0.92	0.92
P4	West Full Crossing	157	29.4	LOS C	0.3	0.3	0.92	0.92
P4B	West Slip/Bypass Lane Crossing	109	29.4	LOS C	0.2	0.2	0.92	0.92

MOVEMENT SUMMARY

 Site: 101 [HIG_WORP PM 2030]

 Network: N101 [Proposed Network PM 2030 (Council RFB rates)]

High St & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue		Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m				km/h
South: Worth St (S)														
1	L2	425	0.0	425	0.0	0.426	17.2	LOS B	9.3	65.0	0.61	0.73	0.61	25.3
2	T1	327	0.0	327	0.0	0.426	17.9	LOS B	9.3	65.0	0.66	0.65	0.66	17.5
3	R2	83	0.0	83	0.0	0.426	23.6	LOS B	7.4	52.1	0.67	0.63	0.67	20.4
Approach		835	0.0	835	0.0	0.426	18.1	LOS B	9.3	65.0	0.64	0.69	0.64	22.0
East: High St (E)														
4	L2	71	0.0	71	0.0	0.500	45.2	LOS D	7.0	48.9	0.91	0.78	0.91	9.0
5	T1	399	0.5	399	0.5	0.500	40.6	LOS C	7.1	49.6	0.91	0.77	0.91	17.0
6	R2	205	0.0	205	0.0	0.608	41.8	LOS C	5.5	38.2	0.92	0.90	1.15	11.9
Approach		675	0.3	675	0.3	0.608	41.5	LOS C	7.1	49.6	0.92	0.81	0.99	14.8
North: Westfields Access (N)														
7	L2	189	0.0	189	0.0	0.377	14.2	LOS A	2.8	19.3	0.52	0.67	0.52	24.9
8	T1	327	0.0	327	0.0	0.480	14.9	LOS B	6.0	42.0	0.58	0.50	0.58	14.3
9	R2	308	0.0	308	0.0	1.062	150.9	LOS F	21.0	146.9	1.00	1.44	2.05	5.2
Approach		824	0.0	824	0.0	1.062	65.6	LOS E	21.0	146.9	0.72	0.89	1.12	7.8
West: High St (W)														
10	L2	306	0.0	306	0.0	1.073	149.3	LOS F	19.1	133.9	1.00	1.42	2.06	5.2
11	T1	272	0.7	272	0.7	0.288	38.2	LOS C	3.8	26.9	0.86	0.69	0.86	17.9
12	R2	111	0.9	111	0.9	0.425	36.8	LOS C	2.9	20.3	0.91	0.76	0.91	13.0
Approach		689	0.4	689	0.4	1.073	87.3	LOS F	19.1	133.9	0.93	1.03	1.40	8.5
All Vehicles		3023	0.2	3023	0.2	1.073	52.0	LOS D	21.0	146.9	0.79	0.85	1.02	11.3

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	96	51.9	LOS E	0.3	0.3	0.95	0.95
P2	East Full Crossing	73	51.8	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	58	51.8	LOS E	0.2	0.2	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	56	51.8	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	129	51.9	LOS E	0.4	0.4	0.95	0.95
P4B	West Slip/Bypass Lane Crossing	109	51.9	LOS E	0.3	0.3	0.95	0.95

MOVEMENT SUMMARY

Site: 101 [WOR_UNIP AM 2030]

Network: N101 [Proposed Network AM 2030 (Council RFB rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	88	0.0	88	0.0	0.153	4.3	LOS A	0.0	0.0	0.00	0.18	0.00	44.7
2	T1	478	1.7	478	1.7	0.153	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	45.2
Approach		566	1.4	566	1.4	0.153	0.7	NA	0.0	0.0	0.00	0.08	0.00	45.0
East: Union Ln (E)														
4	L2	23	4.3	23	4.3	0.023	5.2	LOS A	0.0	0.3	0.25	0.51	0.25	43.5
5	T1	1	0.0	1	0.0	0.023	10.6	LOS A	0.0	0.3	0.25	0.51	0.25	44.9
6	R2	18	5.6	18	5.6	0.056	14.2	LOS A	0.1	0.6	0.67	0.84	0.67	36.1
Approach		42	4.8	42	4.8	0.056	9.2	LOS A	0.1	0.6	0.43	0.65	0.43	40.1
North: Worth St (N)														
8	T1	250	0.0	250	0.0	0.083	0.4	LOS A	0.1	0.9	0.09	0.06	0.09	42.3
9	R2	32	0.0	32	0.0	0.083	7.0	LOS A	0.1	0.9	0.26	0.16	0.26	41.6
Approach		282	0.0	282	0.0	0.083	1.2	NA	0.1	0.9	0.11	0.07	0.11	42.1
West: Union Ln (W)														
10	L2	85	1.2	85	1.2	0.184	5.4	LOS A	0.3	2.0	0.36	0.59	0.36	32.1
12	R2	34	0.0	34	0.0	0.184	14.1	LOS A	0.3	2.0	0.36	0.59	0.36	32.1
Approach		119	0.8	119	0.8	0.184	7.8	LOS A	0.3	2.0	0.36	0.59	0.36	32.1
All Vehicles		1009	1.1	1009	1.1	0.184	2.0	NA	0.3	2.0	0.09	0.16	0.09	40.6

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

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

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [WOR_UNIP PM 2030]

Network: N101 [Proposed Network PM 2030 (Council RFB rates)]

Worth Street & Union Lane, Penrith
Site Category: (None)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec							
South: Worth St (S)														
1	L2	84	0.0	84	0.0	0.226	4.3	LOS A	0.1	0.7	0.00	0.10	0.00	46.0
2	T1	664	0.0	664	0.0	0.226	0.0	LOS A	0.1	0.7	0.00	0.06	0.00	46.0
Approach		748	0.0	748	0.0	0.226	0.5	NA	0.1	0.7	0.00	0.06	0.00	46.0
East: Union Ln (E)														
4	L2	75	0.0	75	0.0	0.150	5.8	LOS A	0.1	0.9	0.36	0.58	0.36	43.0
5	T1	1	0.0	1	0.0	0.150	19.1	LOS B	0.1	0.9	0.36	0.58	0.36	44.5
6	R2	68	1.5	68	1.5	0.515	33.7	LOS C	0.6	4.4	0.87	1.05	1.22	26.1
Approach		144	0.7	144	0.7	0.515	19.1	LOS B	0.6	4.4	0.60	0.80	0.76	33.0
North: Worth St (N)														
8	T1	473	0.2	473	0.2	0.144	0.5	LOS A	3.2	22.6	0.10	0.04	0.10	42.4
9	R2	34	0.0	34	0.0	0.144	8.5	LOS A	2.2	15.3	0.24	0.10	0.24	42.1
Approach		507	0.2	507	0.2	0.144	1.1	NA	3.2	22.6	0.11	0.04	0.11	42.4
West: Union Ln (W)														
10	L2	91	0.0	91	0.0	0.606	15.2	LOS B	0.8	5.5	0.59	0.92	1.05	19.8
12	R2	38	0.0	38	0.0	0.606	36.0	LOS C	0.8	5.5	0.59	0.92	1.05	19.8
Approach		129	0.0	129	0.0	0.606	21.3	LOS B	0.8	5.5	0.59	0.92	1.05	19.8
All Vehicles		1528	0.1	1528	0.1	0.606	4.2	NA	3.2	22.6	0.14	0.20	0.20	35.0

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

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

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [UNI_WORP AM 2030]

 Network: N101 [Proposed Network AM 2030 (Council RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 70 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh					
South: Worth St (S)														
1	L2	10	0.0	10	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.6
2	T1	25	4.0	25	4.0	0.442	35.4	LOS C	1.5	10.8	0.99	0.75	0.99	24.6
3	R2	36	0.0	36	0.0	0.442	39.9	LOS C	1.5	10.8	0.99	0.75	0.99	32.5
Approach		71	1.4	71	1.4	0.442	38.3	LOS C	1.5	10.8	0.99	0.75	0.99	30.4
East: Union Rd (E)														
4	L2	43	0.0	43	0.0	0.091	14.3	LOS A	0.9	6.6	0.55	0.56	0.55	42.6
5	T1	43	2.3	43	2.3	0.091	9.8	LOS A	0.9	6.6	0.55	0.56	0.55	42.9
6	R2	286	1.7	286	1.7	0.809	34.6	LOS C	6.7	47.6	0.95	0.99	1.24	25.9
Approach		372	1.6	372	1.6	0.809	29.4	LOS C	6.7	47.6	0.86	0.89	1.08	30.3
North: Worth St (N)														
7	L2	227	0.4	227	0.4	0.780	38.7	LOS C	5.1	35.8	1.00	0.90	1.18	25.6
8	T1	29	0.0	29	0.0	0.245	29.0	LOS C	1.4	9.8	0.91	0.73	0.91	28.4
9	R2	44	0.0	44	0.0	0.245	33.3	LOS C	1.4	9.8	0.91	0.73	0.91	28.1
Approach		300	0.3	300	0.3	0.780	37.0	LOS C	5.1	35.8	0.98	0.86	1.11	26.2
West: Union Rd (W)														
10	L2	255	1.2	255	1.2	0.186	7.4	LOS A	1.6	11.1	0.32	0.63	0.32	41.7
11	T1	357	2.0	357	2.0	0.418	12.0	LOS A	5.1	36.5	0.68	0.60	0.68	42.8
12	R2	29	3.4	29	3.4	0.418	16.6	LOS B	5.1	36.5	0.68	0.60	0.68	42.2
Approach		641	1.7	641	1.7	0.418	10.4	LOS A	5.1	36.5	0.53	0.61	0.53	42.5
All Vehicles		1384	1.4	1384	1.4	0.809	22.7	LOS B	6.7	47.6	0.74	0.75	0.83	34.6

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

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

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

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

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

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

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	4	29.3	LOS C	0.0	0.0	0.91	0.91
P2	East Full Crossing	18	29.3	LOS C	0.0	0.0	0.91	0.91
P3	North Full Crossing	8	29.3	LOS C	0.0	0.0	0.91	0.91
P4	West Full Crossing	22	29.3	LOS C	0.0	0.0	0.92	0.92
All Pedestrians		52	29.3	LOS C			0.91	0.91

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 [UNI_WORP PM 2030]

 Network: N101 [Proposed Network PM 2030 (Council RFB rates)]

Union Rd & Worth St, Penrith

Site Category: (None)

Signals - Fixed Time Coordinated Cycle Time = 115 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h
South: Worth St (S)													
1	L2	29	0.0	29	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	26.0
2	T1	24	4.2	24	4.2	0.727	63.9	LOS E	2.6	18.8	1.00	0.85	17.8
3	R2	18	0.0	18	0.0	0.727	68.5	LOS E	2.6	18.8	1.00	0.85	25.9
Approach		71	1.4	71	1.4	0.727	67.0	LOS E	2.6	18.8	1.00	0.85	23.7
East: Union Rd (E)													
4	L2	32	0.0	32	0.0	0.109	13.6	LOS A	1.8	12.4	0.42	0.43	43.5
5	T1	100	0.0	100	0.0	0.109	9.0	LOS A	1.8	12.4	0.42	0.43	43.9
6	R2	525	0.0	525	0.0	0.949	68.1	LOS E	24.0	167.9	0.92	1.08	17.6
Approach		657	0.0	657	0.0	0.949	56.5	LOS D	24.0	167.9	0.82	0.95	22.0
North: Worth St (N)													
7	L2	290	0.3	290	0.3	0.947	79.2	LOS F	8.5	60.0	1.00	1.08	17.1
8	T1	21	4.8	21	4.8	0.905	65.3	LOS E	8.5	60.0	1.00	1.02	18.7
9	R2	257	0.0	257	0.0	0.905	69.6	LOS E	8.5	60.0	1.00	1.02	18.6
Approach		568	0.4	568	0.4	0.947	74.4	LOS F	8.5	60.0	1.00	1.05	17.8
West: Union Rd (W)													
10	L2	190	0.0	190	0.0	0.121	6.2	LOS A	1.1	7.7	0.19	0.59	42.8
11	T1	191	1.0	191	1.0	0.179	9.5	LOS A	2.9	20.7	0.45	0.40	44.0
12	R2	16	0.0	16	0.0	0.179	14.1	LOS A	2.9	20.7	0.45	0.40	43.5
Approach		397	0.5	397	0.5	0.179	8.1	LOS A	2.9	20.7	0.32	0.49	43.6
All Vehicles		1693	0.3	1693	0.3	0.949	51.6	LOS D	24.0	167.9	0.77	0.87	23.7

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

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

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

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

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

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

Movement Performance - Pedestrians							
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P2	East Full Crossing	14	51.7	LOS E	0.0	0.0	0.95
P3	North Full Crossing	7	51.7	LOS E	0.0	0.0	0.95
P4	West Full Crossing	25	51.7	LOS E	0.1	0.1	0.95
All Pedestrians		53	51.7	LOS E			0.95

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

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

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

APPENDIX D

LOADING DOCK MANAGEMENT PLAN

614-632 HIGH STREET, PENRITH
LOADING DOCK MANAGEMENT PLAN

This Loading Dock Management Plan (the Plan) has been prepared to guide and manage the efficient and safe operation of the loading bays at the abovementioned address and is applicable to all future users of the building. The Plan shall be issued by the Owner's Corporation through its building manager/caretaker, to all new owners and tenants so they understand the procedures and limitations of the use of the loading bays. The Plan should be reviewed by the Owner's Corporation, as necessary, to adapt to any changes in circumstances. Contact details of the building manager or delegated person should be displayed throughout the various levels within the building.

The loading/delivery facilities comprise two loading bays as follows:

- 1 x bay capable of accommodating an 8.8m long medium rigid truck
- 1 x bay capable of accommodating an 11m long large rigid truck
- a minimum of 4.5m overhead clearance is provided at the truck vehicular entry and exit driveway, throughout the truck manoeuvring area and into the respective loading bays
- the loading bays are located close proximity to the bin rooms as well as corridors leading to the lifts and back of the retail shops

The following procedures are to be adopted for the use of the proposed loading/delivery facilities:

- all delivery vehicles must enter and exit the site in a forward direction at all times. Signage is to be installed at suitable locations prior to building occupation
- all delivery vehicles must reverse into the respective loading bays, common and private, thereby allowing them to exit the loading bay and the site whilst travelling in a forward direction
- service vehicle engines are to be switched off when not in use
- the largest service vehicle to access the upper levels must not exceed 11m in length. Service vehicles exceeding 11m in length are not permitted to access the site. Signage is to be installed at suitable locations prior to building occupation
- all loading bays and vehicular/pedestrian circulation areas must be kept clear of goods and must not be used for storage purposes at any time. Loading/unloading of trucks within the vehicular/pedestrian circulation areas is not permitted
- the Owner's Corporation shall implement a complaint system utilising an on-site diary to ensure the efficient, coordinated and equitable use of the loading bays by all authorised users

- the arrival of service vehicles and the operation of the loading bays shall be managed by the Owner's Corporation through its building manager/caretaker, to ensure that no loading bay users are required to wait on the street or look for alternative off-site loading spaces if the loading bays are occupied
- hours of operation of the loading dock will be determined as required for the building uses
- the loading bays, service areas and pedestrian circulation areas are to be kept clean at all times
- garbage is to be collected by standard-sized rear-loading trucks which range in overall length between 8m and 11m

Suitable signage is to be installed prior to building occupation, including, but not limited to:

- a "Service vehicle driveway only" sign installed at the service vehicle driveway off union Lane, visible from the street
- "Service vehicle exit only" sign installed on the inside face of the service driveway
- a "Maximum vehicle length strictly 11m" sign installed at the service vehicle driveway off union Lane, visible from the street
- "Watch Out For Pedestrians" and "Watch Out For Trucks" signs to be installed in the service area
- a "Maximum Clearance 4400mm" swing bar installed at the service vehicle driveway off union Lane, visible from the street.